DETAILED REPORT ON TRAINING REQUIREMENTS FOR EXPERTS AND INSPECTORS

CONCERTED ACTION


21 Member States
Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, UK

1 EFTA Country
Norway

1 Accession Country
Bulgaria (MS from 2007)

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Certification of Buildings

Inspection of Boilers and AC systems

Adequate provision of assessors and inspectors - Specifications and training requirements

Procedural aspects for energy performance characterisation

The four main themes of the EPBD
1. General Information

The core team on Training has been very active in the Concerted Action project. Around 20 sessions of 1.5 – 2 hours have been arranged. Some of the sessions have been organised in collaboration with other core teams. Around 40-45 presentations were given by delegates to present the state of affairs in their country. The sessions have been visited by all the countries represented in the Concerted Action project. The interactive approach of the sessions was highly appreciated by the delegates.

Under the core team Training, the main objective was to gather and assess information about how the Member States (MS) propose to meet the requirements in Article 10 of the EPBD. Article 10 states that the certification of buildings and the inspection of boilers/ heating systems and air conditioning systems, including advice and recommendations, “must be carried out in an independent manner by qualified and/or accredited experts, whether operating as sole traders or employed by private or public enterprise bodies”. This Article is recognized as a key enabler for implementation of Articles 7, 8 and 9. Moreover, it may also implicitly enable aspects of implementation of Articles 4, 5 and 6 (given the precursor relationship of aspects of Article 4 with aspects of Article 7). See the figure below for an overview of the coherence between the various articles of the EPBD.

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Joint sessions with other core teams: Quality assurance for certification and inspections (CE, TR, IN), Market impact of the new EPBD regulations (PR, CE, IN, TR), National incentives, promoting implementation of recommendations (CE, IN), Quality assurance for assessors and inspectors (CE, TR, IN), Training materials and field practices for certification of existing buildings (CE, TR, PR), Monitoring schemes (ALL), Training experiences for new buildings (ALL), Organisation of data management (ALL).
2. The Programme of Work for the Concerted Action EPBD

The essence of the core team training is to explore the comparative approaches across MS seeking to ensure the adequacy of the human and organisational resourcing (supply) of three sets of specific services that must, under the EPBD, be delivered in the marketplace:

I. energy performance assessment of buildings (Article 7),

II. inspection of boilers/ heating systems (Article 8),

III. inspection of air conditioning systems (Article 9).

By “adequacy” is meant satisfactory volume (V) and satisfactory quality (Q) to ensure credible and smooth operation of these aspects of the EPBD. This exploration includes the description of best practices and facilitates common approaches to determining pre-qualification requirements, training requirements and quality assurance (QA) of such “experts” or service providers (see also figure below). This activity contributes to one of the global objectives of the CA, “to enhance and structure the sharing of information and experiences from national implementation and to promote good practice concepts”.

The initial programme of work aimed at the sharing of thoughts and ideas to the specific issues listed below:

- How many inspectors and experts are needed?
- Quality Assurance for experts, inspections and issued certificates
- Professional Issues:
  - Criteria for accreditation and degree of independence
  - Code of practice for inspectors
  - Insurance and liability

On the way throughout the CA, more topics have been identified. This is further described in the next paragraph.
3. **Actual work in the Training Core Team**

The main sessions and workshops organised in the core team Training, are indicated below. Some of them were held in conjunction with other Core Teams and some of them extending over several meetings.

- Estimation of the number of assessors needed for certification
- QA for assessors and inspectors
- QA systems for certification and overview of training modules for assessors in field of certification
- QA of calculation methods
- Training materials and field practices for certification of existing buildings
- Training and qualifications of assessors and inspectors–harmonisation in MS
- Training experiences of qualified assessors for new buildings
- Code of conduct for assessors
- Independence for assessors and inspectors
- Collecting data from certificates and inspection schemes towards national policy and reporting to EC – why and how?
- Organisation of data management
- Implementation of Article 11 and 12: Monitoring schemes and information
- Market impact of the EPBD regulations
- National incentives, promoting implementation of recommendations

These issues can be grouped as follows in terms of main questions to be answered:

1. **Number of assessors needed.**
   - How many assessors and inspectors are needed in each MS?
   - Phased implementation of EPBD.

2. **Training of assessors.**
   - Which criteria and qualifications for the accreditation of assessors and inspectors are needed?
   - How will the training of assessors and inspectors be organised?

3. **Quality assurance and legal issues.**
   - How will the degree of Independence of the assessors and inspectors be maintained?
   - How will the Quality assurance for experts, assessors and inspectors be organized in various MS?
   - How will Insurance and Liability of the assessors and inspectors be dealt with?

4. **Monitoring the EPBD.**

It became clear that the answers depend strongly on the national implementation procedures in each country. The number of assessors needed, the criteria for technical qualifications, the method for ensuring independence, are highly dependant on the organisational aspects. In the workshops emphasis was placed on
sharing the state of affairs in MS and from their harmonisation of views and methods in the MS. By sending out and analysing questionnaires, the MS obtained an excellent overview on how certain aspects of the Directive are implemented by others. The possibility of benchmarking the status of implementation and sharing knowledge and experiences on a large number of topics, both technical and procedural, has helped MS in organising and managing their own implementation process. In general, the sharing of views and good practices has enhanced and structured national implementation and has promoted general good practices in all countries.

In the following paragraphs, the issues dealt with during the sessions will be described further including conclusions that were drawn during the Concerted Action meetings.

3.1 Number of assessors needed

3.1.1 How many assessors and inspectors are needed in each MS?
During the meetings, it became clear that this is a very difficult question to answer, because the number of assessors and inspectors is highly dependent on several factors, for instance:

- profile of the market (number of transactions)
- product (types of ratings/ certificates specified in regulations)
- process of delivery (survey and calculation procedures)
- people (competent assessors, full or part time, geography)
- policing (what quality assurance system will be used)
- pragmatism (realistic balance of criteria, learning by doing)

See also the two figures below.

The following figures show the number of assessors that are needed in Germany, the UK, Finland and the Netherlands.
Available Experts

<table>
<thead>
<tr>
<th>Role</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architects</td>
<td>94,000</td>
</tr>
<tr>
<td>Civil Engineers</td>
<td>32,400</td>
</tr>
<tr>
<td>Energy Consultants/Master craftsmen with more than 200 h training course</td>
<td>9,400</td>
</tr>
<tr>
<td>Others, like part of the supply engineers</td>
<td>2,500</td>
</tr>
<tr>
<td>Total</td>
<td>approx. 138,000</td>
</tr>
</tbody>
</table>

Germany: Available Assessors (number of persons)

Industry Advisory Report, Summary of Findings - Housing

<table>
<thead>
<tr>
<th>Category</th>
<th>Legislation</th>
<th>Method</th>
<th>Numbers Initially</th>
<th>Certificates Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>New build</td>
<td>The Building Act</td>
<td>HCR/SAP</td>
<td>150,000</td>
<td>150,000</td>
</tr>
<tr>
<td>Refurbishment</td>
<td>The Building Act</td>
<td>SAP/RdSAP</td>
<td>600,000</td>
<td>600,000</td>
</tr>
<tr>
<td>Existing sales</td>
<td>The Housing Act</td>
<td>HCR/RdSAP</td>
<td>1,250,000</td>
<td>1,250,000</td>
</tr>
<tr>
<td>Existing leased</td>
<td>TBA</td>
<td>RdSAP</td>
<td>2,000,000*</td>
<td>500,000*</td>
</tr>
</tbody>
</table>

* = Numbers, costs are uncertain

Motiva

Energy auditing volumes during 1992-2003

Authorised energy auditors by the provinces 2003

Finland.
Conclusions and main outcomes: the total number of required assessors and inspectors cannot be discussed independently from national implementation procedures. The CA discussion on the required number of assessors, made clear to MS that a policy decision is needed regarding the implementation strategy of MS, because of the correlation between the number of required assessors and inspectors and national implementation procedures and decisions.

3.1.2 Phased implementation of EPBD

At the end of 2005, most MS indicated in a workshop on training issues that they did not have adequate numbers of assessors to fully implement the EPBD. Most MS thus stated that they were going to phase in the implementation process in order to have adequate numbers of assessors by 2009. 70% of the MS indicated during the meetings a delay in the implementation of the EPBD, mainly due to a lack of qualified and independent assessors. Furthermore, the definition of public buildings was in most MS still a point of discussion. This also influenced the number of assessors needed.

The criteria and qualifications, for assessors and inspectors depend very much on how the directive is implemented in the various MS. For instance, are all (public) buildings being certified at once? If this is not the case, this influences the number of assessors and inspectors needed. A further issue refers to which public buildings need certification. Some MS have a more wide definition of Public buildings than others. Some MS also plan to phase in the certification of public buildings by broadening the definition of public buildings over time.

Conclusions and main outcomes: an important observation is that there is not one single terminology in the MS. This makes any comparison difficult. Another important observation is that most MS have the training scheme and quality assurance scheme ready for new buildings, whereas the schemes for existing buildings is not ready yet. The skills and training needs also depend strongly on national procedures, and a large variation is to be expected. And, last, a strong and independent legal position is needed for the assessors and inspectors.

3.1.3 Qualifications of assessors and inspectors

The CA discussion on the criteria and qualifications of assessors and inspectors made clear to MS that a policy decision is needed regarding the implementation strategy of MS, because of the correlation of the criteria for the number of assessors and inspectors and national implementation procedures.

From the above, it became clear that most MS were aiming at a phased implementation of the EPBD due to the lack of adequate number of assessors, costly assessments and a large number of buildings that need to be certified.

In the workshops organized in the middle of 2006, other options for a phased implementation of the EPBD were discussed. These options are simplification of the rating method, simplification of data acquisition or to look at the possibilities of measured rating vs. calculated rating. Discussing these subjects helped MS to harmonise thoughts and to make efficient plans for their specific situation.

In the workshops organized in the middle of 2006, other options for a phased implementation of the EPBD were discussed. These options are simplification of the rating method, simplification of data acquisition or to look at the possibilities of measured rating vs. calculated rating. Discussing these subjects helped MS to harmonise thoughts and to make efficient plans for their specific situation.

The CA looked at the practical experiences of MS in these fields of simplifications and practical examples of training materials that have come available in 2006. For instance, Germany, Denmark and The Netherlands showed all participants their available instruments and results. The examples of practical information on certification of buildings were very well received by the MS participants. Practical information enables MS to harmonise thoughts and use experiences of others in their own work, which is an excellent result of the Concerted Action structure. Field tests on certification are a very solid basis for the (further) development of certification methods and simplifications of certification schemes while maintaining an adequate quality level.

The general opinion in MS is that the costs of building certification are high and solutions for improving cost effectiveness are more than welcome. Information on the costs and the most important influencing factors
are obtained through field tests. These tests can quantify for instance the effect of proper training material on the time used per assessment. Other factors like accuracy and the effect of missing (metered) data on the outcome of the assessment can also be quantified.

**Conclusion and main outcomes:** It seems that in more and more MS field tests are carried out. It is strongly recommended that a benchmarking scheme is set up to collect data of field tests among MS and structure and disseminate this information to help MS to come to efficient methods to certificate buildings. This could be a benchmarking exercise either within the context of CA, or as part of one of the EIE-projects.

Harmonisation and benchmarking of implementation processes can be an added value of the CA-activities that come after the official implementation of the EPBD in MS and will also help the European Commission to further develop the Directive.

### New residential buildings

<table>
<thead>
<tr>
<th>Country</th>
<th>Calculation</th>
<th>Advice</th>
<th>Certificate</th>
<th>Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium</td>
<td>Rapporteur</td>
<td>Rapporteur</td>
<td>Rapporteur</td>
<td>Not defined; it’s less expensive if the rapporteur is the architect of the project</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>Independent expert</td>
<td>Independent expert</td>
<td>Independent expert</td>
<td>na</td>
</tr>
<tr>
<td>Denmark</td>
<td>Constructor</td>
<td>Assessor</td>
<td>Assessor / DEA</td>
<td>410 €</td>
</tr>
<tr>
<td>Finland</td>
<td>Technical designer</td>
<td>Technical designer</td>
<td>Technical designer</td>
<td>Included in the design</td>
</tr>
<tr>
<td>France</td>
<td>Assessor of a certified organization</td>
<td>Assessor of a certified organization</td>
<td>Assessor of a certified organization</td>
<td>200 € per certificate</td>
</tr>
<tr>
<td>Hungary</td>
<td>Licensed surveyors</td>
<td>Licensed surveyors</td>
<td>Licensed surveyors</td>
<td>Market</td>
</tr>
<tr>
<td>Italy</td>
<td>The heating system consultant</td>
<td>The heating system consultant</td>
<td>Not fully decided yet, centrally controlled or by the individual assessors.</td>
<td>Estimated at up to 300 €</td>
</tr>
<tr>
<td>Ireland</td>
<td>Building Energy Rating Assessors</td>
<td>Building Energy Rating Assessors</td>
<td>Not fully decided yet, centrally controlled or by the individual assessors.</td>
<td>Not decided</td>
</tr>
<tr>
<td>Netherlands</td>
<td>Assessor of a certified organization</td>
<td>Assessor of a certified organization</td>
<td>Assessor of a certified organization</td>
<td>150€</td>
</tr>
<tr>
<td>Portugal</td>
<td>Qualified experts</td>
<td>Qualified experts</td>
<td>Certificate Organization</td>
<td>250€ – 300€</td>
</tr>
<tr>
<td>Slovakia</td>
<td>The authorized person responsible</td>
<td>The authorized person responsible</td>
<td>It is not clear if it should be a certified organisation</td>
<td>Approximately max. 200 €</td>
</tr>
<tr>
<td>Slovenia</td>
<td>Certified assessors</td>
<td>Certified assessors</td>
<td>Certified assessors</td>
<td>Cost dependent on complexity</td>
</tr>
<tr>
<td>Spain</td>
<td>The project designer</td>
<td>The project designer</td>
<td>Local/regional gov.</td>
<td>Not yet specified</td>
</tr>
<tr>
<td>UK</td>
<td>SAP assessors</td>
<td>Home Inspector</td>
<td>Assessor</td>
<td>Typically ~£200</td>
</tr>
</tbody>
</table>

### 3.2 Training of assessors

#### 3.2.1 Which criteria and qualifications for the accreditation of assessors and inspectors are needed?

As described earlier in this report, from the discussions in the workshops on training and relevant subjects, CA participants concluded that the total number of required assessors and inspectors cannot be discussed independently from national implementation procedures. Also the skills and training needs of assessors and inspectors depend strongly on national procedures. Starting all the required certification efforts within a short period of time will create pressure on the required number of assessors and inspectors. So, phasing in the requirements seems evident for a stable certification market in most MS.
Conclusion and main outcomes: It was concluded that the total number of required assessors and inspectors cannot be discussed independently from national implementation procedures. Various possibilities arose, namely if training should be offered by governments or by the market. There is no clear advantage of either solution, and MS adopted one or the other at their discretion, but knowing well how each system works. In some MS, no specific training is required, as local professionals are considered to already have the required skills. A large range of qualifications will be found among MS. E.g., requirements for issuing certificates range from building surveyors to architects and engineers. In some countries, requirements vary according to building type or size. And for inspections of boilers and air-conditioners, the range of qualifications varies from chimney-sweepers to engineers, depending on the country and on the type and size of the equipment.

3.2.2 How will the training of assessors and inspectors be organised?

Various possibilities for training programmes came forward during the meetings. For instance will governments organise the training or will this be left up to the market? In the Dublin meeting, it was found that there is no government involvement in France, Hungary, nor in The Netherlands. In Ireland, in Portugal and in the UK, the government sets the criteria for the training programs and trains the trainers. In Belgium (Flanders), Bulgaria, Portugal, Spain (intensive course) and Denmark, the government only covers the cost of training materials, whereas all costs and organisation is done by the government in Cyprus and in Spain (basic training).

At the end of 2005, most MS indicated that they did not have EPBD-proof training materials available yet. For this reason, no training was taking place by then in most MS. To this respect, some MS stated that they will make use of training materials available in other MS. So, harmonisation of training materials is taking place. This is a major gain of the Concerted Action.

Conclusion and main outcomes: It was concluded that the training of assessors and inspectors cannot be discussed independently from national implementation procedures. The skills and training needs of assessors and inspectors also depend strongly on national procedures. Training duration is reported to range from zero to 30 days. Throughout the CA, the MS also became aware of the training materials available in other MS.
How to Become Licensed Home Inspector

**New Entrant**
- Formally Recognised Training Course (knowledge & understanding)
- Approved Assessment Centre (Competence assessment)

**Existing Entrant**
- Approved Assessment Centre (knowledge & understanding; Competence gaps)
- CPD Courses

Organisation of training in UK.

**Where we organized the training?**

Organisation of training in Bulgaria.
3.3 Quality assurance and legal issues

3.3.1 How will the degree of Independence of the assessors and inspectors be maintained?

During the meetings, the discussion focussed on how the independence of assessors and inspectors will be managed. Taking into account that building designers might issue a certificate for their own buildings, or that housing or property companies may be allowed to rate their own certificates etc. Discussed was, in this respect, if MS need a Code of Practice for assessors and inspectors, and who will decide this?

In order to avoid any conflict of interest (real or perceived), MS should have a solid and just certification scheme with adequate Quality assurance. A major challenge for governments is to ensure that assessments and inspections are carried out and certificates and recommendations for improvements are issued in an objective and fair/consistent manner.

An important issue that is strongly related is how the Quality assurance for experts, assessors and inspectors will be organized in the MS. Again various possibilities came forward during the meetings. For instance, quality assurance will be managed via government or via companies?

Another issue is on how Insurance and Liability of the assessors and inspectors will be dealt with. A general view followed from the meetings was that any damage should fall under ‘normal’ consultant risk.
## Monitoring the EPBD

Several workshops were dedicated to the subject of monitoring and data management. This subject was dealt with because of the dependence between the needed skills of assessors and the ultimate model of monitoring and data management. By using a logical framework method, in a relative short time, the participants were able to get to the core of the subject 'monitoring EPBD'. All MS agreed that monitoring the EPBD creates a lot of valuable information about the energy quality of national building stocks. This information is most valuable not only for the Governments, but especially for commercial parties as well. Therefore, MS should aim at letting the market do its job and at the same time guard the privacy information of building owners.

In several member states, e.g., the UK, The Netherlands, Ireland, and Portugal, already publicly available databases exist which can be used as basis for monitoring energy performance aspects.

### Conclusions and main outcomes:

The information on monitoring schemes helps other MS to gather thoughts and learn from the developing process in other countries. Some thought should be done in the area of what is nice to know and what MS do really need to know as a minimum. Moreover, it is important to keep thinking about the added value of the EPBD in all instruments developed by MS.

An important outcome of the workshops on monitoring is the question of how the European Commission wishes to be informed on the directive. This issue is a gap in the implementation process at this moment. What data should be gathered to report to the EC on the progress of the directive? This was discussed in the last CA meeting. By working and thinking together on these subjects MS can create a system that helps themselves and the European Commission to further develop the directive.
3.5 Advances in implementation and harmonisation

Since the start of the Concerted Action project, a lot of work has been done regarding the harmonisation of thoughts and methods in the MS. By sending out and analysing the various questionnaires prepared during the CA, for instance, MS get an excellent overview on how certain items of the directive are implemented in the various MS. This helps MS to get in contact with other MS with similar approaches, and it helps them to organise and manage their own implementation work better. Furthermore, the Concerted Action project is an excellent platform where MS can meet the right people to discuss similarities and differences in approaches and where they can come to a better and harmonised approach of the EPBD. MS have contributed expertise from National Governments and relevant market parties, and this helps delegates to structure their work. The possibility of benchmarking the status of implementation and sharing knowledge and experiences on a large number of topics, both technical and procedural, helps MS and the European Commission in positioning their own implementation-process and in further developing the directive.

In general, we can conclude that the sharing of thoughts and good practices among MS during meetings has enhanced and structured the sharing of information and experiences from national implementation and has promoted good practices in all MS.

During the last meeting, a round table was held among MS to discuss on the lessons learned from CA. An overview of the most important items is given below.

- CA stimulated the formulation of the Volume/Quality/Quality Assurance concept as a key balance of considerations in assessing and designing the national systems for ensuring competent persons.
- Understanding the approaches taken or proposed in other MS has helped to gain confidence in the detailed formulation of robust systems for competent persons (assessors and inspectors).
- It is found very valuable to inform your country on how training aspects are handled and implemented in other countries. This helps to further formulate own insights in how to handle implementation issues.
- The sharing of information is very important as it helps to ‘soften’ the learning curve. It avoids the wheel to be invented over and over again.

3.6 Some questions and gaps to be further considered in the future

In the various Concerted Actions meetings, a variety of issues have been worked on and discussed. As time went by, MS have continued their work implementing the directive. It was impossible to handle all relevant subjects and issues in only 8 meetings. Gaps that are still interesting to explore in the future CA are issues on ‘reporting to the EU’: What are the ideas and goals the EC has on reporting the EPBD results? What information can MS offer? How can this information be used to help further develop the directive? Another very interesting issue is ‘the added value of the certificate’. And how can MS make use of the information in the certificate to stimulate energy saving in buildings? During the last meeting, a round table was held among MS to discuss on the points that can be improved in the next CA. An overview of the most important items is given below.

- More focus on specific issues that play a role in the implementation process of MS would have helped to share more practical information. As MS are moving along the implementation in MS, the CA can discuss further any specific issues that play a part in various MS.
- More focus on active involvement and active participation of MS during meetings and workshops. This includes the selection of interesting topics that can be put on the agenda.
- It would be nice to have more time for discussions in smaller working groups, preferably between countries that share the same problems.
- It would be nice to have more practical examples and information that helps MS to gather thoughts in the Project Centre.
- It would be nice to have practical sessions and visits to agencies that already issue certificates, for instance to learn from their processes.
It would be nice to hear practical stories of assessors and inspectors in their work, describing problems, solutions, etc. This might also include involving companies that issue the assessments and the inspections. They can give MS more details on the real life problems of implementation of the EPBD.

The implementation process in most countries is becoming more concrete and entered a new phase: at the end of the CA, in almost every country, at least the outlines for implementing the EPBD-articles are set in legislation, instruments are in the last stages of development and staff is being trained. The amount of useful information increases, and therefore the efficiency of the CA-network is becoming more obvious. For the future Concerted Action, this means that more information can be shared, and that the information is becoming more complex and detailed. This trend can already be clearly seen in the last three CA-meetings, and this might call for an adapted approach in Concerted Actions II in order to keep the information exchange as efficient and effective as possible.

### 4. Summary of Training topics discussed during the CA-EPBD

<table>
<thead>
<tr>
<th>Topic</th>
<th>Main discussions and outcomes</th>
<th>Conclusion of topic?</th>
<th>Future directions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of assessors needed.</td>
<td>The number of assessors depends on several factors. The total number of required assessors cannot be discussed independently from national implementation procedures.</td>
<td>The legislation and procedures have been defined in most MS.</td>
<td>A comparison among the impact of the different choices is still useful.</td>
</tr>
<tr>
<td>Criteria, training and qualifications for the accreditation of assessors</td>
<td>The skills and training needs of assessors depends strongly on national procedures. MS became aware of the training materials available in other MS and some made use of them to define their requirements. A large range of qualifications will be found among MS.</td>
<td>No, but most MS have selected solutions among a limited set of options.</td>
<td>Need to discuss results after monitoring implementation at MS level.</td>
</tr>
<tr>
<td>Degree of Independence of the assessors</td>
<td>In order to avoid conflicts of interest, MS need a solid certification scheme with adequate Quality assurance. Assessments, certificates and recommendations must be issued in an objective, fair and consistent manner.</td>
<td>No, but there is a good consensus about available options.</td>
<td>Need to discuss results after monitoring implementation at MS level.</td>
</tr>
<tr>
<td>Monitoring the EPBD</td>
<td>All MS agreed that monitoring the EPBD creates a lot of valuable information about the energy quality of national building stocks. This is important for governments and for commercial parties as well.</td>
<td>No, but there is a good consensus about available options.</td>
<td>Large need for further discussions to search for the best solutions, especially about which data to collect.</td>
</tr>
</tbody>
</table>
5. Conclusions and recommendations

The CA stimulated the formulation of the Volume/Quality/Quality Assurance concept as a key balance of considerations in designing and assessing the national systems for ensuring competent persons as assessors and inspectors.

Understanding the approaches taken or proposed in other MS has helped to gain confidence in the detailed formulation of robust systems for these competent persons. MS found it very valuable to know how training is handled and implemented in other countries. This helped to further formulate own insights on implementation issues. The sharing of information is very important as it helps to ‘soften’ the learning curve and avoids reinvention of the wheel.

Although a variety of issues have been worked on and discussed during the parallel sessions and workshops, given the status of implementation of the Directive it was impossible to handle all relevant subjects. Items that are still interesting to explore in the future are:

- Monitoring the successes of the Directive in practice, e.g. how much energy saving can be attributed to the individual requirements of the Directive;
- What further information on the impact of the Directive and lessons learnt can MS offer? How can this information and lessons learnt be used to also optimize the impact of the Directive in other MS?
- What is the impact and multiple use of the certificate? How can MS make use of the information in the certificate (e.g. by broadly registering and monitoring issued certificates) to further stimulate energy saving in buildings?

Practical examples from the MS were particularly useful. When presented with practical examples, MS see and learn actively from one another and are able to take home the best practices.