

## **“EMAS Eastwards”**

(A project for collecting and disseminating research findings and exploring the wider implications of EMAS for application in Central & Eastern Europe and the Newly Independent States of the former Soviet Union)

# **Implications of the Spread of Voluntary, Standardised Environmental Management Systems in Central and Eastern Europe**

## **Project Report & Summary**

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## SUMMARY

Between February 1999 and July 2000, a team of researchers from Britain, Denmark, France, and Sweden carried out a telephone survey, background investigations, and six expert seminars in Central and Eastern Europe, with the purpose of exploring the consequences and implications of the spread of ISO 14001 and EMAS in this region. The telephone survey, carried out during the summer of 1999, targeted a large sample of EMAS-registered sites in 13 EU countries, and investigated the extent to which organisations with EMAS-registered sites place environmental management demands upon and/or cooperate with suppliers and subsidiaries in CEE/NIS countries. Background investigations involved identifying published studies and other information relating to the use of EMS. The six expert seminars were carried out in Romania, the Czech Republic, Lithuania, Bulgaria, Poland, and Russia, and created a setting for extensive dialogue with informed practitioners and researchers from industry, government, NGOs, and academia. Our investigations were focused not only upon questions relating to the adoption and use of voluntary EMS in firms and other organisations, but also upon broader questions dealing with national accreditation schemes and other institutional issues.

The project was supported by an *ENRICH* grant from the Science & Technology Directorate-General (formerly DG-XII) of the European Commission.

This report provides an overview of the project and discusses our findings and recommendations. Two companion documents also generated by the project are (1) a report on the 1999 telephone survey of EMAS-registered sites, and (2) an annotated bibliography of EMS-related materials identified during the background research. These are available through the project website, at:

**[www.lu.se/IIIEE/EMAS\\_Eastwards](http://www.lu.se/IIIEE/EMAS_Eastwards)**

We have deliberately avoided including discussions in this report about such generic topics as the advantages and disadvantages of EMS, barriers to implementation, and best practices. While these topics frequently came up in our expert seminars, much that was discussed was applicable to EMS all over the world, and to include such material here would only be to unnecessarily duplicate what has already been extensively covered in other books and articles.

Another topic that this report deliberately excludes concerns the many EMS training projects, pilot and demonstration projects, handbooks, government subsidy programmes, and other actions taken either domestically or with international partners to promote the spread of EMS in the CEE/NIS region. These were often brought up in discussions during the expert seminars. However, systematically identifying and creating an inventory of such actions is outside the scope of this project, and they are moreover by now sufficiently large in number that to do so would be no trivial undertaking.

We are in debt to many people for their help and encouragement during this project. First, thanks go to the seminar hosts and their staffs in the six locations where expert seminars were held: Prof. Liviu Mihail Baloiu in Bucharest; Dr. Alena Labodová and her staff in Ostrava, with the assistance of Vladimir Dobes and colleagues at the Czech Cleaner Production Centre in Prague; Prof. Jurgis Staniskis and his colleagues at APINI in Kaunas; Arne Grove and Dr. Tatiana Guseva, supported by many helping hands at Ecoline in Moscow; Dr. Metodi Konstantinoff, Ivona Grozeva, and their associates in Sofia and Varna; and Robert Pochyluk, Malgorzata Macniak, and their colleagues in Gdansk. Special thanks also go to Jon Faragher for a great deal of help in making the Varna and Gdansk seminars the successes they were; to Zinaida Fadeeva for her practical assistance at the Moscow seminar; and to our colleagues at the IIIEE in Lund for both administrative and expert assistance at various stages of the project – not least Kristin Lindell, who made sure all the bills were paid and accounts kept in order. Finally, we would like to again sincerely thank all the participants who attended the expert seminars and made the rich dialogue and pleasant social exchanges what they were. Without the dedicated efforts of several hundred people in at least a dozen countries – extensively linked by Internet and fax machine - this project would not have been possible.

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## PROJECT BACKGROUND INFORMATION

### Partner Information

The four principal investigators at partner Institutions (Contractors) in EU Member States have been:

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Additional partners in six CEE/NIS locations have acted as local organisers and co-ordinators of the expert seminars. They were:

#### ***Expert Seminar - Bucharest, Romania (September 27-28, 1999)***

Faculty of Economic Studies Independent University Titu Maiorescu (UITM)  
& National Institute for Economic Development (INDE)  
<http://www.inde.ro>  
Host: Dr. Liviu Mihail Baloiu, Ph.D., Prof.  
baloiulm@alpha.inde.ro  
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#### ***Expert Seminar - Ostrava, Czech Republic (October 4-5, 1999)***

Institute of Environmental Engineering  
Faculty of Mining & Geology  
VSB - Technical University  
<http://www.vsb.cz>  
Host: RNDr. Alena Labodová  
alena.labodova@vsb.cz

#### ***Expert Seminar - Kaunas, Lithuania (October 14-15, 1999)***

Institute of Environmental Engineering (APINI)  
Kaunas Technical University  
<http://www.ktu.lt>  
Host: Prof. Hab. Jurgis Staniskis

Jurgis.Staniskis@apini.ktu.lt

***Expert Seminar - Moscow, Russia (April 3-4, 2000)***

World-wide Fund for Nature (WWF),  
<http://www.wwf.ru>  
Ecoline (Environmental NGO),  
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***Expert Seminar - Varna, Bulgaria (May 4-5, 2000)***

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& National Electric Company (NEK)  
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[igrozeva@nek.bg](mailto:igrozeva@nek.bg)

***Expert Seminar - Gdansk/Sopot, Poland (May 18-19, 2000)***

Centre for Environmental Studies  
Technical University of Gdansk  
<http://www.pg.gda.pl/cerso/cenvig.html>  
Gdansk, Poland  
Host: Robert Pochyluk  
[kubal@pg.gda.pl](mailto:kubal@pg.gda.pl)

## Objectives and Goals

The *primary objective* of this project was to carry out a collaborative learning exercise in the area of environmental management whereby experts' knowledge of one another's' domains of research and practice was increased and a synthesis of this knowledge achieved (i.e., gaps filled and value added) which could be of use in both public policy and enterprise management. The *secondary objective* was to foster the further development of personal contacts, joint research experience, and mutual understanding between researchers in Eastern and Western Europe who work in the areas of environmental management, cleaner production, and sustainable industrial development.

The *goals* of the EMAS Eastward project were as follows:

- To thoroughly review and examine the accumulated body of research findings to-date (i.e., a literature review and discussion with experts) regarding EMAS (the Eco-Management and Audit Scheme<sup>1</sup>) and ISO 14001 - as they have been implemented around the world, considering their short- and long-term implications for corporate environmental performance, corporate economic performance, local and regional development, and global change. Areas looked at in this review included factors that promote or inhibit the implementation of EMS; anticipated and unanticipated consequences; the ways in which EMS are designed and used; relationships of EMS to other corporate environmental management practices; current trends.
- To publish the results of the literature review in the form of an annotated bibliography.
- To carry out a survey-based study of EU sites that have implemented EMAS in order to assess supply-chain-related and other specific implications for firms in Central and Eastern Europe (CEE) and the Newly Independent States (NIS) of the former Soviet Union.
- To publish the results of the survey.
- To conduct a series of expert seminars at CEE and NIS locations with partners from universities, firms, government and NGO's at which the above findings and implications could be further explored and discussed in the CEE/NIS context.
- To publish a synopsis of the insights shared and conclusions reached at the above seminars that can be used both as a point of departure for further policy and management research into the use of EMAS and ISO 14001 in CEE and NIS enterprises, and as a source of useful reflections for CEE and NIS business leaders who are considering a more systematic approach to environmental management.

- To translate the synopsis into a number of CEE and NIS languages and make these translations available both in written form and via the World Wide Web.
- To use the above process to develop and strengthen existing networks of researchers, policy makers, environmental advocates and enterprise managers within CEE/NIS countries and between CEE/NIS countries and EU Member States who work in the areas of corporate environmental management, sustainable development and global change.

### **The Contribution of the Proposed Project to Global Change Research**

Research into global change is at the centre of the mission of the ENRICH programme. The ENRICH Call for Proposals defined “global change research” broadly, breaking it down into three categories. The objectives and goals of “EMAS Eastwards” were most closely in line with the third category: “(iii) (to) provide a scientific basis for the development of appropriate technical, economic and social mitigation/adaptation strategies.” From a global change perspective, it is relevant to ask whether EMS will ultimately be adopted into the practices of firms, accredited certifiers/verifiers, and national institutions (e.g., accreditation bodies, EMAS competent bodies) in such a way that it contributes to sustainable development.

EMAS and ISO 14001 can be interpreted and operationalised in many ways, and firms are provided great latitude in how they design/define their environmental policies, objectives, programmes, effects, performance targets and indicators<sup>2</sup>, monitoring procedures, and other elements of environmental management systems. The usefulness of the EMS as a strategic business tool and as a source of both information and motivation with respect to sustainable development (i.e., development that adequately addresses the full range of global change issues - climatic, biogeochemical, and socio-economic) depends heavily on how these designs/definitions are carried out. For instance, a firm might successfully obtain EMAS registration with an EMS that only tracks a few limited local environmental effects (e.g., BOD in water effluent); however, implementation of EMS on a pan-European scale that furthers the spirit as well as the letter of “Toward Sustainability”<sup>3</sup> should include an exploration of how global effects (e.g., climate change, biodiversity, deforestation, ozone depletion, etc.) can also be addressed in the firm- or site-level EMS, monitored (possibly at aggregated levels), and hopefully mitigated.<sup>4</sup>

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<sup>1</sup> EC Council Regulation (No. 1836/93) of 29 June 1993) allowing voluntary participation in a Community Eco-Management and Audit Scheme

<sup>2</sup> The term “performance indicator” is not used in the text of Council Regulation (EEC) No 1836/93, nor in ISO Standard 14001, but it has entered into common usage in recent years and is mentioned in ISO 14004.

<sup>3</sup> The title of the 5<sup>th</sup> Community Action Programme regarding protection of the environment, COM(92) 23.

In our exploration of the experiences, consequences, and implications of EMS in a great variety of countries, we have kept the global-change dimension firmly in mind, and have actively sought to include it in the seminars and documents that result. This has not always been easy, as discussions frequently became focused upon practical firm-level, local and national issues. Nonetheless, as the seminars unfolded, we were often reminded of the larger global context – political, economic, social, and ecological – in which our discussions were taking place.

In summary, EMAS and ISO 14001 can undoubtedly provide the basis for a strategy to mitigate environmental impacts, and whilst the texts of both EMAS and ISO 14001 make no specific reference to sustainable development, they can undoubtedly assist firms in taking measures which contribute to achieving this goal.

### **Intended Target Audience**

This project was conceived and carried out with the various stakeholders of EMAS and ISO 14001 in mind: managers in industry, consultants, auditors, regulators, NGOs, university researchers, etc.

### **Methodology**

The EMAS Eastwards project consisted of 12 distinct work packages. The work packages are listed and described below.

#### *Work Packages*

- WP1 - Project initiation
- WP2 - Collection, review & compilation of existing research findings
- WP3 - Making sense of compiled findings
- WP4 - Design and implementation of survey
- WP5 - Analysis and interpretation of survey
- WP6 - Design of CEE/NIS seminars
- WP7 - Organisation of CEE/NIS seminars
- WP8 - Carrying out of CEE/NIS seminars
- WP9 - Documentation of CEE/NIS seminars
- WP10 - Writing of final report based mainly on seminars
- WP11 - Translation of final report into CEE/NIS languages
- WP12 - Dissemination of final report

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<sup>4</sup> This discussion is closely related to ongoing developments in such areas as “sustainable development indicators” and “the triple bottom line”.

### **The Expert Seminars: Format & Method**

Since the main goal of the seminars was to facilitate dialogue among qualified experts representing various relevant viewpoints, we attempted to create a balanced representation of several sectors (i.e., government, industry, NGOs, etc.) and several countries clustered regionally (e.g., the Baltic countries were heavily represented in Kaunas, and in Ostrava most participants came from Poland and the Czech and Slovak Republics). Invitations were issued accordingly (based on an extensive search using various networks of contacts plus published sources). While it was not always possible to identify an ideal sample of experts representing all relevant actors and perspectives for any given seminar, nor to secure their participation once they had been identified and invited, we succeeded nonetheless in attracting a very diverse sample of qualified experts to each seminar, and thus in catalysing a very lively discussion.

The seminars were all two days long. The first day usually focused on national issues of an institutional nature (e.g., the accreditation system), and the second day on firm-level issues (although it was never easy to keep these related topics separated). The seminars were also set up such that each afternoon involved a group-work session, where questions (either provided by the organisers or generated by the participants) were assigned to small groups, which then worked on developing responses and presented them to the entire group of participants afterwards. These questions varied from seminar to seminar – gradually becoming more refined as we gained experience – and the discussions that ensued are summarised in the findings and recommendations below.

The seminars discussions were either tape-recorded or video-recorded for later review and analysis.

An appropriate venue was selected for each seminar – one conducive to good dialogue but also accessible for international travellers – and the evening of the first seminar day included a social event to provide further opportunity for informal exchange and follow-up discussions.

### **Note on Relevance**

One of the only things that all of the many nations of Central and Eastern Europe share is former membership in the Warsaw Pact, COMECON (Council for Mutual Economic Assistance), and/or other arrangements that constituted the “Soviet Block” during the period from 1945 to the early 1990s. Otherwise, these countries have had different histories and encompass a large variety of cultures, ethnic groups, and geographies. There are also significant differences in economic prosperity, political and institutional stability, and in their formal relationships with Western Europe, the EU, NATO, and other multilateral institutions. In the specific area of EMS, for example, the number of ISO 14001 certificates issued at present ranges from 153 in Hungary – a number that exceeds total certifications in 7 of the 18

EU/EFTA countries – to zero certificates in 7 and 1 certificate each in 4 of the 19 CEE/NIS countries covered in this report.<sup>5</sup>

It is therefore usually inaccurate today to refer to “Central and Eastern Europe” as a whole, since there is little that is even close to uniform across this large, many-faceted region.

Moreover, the six expert seminars took place in quite different settings, with a great diversity of people. Government, industry, academia, NGOs, consulting firms, and other kinds of organisations were represented. The seminars by their very nature therefore brought together many viewpoints.

How is it therefore possible to write of “general findings” when the seminar participants and the environments from which they came were so heterogeneous?

We argue that what makes it possible is the fact that the CEE and NIS countries have all recently undergone a profound change in their economies, involving the replacement of a centrally planned, socialist state with a liberal market economy, accompanied by a great increase in openness, competition, access to information, and international trade and other relationships (e.g., travel, investment, joint ventures). Policy makers, managers, entrepreneurs, investors, and other actors in these countries have had to contend with similar challenges, such as the privatisation of industry, radical deregulation of markets, currency instability, changes in legal codes, new kinds of crime and corruption, economic dislocation, and a continuing tension - often at quite a personal level - between older and newer ways of doing things. For example, while it is valid to explore the use and implications of ISO 14001 and EMAS in the region today, such a discussion would have been irrelevant and even unthinkable prior to 1989.

Similar transitional phenomena have consequently been experienced in the countries within this region. Moreover, since ISO 14001 and EMAS are standard from one nation to the next, it is valid to investigate commonalities that relate to them, and to formulate diagnoses and action plans that address phenomena related to the expanded use of EMS across this region. Finally, when their interests intersect, professionals who work in areas where EMS is a relevant topic stand to gain by the exchange of ideas and experience, regardless of local and national variability.

The following section of this report attempts to summarise their observations and advice.

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<sup>5</sup> These figures are for July 2000. *Source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de.*

## **GENERAL FINDINGS**

The findings and impressions that emerged from the seminars are summarised in the points that follow, and selected items are then discussed at greater length.

### **Organisation-level Issues**

**Relevance of International Links & Markets** Implementation of an EMS and certification to the ISO 14001 standard (or quasi-EMAS registration; see below) were mainly perceived as relevant by industrial enterprises that have major markets in OECD countries, are partly or wholly owned by firms based in OECD countries, or are pursuing investors or purchasers in such countries. In a very few cases, domestic competition from foreign firms with a good image (including environmental responsibility) was also mentioned, but export markets in Europe and potential mergers & acquisition (M&A) activity were the dominant rationales. Without them, the general attitude appears to be (predictably) that EMS certification/registration is a costly luxury.

**Relevance of the Better-Management Motive** Very few organisations appear to be pursuing EMS implementation as a means of developing better management methods, although this motive is seen by many experts as valid, especially since positive experience with TQM and ISO 9000 is accumulating in the region.

**Certification without Compliance** In a number of CEE countries, a phenomenon that deserves attention is companies being certified to ISO 14001 without being in compliance with environmental regulations. Examples of this situation were cited at most of the seminars. While not strictly a requirement for certification, the rule of thumb in the EU at least is that an organisation must routinely be in compliance for certification to be granted. However, in certain CEE countries, Section 4.2 (c) of ISO 14001 - (“... a commitment to comply with relevant environmental legislation and regulations ...”) appears to have been interpreted liberally.

This situation could be explained by the fact that in all areas of the former Soviet Union and in nearby countries such as Romania, many present regulations are so stringent that many companies have never been in compliance and are not likely to be soon. Many CEE governments have maintained the ambitious GOST health, environment, and safety standards on their law books (see below), creating conditions in which chronic non-compliance is common. In addition, those countries that have withdrawn GOST standards have replaced them EU environmental codes and emissions standards which, although sometimes less stringent, are nevertheless still sometimes too demanding for some firms to meet.

A second factor that may partly explain this situation is that a number of CEE countries (e.g., Russia) use a system of pollution charges whereby enterprises that exceed various emissions levels must pay the

state penalty fees, and in these circumstances governments have little incentive to set emissions standards at levels most enterprises could reach, since it would reduce state revenue. (To be sure, inflation in some countries where pollution fees have not been increased in a long time has reduced the real value of these fees to insignificance for many enterprises.)

## National Issues

**The number of ISO 14001 certifications** varies considerably among CEE countries, from 0 nearly 200 at present. In several of the countries with higher totals, the per-capita penetration of ISO 14001 certifications exceeds that of such countries as the USA, Canada, and Germany. *See Table A1 in the Appendix.*

Several cases of “**quasi-EMAS**” registrations were noted, such as one in Lithuania, one in Poland, and several in the Czech Republic, where full conformity with EMAS requirements has been verified by an accredited foreign verifier, but obviously not registered as the scheme does not currently operate outside the EU. The cases noted were exceptional in that the sites were subsidiaries of EU-based companies, and the verifications of conformity were carried out by EU-based accredited verifiers hired by the parent company. Potential exists for more of this. The possibility of the scheme operating in non-Member States is discussed below.

**Awareness and knowledge of EMAS** appeared to be generally low outside of the CEE countries furthest along in their negotiations with the EU for accession (Czech Republic, Estonia, Hungary, Poland, and Slovenia). This is not surprising.

At the seminars, many participants felt that awareness and **knowledge** about voluntary schemes in general and EMS in particular **among policy makers and civil servants** was very low. The strength of this opinion varied according to nationality, but was widespread. It was generally felt that better information and education would eventually cause this situation to change, but that active efforts are needed (by for example international accreditation and standardisation bodies and the European Commission) to raise knowledge and awareness.

A dilemma faced in many smaller countries, such as the Baltic States, is that it is **doubtful that an accreditation institution for EMS could be supported by fees** paid by domestically based certification bodies and EMAS verifiers, as the potential market is quite small. Two solutions discussed by seminar participants were (1) employing a scheme similar to that of Sweden and Norway, where the accreditation body receives state support, or (2) collaborating internationally to maintain a regional accreditation body.

A related dilemma faced by many smaller countries (e.g., Estonia, Lithuania) is that there are **too few domestic certification bodies and/or certified/registered firms/sites** in the country for adequate

auditor training and accreditation to be maintained. In other words, to achieve a recognised auditor qualification (such as that of EARA – the Environmental Auditor's Registration Association), prospective auditors must participate in a minimum number of EMS certification audits in order to qualify, and must then maintain a minimum level of audit activity over each year to retain accreditation. If this cannot be achieved, then their qualifications are put in jeopardy. Prospective auditors have attempted to solve this by carrying out “trial” audits, but it is questionable whether EARA would recognise this. Many seminar participants cited this as a practical barrier to building EMS capacity in their countries.

**Inherent Conflicts of Interest** All accreditation, conformity assessment, and certification schemes contain the seeds of disputes due to inherent conflicts of interest. This is the same around the world. For instance, certification bodies may be tempted to award certificates to non-compliant firms in an attempt to maintain/increase their client base. To ensure that this does not occur, a credible system of accreditation is required where the activities of certification bodies are scrutinised in an appropriate manner by accreditation bodies. Membership of the European co-operation for Accreditation (EA) provides some guarantee that accreditation systems are credible, as accreditation bodies can become members only if they meet the essential requirements of the European standards on accreditation. The following countries in CEE/NIS are members of EA: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Slovakia and Slovenia (Romania also, but only represented by an association)<sup>6</sup>. Within the EA, an environmental multilateral agreement exists whereby signatories agree to accept the accreditation schemes operated by the other signatories as equivalent to their own. The multilateral agreement involves a peer review where signatories assess in detail the conformity of other signatories to the relevant international standards. As yet, no countries in the CEE/NIS region are signatories to the agreement.

One example of how conflicts of interest can lead to problems is the attempts in certain countries by public authorities - notably environmental agencies/ministries, standards bodies, or accreditation agencies - to **simultaneously act as EMS accreditation body and certification body** (in some cases as sole certification body with a monopoly position). While this creates opportunities for profit by the ministry/agency, it would clearly be incompatible with international norms of conformity assessment (see Appendix 2) and would therefore substantially diminish the value of an ISO 14001 certificate. This situation has existed in Russia, Belarus, Ukraine, and Poland at various times, and in some cases has not yet been resolved.

Another related source of concern has been efforts by regulatory authorities to make **ISO 14001 certifications mandatory**, and carry them out using “auditors” who are either government inspectors or licensed privately employed inspectors. This amounts to the use of the standard as a command-and-control regulatory scheme, and perverts the aim of voluntary EMS. In the case of licensed private “auditors”, the effect is the privatisation of compliance inspections, which is not in itself necessarily a bad

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<sup>6</sup> Source: [www.european-accreditation.org](http://www.european-accreditation.org)

thing (as long as the private inspectors are honest), but these inspections should be seen for what they are, and not called “EMS audits”. There have been cases of this in Estonia, Russia, Belarus, and certain municipalities in Latvia (e.g., Ventspils), often along with a national auditor training programme leading to some kind of special accreditation that is not recognised by international auditor registration bodies such as EARA. All have experienced resistance from companies, bad press, NGO counter-efforts, and other problems.

An issue noted by some seminar participants is the continuing **dominance of foreign EMS consultancies/auditing firms** in the CEE countries. Around the region, the environmental wings of major global consulting and/or auditing firms (e.g., BVQI, Det Norske Veritas, KPMG, PriceWaterhouse Coopers, SGS, TÜV etc.) have very successfully competed for EMS implementation jobs, certification contracts, due diligence engagements, etc., and posed substantial competition for local actors trying to build such practices. While the major foreign firms usually employ and invest in local talent, some seminar participants felt their influence was excessive and tended to crowd out potential local competitors. It also was seen as keeping the prices of audits and consulting high, and fuelling the impression that EMS is an expensive pursuit. Nonetheless, seen in a longer-term perspective, by assisting in the spread of EMS and by training local auditors and consultants, the international firms create new professional capacity for serving an expanding base of implemented EMS in firms. As environmental awareness grows and EMS-related requirements are extended up the supply chains of large firms (especially in the EU), more opportunities will likely arise for the creation of local firms staffed by locally based professionals that serve smaller suppliers.

In countries where modern environmental management practices such as EMS are relatively new, there are vigorous debates about the **correct way to translate** such terms as “environmental management system” and “auditor” into **local languages**. This seems to be particularly the case where Russian dominates, and appears to stem from economic history and the sharp differences between the Soviet Union and the West in terms of commercial and managerial traditions. A further complicating factor is the dominance that Russian has had over national languages in such countries as Belarus and Ukraine, with the result that some national languages have a less-developed vocabulary for public policy, business, and management.

Thus, EMS is being variously translated into “system of environmental management,” “system of environmental industry”, etc., and the word for “ecological” is often used instead of a word corresponding more clearly in meaning to “environment”). Another example is the use of words for “audit” that may confuse this concept with inspections, reviews, assessments, and investigations. Also, use of the English word “management” was the cause of long debates as well - the question of whether to use the English word or for example a Russian word that does not have exactly the same meaning.

Proponents of EMS in the countries affected are concerned about this situation because they feel it adds confusion to a context where clarity is already in short supply (especially when unclear language is already written into the official translations of standards, regulations, guidelines, etc.). In these countries, a priority is thus the establishment of a consensus about the vocabulary of EMS accreditation and certification schemes and practices, and NGOs, universities, and the media can clearly play a constructive role.

Finally, it is worth mentioning the continuing influence of the **Soviet-era “GOST” environmental, health & safety standards** in the regulatory regimes of CEE countries, which formed part of the legacy inherited by Belarus, Estonia, Latvia, Lithuania, Russia, and Ukraine, among others. In some instances (e.g., concentrations of evaporated airborne solvents such as acetone in the workplace), the GOST standards were more stringent than typical Western standards. This was usually for show, and not enforced (although there are cases of plants in CEE countries with for example ventilation systems dimensioned for achieving GOST standards). However, since 1989, politicians in new democratic governments have found it unpopular to recommend relaxing GOST standards, since environmental quality is a sensitive topic in countries where populations today must suffer the consequences of decades of neglect. As a result, with GOST standards still on the books, many new factories with environmental performance levels equal to those of their counterparts in say Germany or France are chronically out of compliance with government regulations. And even in countries that have formally repealed the GOST standards, their legacy is a greater stringency in emissions and exposure standards that makes compliance more difficult.

As of May 2000, the GOST system of standards remained in place in Estonia, Belarus, Lithuania, and Russia, and had been repealed in Latvia and Ukraine.

## **CONCLUSIONS & RECOMMENDATIONS**

While it was not the aim of the expert seminars to establish a consensus around questions or to gauge majority opinion, we attempted to listen to all sides of debates and ascertain agreements when they did emerge. Many such points of agreement and recommendations from the seminars are implicit in the preceding pages, but for the sake of clarity they are repeated and summarised here. It is hoped that this report will be used as a basis for policy discussions and in education and training, so they are kept brief in the interest of widest possible dissemination.

**All relevant stakeholders should be consulted** in the creation of national accreditation systems and the development of professional capacity to establish, certify and maintain EMS in organisations. The accreditation and certification systems should be the monopoly of no single actor – public or private. For a national accreditation system to be internationally credible, it must meet international standards, and this includes facilitation of public dialogue and transparency of decision making.

**Existing international accreditation institutions and structures should be used.** Some seminar participants expressed a sincere desire for internationally credible accreditation and certification regimes in their countries, and sought international involvement and oversight in support of this goal, but seemed to prefer “customised” solutions, rather than full, official implementation of IAF and EA guidelines and other norms. The reason seemed to be that such a strategy would require the co-operation of state or quasi-state agencies, whom they do not trust. (This opinion came predominantly from representatives of universities, NGOs, and small firms.) This position is problematic. It might appear to be an attractive strategy in the short run, especially since it would provide competition for any state-sponsored schemes and hasten change, but any long-term solution must enlist the support of all major social partners to avoid the confusion and inefficiency that rival schemes would give rise to. To conform to international accreditation norms, it must not be discriminatory.<sup>7</sup>

It is common to look at one’s own context and predicaments as unique, and thus requiring special solutions. However, the greatest progress toward routine use of voluntary EMS has been achieved in countries that have adopted the complete accreditation structure as embodied in IAF and EA guidelines and agreements. There are no shortcuts, and the creation of special national solutions that deviate in various ways from international norms only creates uncertainty and confusion, and jeopardises the achievement of an accreditation/certification system that is as credible as any other. There are today a number of CEE/NIS countries where the institutional accreditation/certification is incomplete, and where different actors are vying for control. In these countries, all efforts must be made to establish an atmosphere of trust and accountability so that these actors realise that a monopolistic, discriminatory form

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<sup>7</sup> It is worth noting that the first requirement for an accreditation body under ISO 45010 is that “the policies and procedures under which the accreditation body operates shall be non-discriminatory and they shall be

of control is not the only available option, and that pluralistic systems where control is shared can be more effective (as well as internationally credible).

**International accreditation bodies are not a viable solution.** In several of the expert seminars, including those in Moscow and Bucharest, some participants argued for the creation of international accreditation bodies run and staffed by experts from other countries - with some kind of supranational affiliation - that would supervise and operate accreditation systems according to international norms. There appeared to be two motives behind this proposal: first, it would quickly bring competencies into countries, and bypass the long process of building up experience and mindsets that a nationally based strategy entails, and second, it would avoid the problem of distrust among different actors/sectors in a number of CEE/NIS countries today, leading to difficulty in collaborating. The first motive may be defensible, although knowledge is mobile and can be fairly quickly transferred (e.g., with international exchanges of trainers). The second motive, however, should be viewed with caution, because it sidesteps the fundamental causes of distrust and lack of co-operation. Bringing in foreigners might cause more problems of trust and confidence than it solved, and would not address the deep issue of building up faith in public institutions in countries that have undergone wrenching transitions. This solution represents a shortcut that – even if it were feasible – would not be advisable. A genuine, legitimate national accreditation system that met European standards would be extremely valuable, and is the goal nations should strive towards.

**There is merit in considering “shadow implementation” of EMAS in CEE/NIS countries.** This issue deserves further consideration. It has apparently been a subject of discussion in the EMAS Article 19 Committee at times, especially during the development of EMAS 2 in the spring of 2000, but has not been extensively debated.

Accession to the European Union requires full implementation of EMAS as a component of the EU's environmental “acquis” (legal and regulatory code), including the requirement to designate a competent body to be responsible for carrying out the tasks provided for in the regulation (Article 18 of Council Regulation 1836/93; Article 5 in the proposed text of “EMAS-2”). Participation in EMAS is thus an automatic requirement of EU membership. It is furthermore, as currently constituted, an impossibility for non-member states, since there is no provision for non-member representatives to participate in legislation, policy decisions, or information exchange and peer reviews in relation to the regulation.

However, “shadow implementation” is entirely possible (meaning parliamentary enactment of the regulation, creation of a competent body, accreditation of verifiers, registration of sites that are in conformity, etc.). This is in fact the strategy being currently pursued in the Czech Republic, and under discussion in Poland and Hungary - all nations that are negotiating with the EU for membership and which

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administered in a non-discriminatory manner. Procedures shall not be used to impede or inhibit access by

may become members as soon as 2005. There is nothing to stop any nation from moving ahead with shadow implementation if it is considered to be in the national interest, which could include promotion of trading ties with the EU or timely preparation for EU membership. To create a “stand-alone” shadow-EMAS scheme (without participation in various committees, formal registration, etc. as stipulated for EU Member States), the only thing that is impossible without special agreement is use of the scheme’s logotype.

Doing so could have several benefits. First, by creating a state-sponsored, “higher” benchmark associated with the legitimacy of the European Commission, an incentive is potentially created for ISO 14001 certifiers to observe good practices and not dilute or abuse the credibility of the standard. Second, it sends a general signal to industry that voluntary, standardised EMS is an accepted, supported dimension of the environmental regulatory regime and that the state is prepared to use “carrots” as well as “sticks” in pursuing policy goals. Third, in the case of nations that have applied for EU membership, it is more efficient to do things in a measured, well-co-ordinated fashion - rather than all at once.

The European Commission could facilitate this process by setting up an EMAS “associate register” in Brussels, and by working with CEE governments to implement competent bodies.

**There is, as always, a need for more education and training.** To judge from what many seminar participants said, this need is especially acute among managers in industry and among politicians and regulators. And while education and training needs vary by region and country, the need is widely felt, so there should continue to be many opportunities to carry out programmes on an international level as well as nationally or locally.

# APPENDICES

## APPENDIX 1: EXPERT SEMINAR INFORMATION

***Bucharest, Romania (September 27-28, 1999)***

### Programme

## SEMINAR PROGRAMME

*Bucharest, Romania, September 27-28, 1999*

### **Monday, September 27 - Theme: Institutions & Public Policy**

Welcome and Opening Remarks (Ralph Meima, IIIIEE, Sweden; Prof. L-M Baloiu, UITM, Romania)	9:00
Introduction by a Representative of the Romanian Government	9:30
General EMAS/ISO 14001 Update (Richard Starkey, CCEM, UK)	10:00
<i>Coffee Break</i>	<i>10:45</i>
Country Updates - Reports from Seminar Participants	11:00
<i>Lunch</i>	<i>12:30</i>
Introduction to Working Group Session	14:00
Working Group Session	14:15
<i>Coffee Break</i>	<i>15:30</i>
Group Reports & Discussion	16:00
Concluding Remarks for the Day	17:00
<i>Dinner</i>	<i>To be announced</i>

## SEMINAR PROGRAMME (continued)

### Tuesday, September 28 - Theme: EMS at the Enterprise Level

Welcome and Review of Monday's Discussions	9:00
Summary and Discussion of Existing EMS Research Positions & "Toolkits" (Hélène Poimboeuf, APDD, France)	9:30
<i>Coffee Break</i>	<i>10:30</i>
Presentation and Discussion of the 1999 "EMAS Eastwards" Survey Results (Dr. Knud Sinding, HHA, Denmark)	11:00
Presentation about experiences with ISO 14001 Implementation at OLTCHIM S.A. (Mr. Stanica, Mgr., Environment & Quality)	
<i>Lunch</i>	<i>12:00</i>
Introduction to Working Group Session	13:30
Working Group Session	13:45
<i>Coffee Break</i>	<i>14:45</i>
Group Reports & Discussion	15:00
Closing Remarks	16:00

**Participant List (excluding project staff)**

*Austria*

Ms. Claire Buckley, KWI Architekten Ingenieure Unternehmensberater, St. Pölten

*Croatia*

Ms. Sanja S. Pekas, Hazardous Waste Management Agency, Zagreb

*Romania*

Prof. Liviu-Mihail Baloiu, Universitatea Libera Titu Maiorescu (UITM), Bucharest

Mr. Doina Nicu, Electroaparataj S.A., Bucharest

Prof. Marieta Olaru , ASE, Bucharest

Mr. Cristian Stanica, OLTCHIM S.A.

Mrs. Mihaela Teaca, WS Atkins, Bucharest

Mr. Tiberiu Tripa, Electroaparataj S.A., Bucharest

*Slovenia*

Mr. Ivo Kejzar, OIKOS Inc. Environmental Consulting, Domzale

Mr. Robert Spendl, OIKOS Inc. Environmental Consulting, Domzale

**Evaluation**

**BUCHAREST, SEPTEMBER 27-28, 1999**

12 evaluation forms were filled out by participants

**1. Did you receive all relevant information before arriving at the workshop?**

Yes	No
9/12	3/12

**2. How useful was the information contained in your document pack?**

1	2	3	4	5
0/12	1/12	1/12	7/12	3/12

**3. How useful was the content of the various presentations?**

1	2	3	4	5
0/12	1/12	3/12	3/12	5/12

**4. How well was the information presented?**

1	2	3	4	5
0/12	0/12	3/12	7/12	2/12

**5. How relevant were the topics discussed in groups?**

1	2	3	4	5
0/12	1/12	1/12	5/12	5/12

**6. Were the groups a useful way of discussing the topics?**

1	2	3	4	5
0/12	1/12	1/12	5/12	5/12

**7. What do you think of the overall programme of the seminar?**

1	2	3	4	5
0/12	1/12	3/12	5/12	3/12

**8. How well were the seminar sessions organised?**

1	2	3	4	5
0/12	0/12	2/12	5/12	5/12

**9. What was your opinion of the food and accommodation**

1	2	3	4	5
0/12	1/12	5/12	3/12	3/12

**APPENDIX 1: EXPERT SEMINAR INFORMATION (continued)**

***Ostrava, Czech Republic (October 4-5, 1999)***

**Programme**

**SEMINAR PROGRAMME**

*Ostrava, Czech Republic, 4-5 October 1999*

**Monday 4 October - Theme: Institutions & Public Policy**

Welcome and Opening Remarks	9:00
Ralph Meima, IIIIEE, Sweden Alena Labodová, Technical University Ostrava Vladimir Dobes, Czech Cleaner Production Centre	
General EMAS/ISO 14001 Updates (Richard Starkey, CCEM, UK)	9:30
<i>Coffee Break</i>	<i>10:15</i>
Country Updates - Reports from Seminar Participants	10:45
<i>Lunch</i>	<i>12:15</i>
Introduction to Working Group Session	13:45
Working Group Session	14:00
<i>Coffee Break</i>	<i>15:15</i>
Group Reports & Discussion	15:45
Concluding Remarks for the Day	17:00
<i>Return to Dormitory</i>	<i>17:30</i>
<i>Leave Dormitory for Dinner</i>	<i>18:15</i>

## SEMINAR PROGRAMME (continued)

### Tuesday 5 October - Theme: EMS at the Organisation Level

Welcome and Review of Monday's Discussions	9:00
Summary and Discussion of Existing EMS Research & Toolkits (Hélène Poimboeuf, APDD, France)	9:30
<i>Coffee Break</i>	<i>10:30</i>
Presentation and Discussion: 1999 "EMAS Eastwards" Survey (Dr. Knud Sinding, HHA, Denmark)	11:00
<i>Lunch</i>	<i>12:00</i>
Introduction to Working Group Session	13:30
Working Group Session	13:45
<i>Coffee Break</i>	<i>14:45</i>
Group Reports & Discussion	15:15
Closing Remarks	16:15
End of Programme	16:30

*Sightseeing/social event for those not leaving immediately after close of seminar will be organised if there is a demand.*

**Participant List (excluding project staff)**

*Czech Republic*

Mr. Zdenek Beranek, Czech Cleaner Production Centre, Prague  
Mr. Vladimir Dobes, Czech Cleaner Production Centre, Prague  
Mr. Marek Fajkos, Technical University - Ostrava  
Mr. Bretislav Klic, RIEA, Ostrava  
Dr. Alena Labodová, Technical University - Ostrava  
Mr. Jiri Vavrinek, RIEA, Ostrava  
Mr. Roman Vyhnánek, Czech Environmental Management Centre, Prague

*Poland*

Dr. Boguslaw Chelstowski, 3E Consulting Sp.C,  
Dr. Alexej Galka, Agricultural University, Krakow  
Mrs. Zofia Grad-Kumuniecka, Ministry of Environmental Protection, Warsaw  
Mr. Michal Krajewski, Czestochowa Steel Works  
Mr. Ryszard Nowosielski, Silesian University of Technology, Gliwice  
Mr. Andrzej Ociepa, Ekoekspert sp.zo.o., Warsaw

*Slovak Republic*

Mr. Jiri Chlumsky, Slovak Cleaner Production Centre, Bratislava  
Dr. Viera Fecková, Slovak Cleaner Production Centre, Bratislava

*Lithuania*

Dr. Jurgis Staniskis

**Evaluation**

**OSTRAVA, OCTOBER 4-5, 1999**

13 evaluation forms were filled out by participants

**1. Did you receive all relevant information before arriving at the workshop?**

Yes	No
6/13	7/13

**2. How useful was the information contained in your document pack?**

1	2	3	4	5
0/13	0/13	5/13	6/13	2/13

**3. How useful was the content of the various presentations?**

1	2	3	4	5
0/13	0/13	3/13	6/13	4/13

**4. How well was the information presented?**

1	2	3	4	5
0/13	0/13	1/13	6/13	6/13

**5. How relevant were the topics discussed in groups?**

1	2	3	4	5
0/13	0/13	1/13	6/13	5/13

**6. Were the groups a useful way of discussing the topics?**

1	2	3	4	5
0/13	0/13	3/13	1/13	9/13

**7. What do you think of the overall programme of the seminar?**

1	2	3	4	5
0/13	0/13	1/13	7/13	5/13

**8. How well were the seminar sessions organised?**

1	2	3	4	5
0/13	0/13	1/13	4/13	8/13

**9. What was your opinion of the food and accommodation**

1	2	3	4	5
0/13	0/13	0/13	6/13	7/13

**APPENDIX 1: EXPERT SEMINAR INFORMATION (continued)**

***Kaunas, Lithuania (October 14-15, 1999)***

**Programme**

**SEMINAR PROGRAMME**

*Kaunas, Lithuania, 14-15 October 1999*

**Thursday, 14 October - Theme: Institutions & Public Policy**

Welcome and Opening Remarks	9:00
Ralph Meima, IIIIEE, Sweden Dr. Jurgis Staniskis, Technical University - Kaunas	
General EMAS/ISO 14001 Updates (Richard Starkey, CCEM, UK)	9:30
<i>Coffee Break</i>	<i>10:15</i>
Country Updates - Remarks by Seminar Participants	10:45
<i>Lunch</i>	<i>12:15</i>
Introduction to Working Group Session	13:45
Working Group Session 1	14:00
<i>Coffee Break</i>	<i>15:15</i>
Group Reports & Discussion	15:45
Concluding Remarks for the Day	17:00
<i>Seminar Dinner</i>	<i>Time to be announced</i>

## SEMINAR PROGRAMME (continued)

### Friday, 15 October - Theme: EMS at the Organisation Level

Welcome and Review of Thursday's Discussions	9:00
Summary and Discussion of Existing EMS Research & Toolkits (Hélène Poimboeuf, APDD, France)	9:30
<i>Coffee Break</i>	<i>10:30</i>
Presentation and Discussion: 1999 "EMAS Eastwards" Survey (Ralph Meima)	11:00
<i>Lunch</i>	<i>12:00</i>
Introduction to Working Group Session 2	13:30
Working Group Session	13:45
<i>Coffee Break</i>	<i>14:30</i>
Group Reports & Discussion	15:00
Closing Remarks	16:00
End of Programme	16:15

**Participant List (excluding project staff)**

*Czech Republic*

Dr. Alena Labodová, Technical University, Ostrava

*Estonia*

Mr. Toomas Pallo, Stockholm Environmental Institute, Tallinn

Mr. Mihkel Vaarik, Ministry of Environment, Tallinn

*Latvia*

Ms. Evija Brante, ELLE, Riga

Ms. Aiga Kala, ELLE, Riga

*Lithuania*

Mr. Izidorius Brasas, Baltijos Automobiliu Technika, Klaipeda

Ms. Danute Janulioniene, Lithuanian National Accreditation Bureau

Mr. Valeras Kildisas, APINI, Kaunas University of Technology

Mr. Darius Pamakstys, APINI, Kaunas University of Technology

Mr. Vytautas Pivoras, UAB Uolektis Consulting

Mr. Audrius Sileika, APINI, Kaunas University of Technology

Dr. Jurgis Staniskis, APINI, Kaunas University of Technology

Dr. Alma Zemaitiene

*Poland*

Mr. Robert Pochyluk, Centre for Environmental Studies, Technical University,  
Gdansk

*Russia*

Mr. Arne Grove

## Evaluation

**KAUNAS, OCTOBER 14-15, 1999**

14 evaluation forms were filled out by participants

**1. Did you receive all relevant information before arriving at the workshop?**

Yes	Blank	No
6/14	1/14	7/14

**2. How useful was the information contained in your document pack?**

1	2	3	4	5
0/14	0/14	1/14	11/14	2/14

**3. How relevant was the content of the various presentations?**

1	2	3	4	5
0/14	0/14	3/14	7/14	5/14

**4. How well was the information presented?**

1	2	3	4	5
1/14	0/14	3/14	5/14	5/14

**5. How relevant were the topics discussed in the groups?**

1	2	3	4	5
0/14	0/14	0/14	8/14	6/14

**6. Were the groups a useful way of organising discussion?**

1	2	3	4	5
0/14	0/14	0/14	6/14	8/14

**7. What did you think of the overall programme structure?**

1	2	3	4	5
0/14	2/14	1/14	9/14	2/14

**8. How well were the seminar sessions organised?**

1	2	3	4	5
0/14	0/14	2/14	8/14	4/14

**9. Overall, how useful did you find the seminar?**

1	2	3	4	5
0/14	1/14	1/14	7/14	5/14

**10. What was your opinion of the food and accommodation?**

1	2	3	4	5
0/14	2/14	4/14	4/14	4/14

**APPENDIX 1: EXPERT SEMINAR INFORMATION (continued)**

***Moscow, Russia (April 3-4, 2000)***

**Programme**

**SEMINAR PROGRAMME**

*Moscow, Russia, April 3-4, 2000*

**Monday, April 3, 2000**

Welcome & Introduction	9:00
Marina Khotulyeva, Ecoline, Russia	
Ralph Meima, IIIIEE, Sweden	
Arne Grove, WWF, Denmark & Russia	
Keynote Speech	9:20
Irina Limonova, State Committee for Environment, Russia	
General Instructions, Expression of preferences for agenda	9:40
<i>Break</i>	<i>10:40</i>
Country Updates (A. Grove, Chair)	11:00
Belarus	
Russia	
Ukraine	
<i>Lunch</i>	<i>12:40</i>
EMAS Update: EMAS 2	14:00
Richard Starkey, CCEM, UK	
Group Exercise 1 - Public Policy & Institutions (H. Poimboeuf, Chair)	15:00
<i>Break</i>	<i>16:15</i>
Group Presentations & Discussion (A. Grove, Chair)	16:25
Day's Conclusion. Practical details for later.	17:30
<i>Seminar Dinner</i>	<i>Time to be announced</i>

## SEMINAR PROGRAMME (continued)

### Tuesday, April 4, 2000

Introduction & Plan for the Day Ralph Meima, IIIIEE, Sweden	9:00
Company case presentations, including panel discussion (A. Grove, Chair)	9:05
<i>Break</i>	<i>10:35</i>
Project Findings & Activities To-Date Ralph Meima	10:50
Group Exercise 2 - Development and implementation of efficient and effective management systems (H. Poimboeuf, Chair)	11:50
<i>Lunch</i>	<i>12:50</i>
Group Presentations & Discussion (A. Grove, Chair)	14:00
Closing Remarks	15:15

**Participant List (excluding project staff)**

*Belarus*

Mrs. Natalya I. Atapina, Centre for Promotion of Investments, Minsk  
Dr. Irina B. Bistrova, Belarussian National Institute for Certification and Standardization, Minsk  
Dr. Aleg M. Cherp, NGO Ecoline, Minsk  
Dr. Sergei V. Dorozhko, Department of Ecology, Belarussian Academy, Minsk  
Mr. Mikhail N. Fenko, Minsk Bearing Plant, Minsk  
Mrs. Olga P. Gerkis, Atlant Ltd., Minsk  
Dr. Alexander Ogryzov, Belarussian UNEP Committee, Minsk  
Mr. Nikolai N. Tsygankov, Ministry of Natural Resources & Environmental Protection, Minsk

*Poland*

Ms. Malgorzata Macniak, Centre for Environmental Studies, Technical University, Gdansk

*Russia*

Mr. Alexander M. Adam, Tomsk Regional Committee for Environmental Protection, Tomsk  
Mr. Viktor V. Anikiev, National Committee on Environmental Safety, Moscow  
Mrs. Anna V. Borodai, BurGaz Company (Gazprom Ltd.), Moscow  
Mrs. Lina V. Chernikova, Quality Department, Tomsk Beer Ltd., Tomsk  
Mrs. Yekaterina Chistyakova, Russian Centre for Environmental Policy, Moscow  
Mr. Yuri N. Chuvashov, RusNord Institute, St. Petersburg  
Mr. Sergei Daiman, NGO Ecoline, Moscow  
Mr. Mikhail Y. Durkin, Kaliningrad Port Authority, Kaliningrad  
Dr. Maxim A. Epifantsev, Russian Engineering Academy, Samara  
Ms. Zinaida Fadeeva, IIIIEE, Lund University, Sweden & Russia  
Dr. Tatiana Guseva, Mendeleev University of Chemical Technology, Moscow  
Dr. Alexander Y. Khachaturov, Mendeleev University of Chemical Technology, Moscow  
Dr. Marina Khotulyeva, NGO Ecoline, Moscow  
Mr. Alexander N. Konovalov, Siberian Aluminium Group Ltd., Moscow  
Dr. Natalya N. Krasnogorskaya, Ufa State Technical Aviation University, Ufa  
Mr. Alexei N. Krasnov, NGO DRONT, Nizhny Novgorod  
Mr. Miron B. Kupchik, NGO Environmental Agency, Novokuznetsk  
Mrs. Irina V. Limonova, State Committee for Environmental Protection, Moscow  
Dr. Sergei V. Makarov, Mendeleev University of Chemical Technology, Moscow  
Dr. Alexander V. Malkov, Mendeleev University of Chemical Technology, Moscow  
Mr. Mark Mamrikin, NGO Ecoline, Moscow  
Ms. Lyubov Maslova, NGO Ecoline, Moscow  
Ms. Yana Molchanova, NGO Ecoline, Moscow  
Dr. Gennady A. Motkin, Institute of Market Problems, Russian Academy of Sciences, Moscow  
Dr. Yevgeny V. Pashkov, Russian Federal Institute of Standardisation, Moscow  
Dr. Renat A. Perelet, Institute for Systems Analysis, Russian Academy of Sciences  
Dr. Galina G. Pisarova, Oskol Electrometallurgy Plant, Stary Oskol  
Mr. Anatoly S. Savelyov, Samara Metallurgical Company Ltd., (Siberian Aluminium Group), Samara  
Dr. Ivan N. Senchenya, Centre for Preparation & Implementation of International

Projects on Technical Assistance, Moscow

Mr. Nikolai I. Shaplov, Lukoil Ltd., Moscow  
Mrs. Lidia I. Shokina, Chamber of Commerce & Industry, Moscow  
Mrs. Marina N. Soldatenko, Sibkabel Ltd., Tomsk  
Mrs. Larisa V. Strukova, NGO CETI, Yekatarinburg  
Mr. Vladimir N. Tsevelev, Gus-Khrutalny Regional Committee for Environmental Protection, Vladimir Region  
Ms. Tatiana Vinichenko, NGO Ecoline, Moscow  
Mr. Vadim Vinichenko, NGO Ecoline, Moscow  
Ms. Yelena Zaika, NGO Ecoline, Moscow  
Ms. Nadezhda S. Zhukova, Tomsk Instruments Ltd., Tomsk

*Ukraine*

Mr. Sergei M. Lizenko, The Stirol Group Ltd., Donetsk  
Dr. Inessa D. Loeva, Environmental Law Department, Institute of Hydro-Meteorology, Odessa  
Dr. Vladimir R. Lozansky, Environmental Problem Institute, Kharkov  
Mr. Vyacheslav G. Magmedov, ECOTE Ltd., Kiev  
Dr. Irina V. Patoka, Department of Sustainable Development & Environmental Safety, Ukrainian Academy, Kiev  
Mrs. Oksana N. Saksonova, Ministry of Environmental Protection, Kiev  
Mr. Volodimir Tikhii, USEPA/UNDP EIA Demonstration Project, Kiev  
Mrs. Galina N. Vasyukova, Ukrainian Centre for Technical Ecology, Donetsk  
Mr. Viktor Yurochko, Druzhba Oil Supply Pipeline Ltd., Lviv

**Evaluation**

**MOSCOW, 3-4 APRIL 2000**

15 answers

**1. Overall programme of the seminar (its structure)**

1	2	3	4	5
			6/15	9/15

**2. Document pack**

1	2	3	4	5
			6/15	9/15

**3. Content of presentation (especially presentation of partners from western Europe)**

1	2	3	4	5
		1/15	5/15	9/15

**4. Choice of topics discussed in group**

1	2	3	4	5
		1/14	7/14	6/14

**5. How useful were group discussions ?**

1	2	3	4	5
	1/15		4/15	10/15

**6. Overall seminar organisation**

1	2	3	4	5
			3/15	12/15

**7. How useful, informative was the overall seminar ?**

1	2	3	4	5
			6/15	9/15

**8. Food and accommodation**

1	2	3	4	5
			2/14	13/15

**APPENDIX 1: EXPERT SEMINAR INFORMATION (continued)**

**Varna, Bulgaria (May 4-5, 2000)**

**Programme**

**EMAS EASTWARDS SEMINAR, VARNA, May 4-5, 2000**

PROGRAMME & OVERALL SCHEDULE

<b>Thursday, May 4</b>	<b>DAY 1:</b> <i>Public Policy &amp; Institutional Infrastructure for EMS</i> <b>- Problems &amp; Possibilities</b>	
11:00	Welcome & Introduction Overview of project Goals of this seminar Practical items (Reimbursements, Evaluations, etc.)	M. Konstantinoff I. Grozeva R. Meima
11:15	Around-the-room introductions & expression of expectations, interests for the seminar	All
11:30	Keynote Welcoming Speech	Drumi Drumev, Chairman, Bulgarian SEEA
11:45	Country Overviews (15 minutes max. with questions): - Bulgaria - Romania - Ukraine	Participants
12:30	LUNCH	
13:30	Country Overviews (continued) - Croatia - Hungary - Poland - Slovenia	Participants
14:30	BREAK	
14:45	Review of Institutional EMS Issues: Accreditation Schemes, ISO 14001 Structures, and the EMAS Regulation	R. Starkey
15:15	EMAS & EMAS 2: New Developments, Trends, & Remaining Challenges	J. Faragher
16:15	Introduction to First Group-Work Session	H. Poimboeuf
16:25	Groups begin work (coffee service is available)	All
17:30	Group Presentations/Discussion (4 x 15 min. each)	All
18:30	Practical announcements (Travel expense reports must be handed in) END OF DAY 1	R. Meima

*EMAS Eastwards – Final Project Report*

<b>Friday, May 5</b>	<b>DAY 2:</b> <i>EMS Implementation in Organisations – More Problems &amp; Possibilities</i>	
9:00	Introduction to the day's program	R. Meima
9:05	Company presentations (as available)	Selected participants
10:30	BREAK	
11:00	“EMAS Eastwards”: project findings & activities so far	R. Meima
11:45	Administration: Payment of Travel Reimbursements	R. Starkey H. Poimboeuf
12:15	LUNCH	
13:15	Introduction to Second Group-Work Session	H. Poimboeuf
13:25	Groups begin work (coffee service is available)	All
14:30	Group Presentations/Discussion (3 x 15 min. each)	All
15:30	General Discussion: What more can be done in CEE countries to promote and facilitate the use of voluntary EMS?	All
16:15	Final practical announcements Conclusion	M. Konstantinoff I. Grozeva R. Meima
16:30	END OF SEMINAR	

**Participant List (excluding project staff)**

*Bulgaria*

Mr. Dimiter Brankov, Clean Industry Center, Bulgarian Industrial Association, Sofia  
Mr. Bujan Dimitroff, State Energy Efficiency Agency, Sofia  
Mr. Drumir Drumev, State Energy Efficiency Agency, Sofia  
Ms. Mihaela Gabrashkova, State Energy Efficiency Agency, Sofia  
Ms. Ivona Grozeva, Bulgarian National Electric Company (NEK), Sofia  
Mr. Asen Iliev, TÜV-Bulgaria, Sofia  
Mr. Ivan Iliev, Bulgarian National Electric Company (NEK), TPP-Varna  
Dr. Metodi Konstantinoff, State Energy Efficiency Agency, Sofia  
Mr. Atanas Maikov, Toplofikazia District Heating Plant, Varna  
Mr. Ivan Mastikov, Bulgarian Ministry of Environment & Water  
Dr. Katinka Mihova, Dept. of Natural Resource Management, Univ. of Forestry, Sofia  
Mr. Branimir Natov, Clean Industry Center, Bulgarian Industrial Association, Sofia  
Mr. Pavlin Peev, Kozloduy Nuclear Power Plant  
Mr. Peter Petroff, Bulgarian National Electric Company (NEK), Sofia  
Ms. Anelia Popova, Kozloduy Nuclear Power Plant  
Ms. Katerina Staneva, SARA Programme PMU, Council of Ministers, Sofia  
Ms. Liliana Stoeva, TÜV-Bulgaria, Sofia  
Ms. Milena Tsoleva, State Energy Efficiency Agency, Sofia  
Dr. Tihomir Vassilev, State Energy Efficiency Agency, Sofia

*Croatia*

Mr. Damir Brlek, Department of Environmental Protection, LURA d.d.  
Mr. Zarko Jakovljevic, EKONERG, Zagreb  
Ms. Andrea Ropic, APO Ltd. – Hazardous Waste Management Agency, Zagreb

*Hungary*

Dr. Klara S. Toth, JATE College of Food Industry, Szeged  
Ms. Agnes Krecz, Hungarian Association for Environmentally Aware Management  
(KÖVET-INEM), Budapest

*Romania*

Dr. Doina A. Botzan, Research & Engineering Inst. for Environment (ICIM), Bucharest  
Ms. Cristina Musi, Research & Engineering Inst. for Environment (ICIM), Bucharest

*UK*

Mr. Jon Faragher, John Faragher Associates, Guildford, Surrey

*Ukraine*

Dr. Zinoviy S. Broide, ECORESOURCE Centre, Chernovtsy

**Evaluation**

**VARNA, BULGARIA, MAY 4-5, 2000**

12 answers

**1. How useful was the information contained in your document pack?**

1	2	3	4	5
			2/12	10/12

**2. How relevant was the content of the various presentations?**

1	2	3	4	5
	2/12	2/12	8/12	

**3. How well was the information presented during the seminar?**

1	2	3	4	5
			6/12	6/12

**4. How relevant were the topics discussed in the group sessions?**

1	2	3	4	5
	1/12	3/12	3/12	5/12

**5. Were the group sessions a useful way of organizing discussion?**

1	2	3	4	5
			3/12	9/12

**6. What do you think of the overall programme structure?**

1	2	3	4	5
		1/12	7/12	4/12

**7. Overall, how useful did you find the seminar?**

1	2	3	4	5
		2/12	4/12	6/12

**8. What was your opinion of the food and accommodation?**

1	2	3	4	5
		1/12	2/12	9/12

**APPENDIX 1: EXPERT SEMINAR INFORMATION (continued)**

**Gdansk, Poland (May 18-19, 2000)**

**Programme**

**EMAS EASTWARDS SEMINAR, GDANSK, May 18-19, 2000**

**PROGRAMME & OVERALL SCHEDULE**

<b>Thursday, May 18</b>	<b>DAY 1:</b>	
11:00	Welcome & Introduction Overview of the “EMAS Eastwards” project Goals of this seminar Practical items (Reimbursements, Evaluations, etc.)	R. Pochyluk R. Meima
11:10	Around-the-room introductions; expression of expectations and interests for the seminar	All
11:40	Presentation: <i>Accreditation &amp; Certification Systems: ISO 14001 &amp; EMAS</i>	R. Starkey
12:10	Country Overviews (10 min. each including discussion): - Belarus - Estonia - Latvia - Russia (Kaliningrad Region) - Slovakia	N. Golovko A. Randmer S. Ruza D. Zaporozhsky M. Chrenko
13:00	LUNCH	
14:00	Country Overviews (continued) - Czech Republic (30 min.) - Poland (30 min.)	A. Labodova T. Podgajniak
15:00	BREAK	
15.15	Presentation: <i>EMAS &amp; EMAS 2: New Developments, Trends, &amp; Remaining Challenges</i>	J. Faragher
16:15	Panel Discussion: <i>Opportunities for and Barriers Facing the Use of EMAS In CEE Countries</i>	J. Faragher T. Podgajniak R. Starkey
17:00	Concluding remarks for the first day	R. Pochyluk R. Meima
17:15	Practical announcements (All travel expense reports must be handed in.)	R. Meima
19:30	DINNER	
<b>Friday, May 19</b>	<b>DAY 2</b>	

*EMAS Eastwards – Final Project Report*

9:00	Introduction to the day's program	R. Meima
9:05	EMS in Practice: Presentations <i>Cleaner Production Programme in Poland EMAS Implementation at AMICA Wronki SA</i>	M. Wasilewski B. Krasniewski
10:00	<i>"EMAS Eastwards": The Project So Far</i>	R. Meima
10:30	BREAK	
11:00	Presentation: <i>Setting Up Accreditation Systems and Competent Bodies: Problems &amp; Pitfalls; A Closer Look at EMAS in CEE</i>	J. Faragher
12:00	Introduction to Group-Work Session	S.Szymkowiak
12:15	Groups begin work	All
13:00	LUNCH	
14:00	Administration: Payment of Travel Reimbursements	Project Staff
14:15	Group Presentations/Discussion (4 x 15 min. each)	
15:15	General Discussion: <i>What can and should be done in Poland and neighboring CEE countries to implement EMAS?</i>	
15:45	Final practical announcements Conclusion	R. Pochyluk R. Meima
16:00	END OF SEMINAR	

**Participant List (excluding project staff)**

*Belarus*

Ms. Natalya Golovko, Ecology Department, Belarussian State Polytechnical Academy, Minsk

*Czech Republic*

Dr. Alena Labodova, Institute of Environmental Engineering, Technical University, Ostrava

*Denmark*

Ms. Agnieszka Rendemann, Environmental Programmes, VKI, Hørsholm

*Estonia*

Dr. Anne Randmer, Pollution Prevention Centre, Centre for Development Programs, Tallinn

*Latvia*

Ms. Evija Brante, ELLE, Riga

Mr. Girts Karss, Latvian Pollution Prevention Centre, Riga

Ms. Sandra Ruza, Ministry of Environmental Protection & Regional Development, Riga

*Poland*

Mr. Lech Buchelt, Department of Policy, Ministry of Environment, Warsaw

Mr. Slawomir Krakowiak, Zespol Elektrocieplowni Wybrzeze

Ms. Malgorzata Macniak, Centre for Environmental Studies, Technical University, Gdansk

Mr. Andrzej Ociepa, Eko-Ekspert, Warsaw

Mr. Bogdan Oldakowski, The Port of Gdansk

Ms. Danuta Orleanska, Polish Centre for Testing & Certification, Warsaw

Mr. Robert Pochyluk, Centre for Environmental Studies, Technical University, Gdansk

Mr. Tomasz Podgajniak, National Foundation for Environmental Protection & Polish Forum for ISO 14001, Warsaw

Mr. Jaroslaw Szymanski, Eko-Konsult, Warsaw

Ms. Anna Wajnbergier, Department of Policy, Ministry of Environment, Warsaw

Mr. Marek Wasiliewski, Silesian Polytechnic University & Polish National Cleaner Centre, Katowice Production

*Russia*

Dr. Sergey V. Kondratenko, Department of Ichthyology & Ecology, Kaliningrad State University, Kaliningrad Technical

Dr. Dimitry Zaporozhsky, Kaliningrad State University, Kaliningrad

*Slovak Republic*

Mr. Milan Chrenko, REC, Bratislava

*UK*

Mr. Jon Faragher, John Faragher Associates, Guildford, Surrey

**Evaluation**

*Not currently available.*

## APPENDIX 2: The International System of Conformity Assessment for EMS

This appendix describes the systems of conformity assessment for both ISO 14001 and EMAS.

### ISO 14001

The system of ISO 14001 conformity assessment in Europe is shown in Figure 1.

ISO defines conformity assessment as

*“any activity concerned with determining directly or indirectly that relevant requirements are fulfilled” (EN 45020 Standardization and related activities – General vocabulary)*

Conformity assessment should result in assurance of conformity which is defined as

*“any activity resulting in a statement giving confidence that a product, process of service fulfils specified requirements” (EN 45020)*

ISO 14001 mentions two means by which a firm can demonstrate that its EMS conforms to the requirements of ISO 1400: self-declaration and certification.

*“[T]his specification...describes the requirements for certification...and/or self-declaration.”*

Self-declaration simply means that on the basis of assessing its own conformity, an organisation declares that it meets the requirements of ISO 14001. Certification is defined as a

*“procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements”.*

As the definition makes clear, assurance of conformity is about *providing confidence* that an EMS conforms to the requirements of the ISO 14001. Most people would acknowledge that self-declaration does not provide the degree of confidence that most stakeholders require. However, there is a system in place for ensuring that certification is able to provide assurance of conformity, and it is described below.

Obviously stakeholders can have confidence in an ISO 14001 certification, only if the certification body carrying out the certification is competent. To be deemed competent a certification body must conform to the requirements of *ISO/IEC Guide 66 - General requirements for bodies operating assessment and certification/registration of environmental management systems (EMS)*. As the scope of the standard states:

*“The Guide specifies general requirements for a third-party body operating EMS certification/registration to meet if it is to be recognised as competent and reliable in the operation of EMS certification/registration.”*

The European cooperation for Accreditation (EA; described below) has issued guidance on Guide 66 entitled *EA-7/02 - EA Guidelines for the Accreditation of Certification Bodies for Environmental Management Systems*. [This is the European version of *IAF guidance of the application of ISO/IEC Guide 66* and is identical in content.]

It is the role of the accreditation system to determine whether or not a certification body meets the requirements of Guide 66 and is therefore competent. Accreditation is defined as a

*“procedure by which an authoritative body gives formal recognition that a body or person is competent to carry out specific tasks”.*

Stakeholders can naturally only have confidence in the accreditation process if the accreditation body carrying out the accreditation is competent. To be deemed competent an accreditation body must conform to the requirements of *EN 45010 - General requirements for assessment and accreditation of certification systems [ISO/IEC Guide 61]*. As the scope of the standard states

*“This European Standard specifies general requirements for a body to follow if it is to be recognised at the national or international level as competent and reliable in assessing and subsequently accrediting certification bodies...The primary objective of this European Standard is describe accreditation as providing, by means of assessment and subsequent surveillance, an assurance that the market can rely on certificates issued by the accredited bodies.”*

The European cooperation for Accreditation has issued guidance on Guide 66, entitled *EA-3/08 - EA Guidelines on the application of EN 45010* [The European version of *IAF guidance on the application of ISO /IEC Guide 61*, which is identical in content.]

The process of determining whether or not an accreditation body meets the requirements of EN 45010 and EA 3/08 and is therefore competent takes place within the European cooperation for Accreditation (EA). (EA was founded in 1997 through a merger of European co-operation on Accreditation of Laboratories (EAL) and European Accreditation of Certification (EAC). For more information on EA, see its website: <http://www.european-accreditation.org/>).

The mechanism for assessing the conformity of accreditation bodies is known as a *Multilateral Agreement*. Under a multilateral agreement, each accreditation body that is a signatory agrees:

- to accept the accreditation schemes operated by the other signatories as equivalent to its own scheme
- to recognise the certificates issued by the organisations accredited by the other signatories as equivalent to those issued by organisations it has accredited

EA Multilateral Agreements exist for the following :

- Calibration laboratories
- Testing laboratories
- Certification bodies, products
- Certification bodies, quality systems
- Certification bodies, personnel
- Certification bodies, environmental management systems

No countries have yet signed the EMS Multilateral Agreement.

A Multilateral Agreement provides a framework for a process of peer evaluation. For an accreditation body to become a signatory to the EMS Multilateral Agreement, accreditation bodies who are signatories of the Agreement must establish with confidence that

1. the accreditation body conducts its assessments and accreditations in accordance with:

- EN 45010
  - EA-3/08 (which is identical to ISO/IEC Guide 61)
2. the organizations accredited by the accreditation body meet the requirements for accreditation set out in:
- ISO/IEC Guide 66
  - EA-7/02

In addition, an accreditation body must:

- have enough experience in the assessment of organisations
- have granted a reasonable number of accreditations
- have carried out a reasonable number of surveillance visits to accredited organisations

For further details on Multilateral Agreements see *EA-2/02 EA Policy and Procedures for the Multilateral Agreement*.

The organisation with the role of ensuring ISO 14001 conformity assessment at the international level is the International Accreditation Forum Inc. (IAF). The IAF is the world association of Conformity Assessment Accreditation Bodies and other bodies interested in conformity assessment. It has three categories of membership:

1. *Accreditation Body Members*: national accreditation bodies
2. *Regional Group Members*: Regional groupings of accreditation bodies such as EA
3. *Associate Members*: Other organisations involved in the use of implementation of certification systems

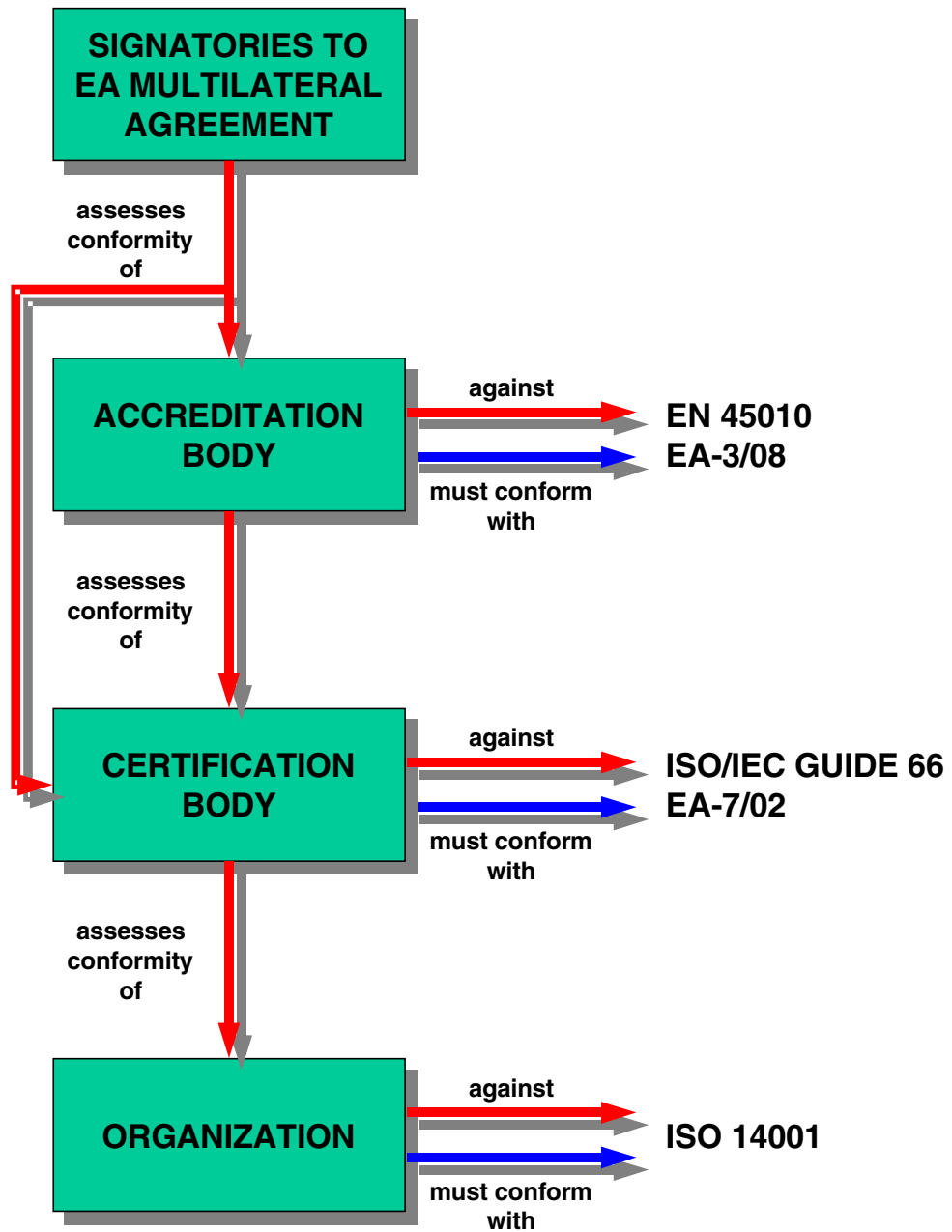
The EA Multilateral Agreements operate at a European level to ensure the competence of accreditation bodies that are signatories, thereby promoting confidence amongst the signatories that accreditation schemes operated by the other signatories are equivalent to their own schemes. In the same way the IAF Multilateral Mutual Recognition Agreements (MLAs) operate at an international level to ensure the competence of accreditation bodies that are signatories, thereby promoting confidence amongst the signatories that accreditation schemes operated by them are equivalent to its own scheme.

There is currently an MLA on quality systems in place with 27 members. As of October 2000, there is no MLA on EMS. The procedures for such an MLA are in place but an MLA cannot come into force until four members have been evaluated and shown to meet all the necessary requirements. The IAF has been expecting some members to apply to join by late 2000, but this has not yet happened. Figure 2 shows the international system of conformity assessment for ISO 14001. (For further information on the IAF, see its website: <http://www.iaf.nu/>).

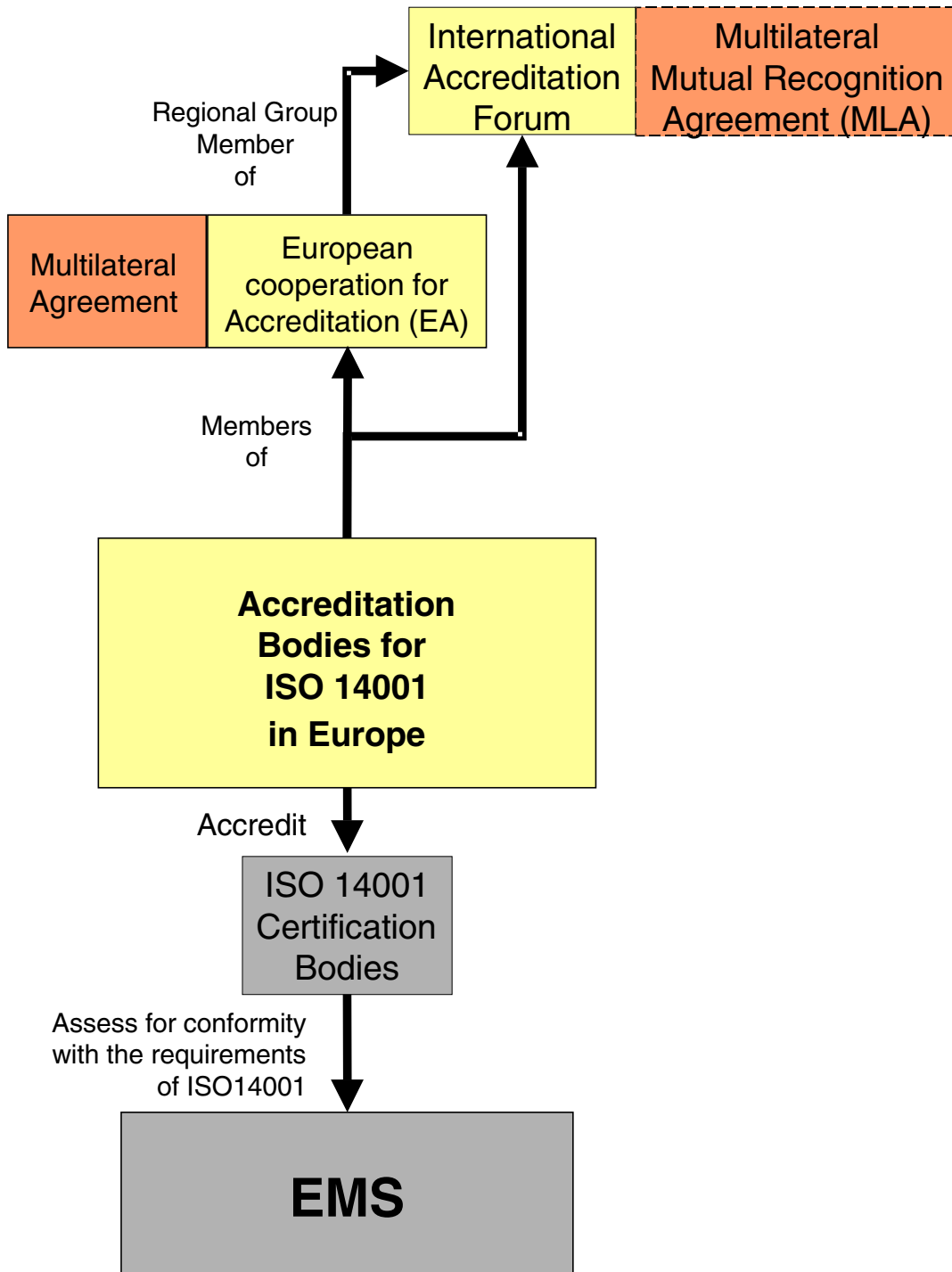
## EMAS

Figure 3 shows the system of conformity assessment for EMAS. It differs from the system of conformity assessment for ISO 14001 in Europe in two main ways. Unlike the ISO 14001 system, with its Multilateral Agreement, there is no system of peer review amongst the EMAS accreditation bodies. And whereas the ISO 14001 system has detailed common guidance for certifiers, there is no detailed common guidance for EMAS verifiers, a state of affairs that has contributed to disputes about the style of verification in various EU member states. In the revision of EMAS, these issues are addressed (see Appendix 4).

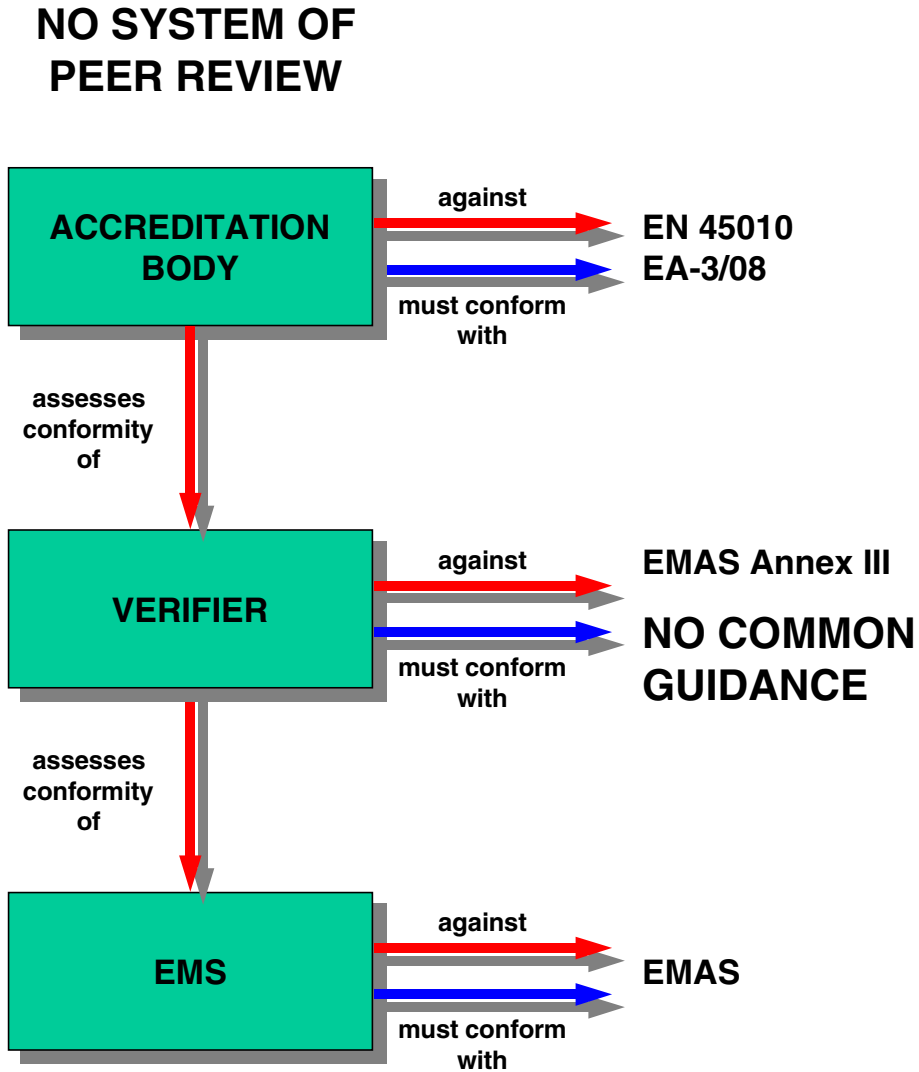
Figure 1 - ISO 14001 Conformity Assessment in Europe



**Figure 2 - International Accreditation System for ISO 14001**



**Figure 3 - EMAS Conformity Assessment**



### **APPENDIX 3: Notes on EMS Auditor Certification/Registration**

There are a number of organisations that certify/register auditors. Some examples are given below:

**Institute for Environmental Management and Assessment (IEMA)** <http://www.iema.net/index2.htm>

The UK-based Institute for Environmental Management and Assessment (IEMA) – formed in 1999 through the merging of the Institute of Environmental Management, the Environmental Auditor's Registration Association, and Institute of Environmental Assessment – operates a register of environmental auditors and EMS auditors. The register lists over 1,900 auditors from 46 countries which, according to the IEMA makes it “*the premier international register of environmental audit practitioners*”.

The registration scheme is open to both internal and external auditors. Individuals can register onto one or two of five practitioner levels: associate environmental auditor; environmental management system auditor; lead environmental management system auditor; environmental auditor and principal environmental auditor.

**Board of Environmental, Health and Safety Auditor Certifications (BEAC)**

<http://www.rutgers.edu/Accounting/raw/beac/beachome.htm>

The US-based Board of Environmental, Health and Safety Auditor Certifications (BEAC) was formed by the Environmental Auditing Roundtable (EAR) and the Institute of Internal Auditors (IIA) to issue certifications to auditors working in the field of environment and health and safety. It offers: EMS 14000 plus certification; environmental compliance certification and health and safety certification.

**Centre for Environmental Auditor Registration (CEAR)**

The Japan Environmental Management Association for Industry (JEMAI) operates the Centre for Environmental Auditor Registration (CEAR) which maintains a register of EMS auditors.

**International Auditor and Training Certification Association (IATCA)** <http://www.iatca.com/>

The following description taken from IATCA's website:

“The International Auditor and Training Certification Association (IATCA) is a voluntary international organisation, which co-operates with other international organisations involved in conformity assessment and the employment of auditors. Its primary purpose is to establish and operate programmes for uniform international training and certification/registration of auditors, with the objective of achieving single programs for the certification/registration of auditors, recognised world-wide.

“IATCA does not itself certify auditors or approve auditor training courses. Rather it is an association of organisations which certify auditors and/or approve auditor training courses. The functions of IATCA are to develop and publish uniform international criteria for the certification/registration of auditors and for the approval of auditor training courses, and to operate multilateral mutual recognition agreements which operate to demonstrate that the members of IATCA do in fact operate their IATCA programs in accordance with the requirements of the IATCA Criteria. As a result of the IATCA programmes auditors trained and certified in accordance with the IATCA Criteria should have their credentials recognised throughout the world without the need for multiple certifications/registrations.”

#### APPENDIX 4 - DIFFERENCES BETWEEN EMAS AND “EMAS 2”

**NOTE:** On November 22, 2000, the European Parliament and the Council of the European Community (European Commission) reached agreement on a draft joint text for “EMAS 2”, to supersede Council Regulation 1836/93 (EMAS) when the two institutions have confirmed this text. When these confirmations are made, the Regulation will be deemed to have been adopted. This text is not yet published. The comparison we have made in this appendix is based on the preliminary text in circulation during the spring of 2000. However, few if any major changes are expected to have occurred during the interim.

Article 20 of the EMAS regulation states:

*“Not more than five years after the entry into force of this Regulation, the Commission shall review the scheme in the light of the experience gained during its operation and shall, if necessary, propose to the Council the appropriate amendments, particularly concerning the scope of the scheme and the possible introduction of a logo.”*

The EMAS Regulation has been substantially revised and EMAS 2 is expected to pass into law in early 2001 (see above). The differences between EMAS and EMAS 2 (in its present form within the legislative process) are set out below.

- Under EMAS only “companies performing industrial activities” are able to participate. Under EMAS 2 all organisations will be able to participate.
- Under EMAS only sites can be registered. Under EMAS 2 an entire organisation will be able to be registered.
- The EMS requirements of EMAS will be replaced by section/clause 4 of ISO 14001.
- Under EMAS a participating organisation is required to provide “information on environmental performance to the public”. In EMAS 2 this has been expanded to a requirement that an organisation provide “information on environmental performance and an open dialogue with the public and other interested parties.”
- In EMAS 2 the requirements regarding the environmental statement have been substantially changed to allow more flexibility in the manner in which an organisation can report on its environmental activities. Under EMAS the content of what is to be reported to stakeholders is fixed and inflexible. In EMAS 2 the organisation must produce specified and validated information regarding its environmental performance. It is then able to choose which pieces of this information to communicate to which stakeholder groups. EMAS 2 also gives guidance on the use of environmental performance indicators in reporting.
- EMAS 2 introduces an EMAS logo which can be used to accompany validated environmental information and on registered organisations’ letterheads.
- As is pointed out in Appendix 2, the current EMAS system of conformity assessment does not (unlike the ISO 14001 system) include a process of peer review of accreditation bodies or common guidance on accreditation of verifiers. This has contributed to inconsistencies between national accreditation systems. Consistency between national accreditation schemes is necessary to promote mutual recognition of schemes amongst member states and therefore in EMAS 2 a peer review process has been introduced and it is expected that common guidance on accreditation of verifiers will be produced.
- Although not explicitly stated in EMAS, it has always been the intention of the Commission that employees should be involved in EMAS implementation. However in EMAS 2 the involvement of employees is explicitly mentioned.

*“the objective of EMAS shall be to promote continual improvements in the environmental performance of organisations by...the active involvement, including appropriate training, of employees”.*

- Unlike EMAS, EMAS 2 differentiates between direct and indirect aspects. Direct aspects are defined as “activities of an organisation over which its management has control” and indirect aspects are defined as those “over which it may not have full management control”. Guidance is also given on assessing significance. The validated information to be used as the basis for reporting must include “a description of all the significant direct and indirect environmental aspects which result in significant environmental impacts of the organisation and an explanation of the nature of the impacts s related to these aspects”.
- Under EMAS 2 measures have been put in place to ensure consistency in the activities of national competent bodies.

*“Competent bodies from all Member States shall meet, at least once per year in the presence of a representative of the Commission. The objective of these meetings is to ensure the consistency of procedures relating to the registration of organisations under EMAS , including suspension and deletion of registration. A peer review process shall be put in place by the competent bodies for the purpose of developing a common understanding of their practical approach towards registration”.*

- In EMAS 2 Member States are encouraged to explore how EMAS could be used to bring about “regulatory relief” for organisations.

*“Member States should consider how registration under EMAS in accordance with this Regulation may be taken into account in the implementation and enforcement of environmental legislation in order to avoid unnecessary duplication of effort by both organisations and competent enforcement authorities”.*

**TABLE A1: CEE/NIS EMS PROFILES BY COUNTRY**

The following pages contain EMS-related profiles of a majority of CEE countries, with key data in a standardised format. The 14 countries included are:

Belarus  
Bulgaria  
Croatia  
Czech Republic  
Estonia  
Hungary  
Latvia  
Lithuania  
Poland  
Romania  
Russian Federation  
Slovak Republic  
Slovenia  
Ukraine

EMS profiles have not been included for the following 5 countries due to an absence of participants from these countries in the expert seminars.

Albania  
Bosnia-Herzegovina  
Macedonia (FYROM)  
Moldova  
Yugoslavia (includes Serbia, Montenegro)

**VOLUNTARY, STANDARDISED ENVIRONMENTAL MANAGEMENT SYSTEMS:  
CEE COUNTRY PROFILE**

Please note: the information contained in the table below was provided by expert seminar participants at various times, but we are very grateful for any additional information or corrections that readers provide. Please address any comments/corrections to Ralph Meima (email: ralph@meima.com).

<b>Country</b>	<b>Belarus</b>
National Accreditation Body	The Ministry of Environment acts as an accreditation body, but not in conformity with international accreditation norms.
Is the country a member of the IAF or EA?	No
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	Bulgarian National Standards Institute  (An NIS Council for Standardisation also exists to co-ordinate standards activity in the former USSR.)
Status of National TC 207 Committee	Unknown
“Shadow” EMAS Competent Body	None exists.
Is there an official national translated and published version of ISO 14001?	No
Is there an official translated version of the EMAS Regulation?	No
Number of ISO 14001 Certifications	0
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	0
Number of Certified Auditors who Conform to ISO 14012?	0
Number of Accredited EMAS Verifiers?	0
Additional Notes	In Belarus was recently (1999) implemented a mandatory, state-run system of “certificates of environmental responsibility”, with conformity monitored by state inspectors. However, this system does not comply with ISO, IAF, or EA standards and guidelines.

**VOLUNTARY, STANDARDISED ENVIRONMENTAL MANAGEMENT SYSTEMS:  
CEE COUNTRY PROFILE**

Please note: the information contained in the table below was provided by expert seminar participants at various times, but we are very grateful for any additional information or corrections that readers provide. Please address any comments/corrections to Ralph Meima (email: ralph@meima.com).

<b>Country</b>	<b>Bulgaria</b>
National Accreditation Body	The Bulgarian Accreditation Agency was established in January 2000, and is a state agency under the Ministry of Economics. It is not reported to be fully independent in its policies. The text of a national accreditation act is under development.  There is reportedly a second, competing accreditation body in Bulgaria
Is the country a member of the IAF or EA?	No.
Is the country a signatory to the EA Multilateral Agreement on EMS?	No.
National Standards Body	
Status of National TC 207 Committee	
“Shadow” EMAS Competent Body	This is reportedly under discussion, and may be created through passage of a National Environmental Protection Act at the end of 2000 (a key purpose of which is to nationally implement the IPPC Directive and a national industrial permitting scheme).
Is there an official national translated and published version of ISO 14001?	Yes, formally adopted as a national standard in 1998.
Is there an official translated version of the EMAS Regulation?	No.
Number of ISO 14001 Certifications	0
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	0. The Bulgarian Accreditation Agency has drafted a procedure for evaluating the applications of prospective certification bodies (as of May 2000), but it is not yet in effect.
Number of Certified Auditors who Conform to ISO 14012?	
Number of Accredited EMAS Verifiers?	
Additional Notes	

**VOLUNTARY, STANDARDISED ENVIRONMENTAL MANAGEMENT SYSTEMS:  
CEE COUNTRY PROFILE**

Please note: the information contained in the table below was provided by expert seminar participants at various times, but we are very grateful for any additional information or corrections that readers provide. Please address any comments/corrections to Ralph Meima (email: ralph@meima.com).

<b>Country</b>	<b>Croatia</b>
National Accreditation Body	This role is currently played by the State Office for Standardisation and Metrology (DZNM), which approves the activity of international certification bodies in Croatia (e.g., SGS, BVQI, TÜV, etc.) through their local subsidiaries, and has established National Accreditation Service (NSO) and National Accreditation Council (NVO). For additional details, please refer to <a href="http://www.dznm.hr">www.dznm.hr</a> .
Is the country a member of the IAF or EA?	Associate member of EA (through DZNM-NSO)
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	State Office for Standardisation and Metrology (DZNM)
Status of National TC 207 Committee	Has observer status on numerous TC 207 subcommittees and is actively working to implement national standards for entire ISO 14000 series.
“Shadow” EMAS Competent Body	None exists.
Is there an official national translated and published version of ISO 14001?	Yes, issued in 1998 as national standard HRN EN ISO 14001, along with HRN EN ISO 14010, 14011, and 14012.
Is there an official translated version of the EMAS Regulation?	No
Number of ISO 14001 Certifications	6 ( <i>Sep 1, 2000; source: DZNM's bulletin and web site</i> )
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	0
Number of Certified Auditors who Conform to ISO 14012?	Unknown (no official register available)
Number of Accredited EMAS Verifiers?	0
Additional Notes	For additional details, please refer to <a href="http://www.dznm.hr">www.dznm.hr</a>

Special thanks to Zarko Jakovljevic, EKONERG, for assistance in completing and verifying the information above.

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<b>Country</b>	<b>Czech Republic</b>
National Accreditation Body	Czech Accreditation Institute
Is the country a member of the IAF or EA?	Yes (both)
Is the country a signatory to the EA Multilateral Agreement on EMS?	No (is in negotiation following an EA audit on EMS accreditation conducted in May 2000)
National Standards Body	Czech Normalization Institute
Status of National TC 207 Committee	TNK 6 (the Czech Technical Normalization Committee) is connected to the Czech Normalization Institute, has observer status on numerous TC 207 subcommittees, and is actively working to implement national standards for the entire ISO 14000 series.
“Shadow” EMAS Competent Body	Czech EMAS Council (competent body, register) and EMAS Agency (informational body) were created by the Ministry of Environment in 1998, as part of the National EMAS Programme. (See <a href="http://www.ceu.cz">www.ceu.cz</a> )
Is there an official national translated and published version of ISO 14001?	Yes: ISO 14001:1997 (CSNI)
Is there an official translated version of the EMAS Regulation?	Yes: Ministry of Environment, 1998 (first unofficial version created by Czech Environmental Management Centre, Prague, 1995)
Number of ISO 14001 Certifications	100 <i>(end of November 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	7 (as of November 2000) registered by the Czech EMAS Agency (see <a href="http://www.ceu.cz">www.ceu.cz</a> )
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	8 as of July 2000
Number of Certified Auditors who Conform to ISO 14012?	There is no official register, but accredited certification bodies do individually authorise auditors as competent.
Number of Accredited EMAS Verifiers?	0 (A procedure has been prepared for registration of foreign and domestic accredited verifiers operating in the Czech Republic)
Additional Notes	

Special thanks to Dr. Alena Labodová (TU Ostrava) and Mr. Vladimír Dobes (Czech Cleaner Production Center) for their assistance in completing and verifying the information above.

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<b>Country</b>	<b>Estonia</b>
National Accreditation Body	Estonian Accreditation Centre , EAK
Is the country a member of the IAF or EA?	Yes (both)
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	Estonian Committee for Normalization
Status of National TC 207 Committee	Active national committee
“Shadow” EMAS Competent Body	None exists.
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	No
Number of ISO 14001 Certifications	4 <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	None
Number of Certified Auditors who Conform to ISO 14012?	Not known
Number of Accredited EMAS Verifiers?	0
Additional Notes	

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<b>Country</b>	<b>Hungary</b>
National Accreditation Body	Hungarian Accreditation Board (NAT)
Is the country a member of the IAF or EA?	Yes (both)
Is the country a signatory to the EA Multilateral Agreement on EMS?	Yes
National Standards Body	Hungarian Standards
Status of National TC 207 Committee	Has observer status on numerous TC 207 subcommittees and is actively working to implement national standards for entire ISO 14000 series.
“Shadow” EMAS Competent Body	This will reportedly be a unit within the Ministry of Environment until a separate competent body is established.
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	Yes
Number of ISO 14001 Certifications	153 <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	5 (as of May 2000), including units of Opel and Siemens.
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	1
Number of Certified Auditors who Conform to ISO 14012?	?
Number of Accredited EMAS Verifiers?	0
Additional Notes	The Hungarian Association for Environmentally Aware Management (KÖVET–INEM) acts as national registrar of all ISO 14001 and EMAS certifications/registrations. Certification bodies must report new certifications to KÖVET-INEM in accordance with a national agreement; this is mandatory.

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<b>Country</b>	<b>Latvia</b>
National Accreditation Body	Latvian National Accreditation Bureau, LATAK
Is the country a member of the IAF or EA?	Yes (both)
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	Latvian Standards
Status of National TC 207 Committee	
“Shadow” EMAS Competent Body	No
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	No (an unofficial version exists)
Number of ISO 14001 Certifications	5
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	0
Number of Certified Auditors who Conform to ISO 14012?	Unknown (no central register exists)
Number of Accredited EMAS Verifiers?	0
Additional Notes	The process of introduction of EMS is at its very beginning. Currently, companies that export their products or services to Western markets or these that have parent companies in Western countries are most active.

Special thanks to Evija Brante, Estonian, Latvian & Lithuanian Environment (ELLE), for assistance in completing and verifying the information above.

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<b>Country</b>	<b>Lithuania</b>
National Accreditation Body	Lithuania National Accreditation Bureau
Is the country a member of the IAF or EA?	Yes (both)
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	Lithuanian Institute for Standardization
Status of National TC 207 Committee	Active national committee
“Shadow” EMAS Competent Body	No
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	No (an unofficial version exists)
Number of ISO 14001 Certifications	1 <i>(end of July 2000;</i>
Number of Verified Quasi-EMAS Registrations	1 (Baltijos Automobiliu Technika, Klaipeda)
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	2 are in formation (October 1999)
Number of Certified Auditors who Conform to ISO 14012?	19 (October 1999), of which 5 are APINI staff (Technical University - Kaunas). There is no official register, but accredited certification bodies do individually authorise auditors as competent.
Number of Accredited EMAS Verifiers?	0
Additional Notes	

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<b>Country</b>	<b>Poland</b>
National Accreditation Body	Polish Centre for Testing & Certification (see also below under “Native’ Certification Bodies”), also called PCBC
Is the country a member of the IAF or EA?	Yes, of EA
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	Polish Committee for Standardisation
Status of National TC 207 Committee	
“Shadow” EMAS Competent Body	None yet, but a 1999 national environmental act makes provision for its implementation.
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	Yes
Number of ISO 14001 Certifications	55 <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	1 (AMICA, Poznan)
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	1 as of October 1999: The Polish Centre for Testing & Certification (PCBC)
Number of Certified Auditors who Conform to ISO 14012?	There is no official register, but accredited certification bodies do individually authorise auditors as competent.
Number of Accredited EMAS Verifiers?	0
Additional Notes	

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<b>Country</b>	<b>Romania</b>
National Accreditation Body	Romanian Association for Accreditation, RENAR
Is the country a member of the IAF or EA?	Yes, of EA
Is the country a signatory to the EA Multilateral Agreement on EMS?	No.
National Standards Body	
Status of National TC 207 Committee	
“Shadow” EMAS Competent Body	
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	
Number of ISO 14001 Certifications	1 (OLTCHIM S.A.) <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	
Number of Certified Auditors who Conform to ISO 14012?	
Number of Accredited EMAS Verifiers?	
Additional Notes	

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<b>Country</b>	<b>Russia</b>
National Accreditation Body	
Is the country a member of the IAF or EA?	No
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	State Committee for Standardisation (GOSSTANDARD) (An NIS Council for Standardisation also exists to co-ordinate standards activity in the former USSR.)
Status of National TC 207 Committee	
“Shadow” EMAS Competent Body	None exists.
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	No
Number of ISO 14001 Certifications	1 <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	?
Number of Certified Auditors who Conform to ISO 14012?	?
Number of Accredited EMAS Verifiers?	None
Additional Notes	Dozens of Russian enterprises are reportedly exploring ISO 14001, along with ISO 9000 and TQM methods, as a result of co-operation with or investment by Western companies. Interest is high.

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<b>Country</b>	<b>Slovak Republic</b>
National Accreditation Body	Slovak National Accreditation System (SNAS)
Is the country a member of the IAF or EA?	Yes, of EA
Is the country a signatory to the EA Multilateral Agreement on EMS?	Yes
National Standards Body	Slovak Bureau for Technical Standardisation (SÚTN)
Status of National TC 207 Committee	A mirror standardisation committee – TNK 72 – covers environmental management.
“Shadow” EMAS Competent Body	An EMAS scheme is in preparation, and ready for government approval (as of December 2000).
Is there an official national translated and published version of ISO 14001?	Yes, since 1997.
Is there an official translated version of the EMAS Regulation?	At present, only an unofficial version (as of December 2000).
Number of ISO 14001 Certifications	31 <i>(End of November 2000; source: Slovak Agency for Environment)</i>
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	2, plus one in the accreditation process (as of December 2000)
Number of Certified Auditors who Conform to ISO 14012?	Unknown, as there is no official register. A number of Slovaks have taken EARA courses.
Number of Accredited EMAS Verifiers?	None (December 2000)
Additional Notes	

Special thanks to Dr. Viera Feckova, Slovak Cleaner Production Centre, for her assistance in completing and verifying the information above.

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<b>Country</b>	<b>Slovenia</b>
National Accreditation Body	Standards and Metrology Institute of Slovenia, SMIS
Is the country a member of the IAF or EA?	Yes
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	Ministry of Science and Technology, Standards and Metrology Institute
Status of National TC 207 Committee	Established
“Shadow” EMAS Competent Body	Technical Committee for Environmental Management and the Standards & Metrology Institute
Is there an official national translated and published version of ISO 14001?	Yes
Is there an official translated version of the EMAS Regulation?	Yes
Number of ISO 14001 Certifications	23 <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	3 (BVQI, SIQ, TÜV)
Number of Certified Auditors who Conform to ISO 14012?	?
Number of Accredited EMAS Verifiers?	0
Additional Notes	For details please contact the 3 certification bodies. For contact information see <a href="http://www.inetia.com/iso/eng/certif.htm">www.inetia.com/iso/eng/certif.htm</a>

Special thanks to Robert Spendl, OIKOS Ltd., for assistance in completing and verifying the information above.

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<b>Country</b>	<b>Ukraine</b>
National Accreditation Body	None exists that conforms to international norms. The Ministry of Ecology and Nature Resources appears to intend to play this role with respect to EMS.
Is the country a member of the IAF or EA?	No
Is the country a signatory to the EA Multilateral Agreement on EMS?	No
National Standards Body	State Committee for Standardisation (An NIS Council for Standardisation also exists to co-ordinate standards activity in the former USSR.)
Status of National TC 207 Committee	Unknown
“Shadow” EMAS Competent Body	None exists.
Is there an official national translated and published version of ISO 14001?	Yes, formally adopted by the Ukrainian State Committee for Standardisation in 1998.
Is there an official translated version of the EMAS Regulation?	No
Number of ISO 14001 Certifications	1 <i>(end of July 2000; source: R. Peglau, German Federal Environmental Agency, Berlin, reinhard.peglau@uba.de)</i>
Number of Verified Quasi-EMAS Registrations	0
Number of “Native” Certification Bodies Conforming to EA 702 (ISO 66)(??)	0
Number of Certified Auditors who Conform to ISO 14012?	0
Number of Accredited EMAS Verifiers?	0
Additional Notes	A “Technical Certificate of Waste” (defined in Annex C of the national GOST 17.0.0.2-99 standard) was created in 1999. This national certification (or “passportisation”) scheme incorporates aspects of ISO 14001 and LCA, and according to a decree by the national government (No. 2034 of November 1, 1999), will become mandatory for all enterprises in 2001.

Special thanks to Dr. Vyacheslav Magmedov, AIH P.H. & ECOTE, for assistance in completing and verifying the information above.

## LIST OF ABBREVIATIONS & ACRONYMS

BEAC - Board of Environmental, Health and Safety Auditor Certifications (USA)  
CEAR - Centre for Environmental Auditor Registration (Japan)  
CEE - Central & Eastern Europe  
CEN - European Committee for Standardization  
COMECON - Council for Mutual Economic Assistance  
DG - Directorate-General (the major unit of organisation within the European Commission)  
DIS - Draft International Standard  
EA - European Cooperation for Accreditation  
EA-2/02 - *EA Policy and Procedures for the Multilateral Agreement.*  
EA-3/08 - *EA Guidelines on the application of EN 45010* [the European version of *IAF guidance on the application of ISO/IEC Guide 61*, which is identical in content.]  
EA-7/02 - EA has issued guidance on ISO/IEC Guide 66 entitled *EA-7/02 - EA Guidelines for the Accreditation of Certification Bodies for Environmental Management Systems*  
EAC - European Accreditation of Certification (defunct)  
EAL - European co-operation on Accreditation of Laboratories (defunct)  
EAR - Environmental Auditing Roundtable (USA)  
EARA - Environmental Auditor's Registration Association  
EMAS – The Eco-Management & Auditing Scheme (Council Regulation 1836/93)  
EMS - Environmental Management System  
EN - European Standard (the version of an international standard formally approved by CEN)  
EN 45010 - European Norm *General requirements for assessment and accreditation of certification systems* [identical to ISO/IEC Guide 61]  
EN 45020 - European Norm *Standardization and related activities, General vocabulary*  
GOST - The countries of the former Soviet Union follow what is known as the GOST regime of quality and safety standards.  
IAF - International Accreditation Forum  
IATCA - International Auditor and Training Certification Association  
IEC - International Electrotechnical Commission  
IEMA - Institute for Environmental Management and Assessment (UK)  
IER - Initial Environmental Review  
IIA - Institute of Internal Auditors (USA)  
IPPC – The Integrated Pollution Prevention & Control Directive (EU)  
ISO - International Organisation for Standardisation  
ISO 9000 - A series of international voluntary certification standard for quality management systems  
ISO 14001 - International voluntary certification standard for environmental management systems  
ISO 14004 - International guidance standard (guidelines) on principles, systems and supporting techniques for environmental management systems  
ISO 14010 - International guidance standard (guidelines) of the general principles of environmental auditing  
ISO 14011 - International guidance standard (guidelines) concerning procedures for the auditing of environmental management systems  
ISO 14012 - International guidance standard (guidelines) concerning qualification criteria for environmental auditors  
ISO/IEC Guide 61 - *General requirements for assessment and accreditation of certification systems* [identical to EN 45010]  
ISO/IEC Guide 66 - *General requirements for bodies operating assessment and certification/registration of environmental management systems (EMS)*  
LCA – Life-Cycle Analysis  
MLA - Multilateral agreement  
NGO - Non-Governmental Organisation  
NIS - Newly Independent States of the Former Soviet Union  
OECD - Organisation for Economic Cooperation & Development  
TC 207 - ISO technical committee appointed to develop environmental certification and guidance standards (the ISO 14000 series)  
TQM - Total Quality Management