IEA/AMF Research Report

Annex XXVII

Standardization of alternative fuels

PHASE 2

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August 2004

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This report is the result of an International Energy Agency's, Implementing Agreement on Advanced Motor Fuels (IEA/AMF) project concerning standardization of alternative fuels. The project has been carried out as an IEA/AMF annex, number XXVII. The first phase of the annex had financial support from Canada, Finland, France, Japan (LEVO), Sweden and The USA. The second phase of annex XXVII have had financial support from Canada, Japan (LEVO), Sweden and the USA. This report of the second phase of annex XXVII is as well as the report of the first phase open to public and can, as long as copies are available, be ordered from IEA/AMF`s secretariat, Atrax Energi AB or from the financial contributors as mentioned above.

SUMMARY

March 2003 the Executive Committee of the International Energy Agency´s Implementing Agreement on Advanced Motor fuels (IEA/AMF) decided to continue annex XXVII "Standardization of alternative fuels" with a second phase. The purpose of the second phase was to go further in the contacts with the International Organization for Standardization (ISO) as well as the European Committee for Standardization (CEN) and their technical committees, to better understand their needs and to investigate how IEA/AMF could contribute to their work. It was also scheduled to put forward proposals on how IEA/AMF could co-operate with CEN and ISO and their technical committees (TC: s), primarily ISO/TC 28 "Petroleum Products and Lubricants" and CEN/TC 19 "Petroleum Products, Lubricants and Related Products".

The main part of the work in IEA/AMF annex XXVII phase two has focused on personal contacts within CEN/TC 19 and ISO/TC 28, but also on data and information collection from websites and written information.

Together with the analysis of this information, the internal organization of a co-operation between IEA/AMF and ISO/TC 28 and of a co-operation between IEA/AMF and CEN/TC 19 have also been discussed and analysed.

Resulting from this analysis, co-operation of IEA/AMF with ISO/TC 28 and CEN/TC 19 can be recommended since it:

- Will be in line with the new IEA/AMF strategic plan.
- Have advantages for IEA/AMF in disseminating information and results of its work on alternative and advanced fuels.
- Will increase worldwide awareness of IEA/AMF's work and its vision and goals.
- May increase the interest among new nations/organizations for membership of IEA/AMF.

A co-operation with one or both of these organizations should initially not only focus on alternative fuels but also on issues about advanced motor fuels.

Examples of issues where these organizations could use the competence, knowledge and experiences of IEA/AMF are:

- Management, policy and strategies
- Differences between national standards
- National regulation and jurisdiction
- National opinions in the need of standards
- Appointing relevant experts for working groups in the area of advanced/alternative fuels
- Experts for collection and analysing data about advanced/alternative fuels

It is not possible for IEA/AMF to become a full member of either CEN/TC 19 or ISO/TC 28, but IEA/AMF could be a liaison to these technical committees and their subcommittees or working groups.

Tasks to handle as liaison could be for example:

- Read and, in case of interest for IEA/AMF, react and comment on relevant distributed papers/information.
- Send a short annual or biennale report on the topics that IEA/AMF has been dealing with and on the work carried out, in the area of standardization of alternative fuels.
- Participate in the organization's assembly, every second year.
- React on new work items and appoint experts for new working groups, when found of interest for IEA/AMF or when IEA/AMF could contribute to the work in a substantial way.

There are no annual fees related to establishing a liaison with ISO/TC 28 and CEN/TC 19. However, costs will occur since time has to be spent on the activities mentioned above. The time for these activities is estimated to be about two to three weeks per year and per organization. With for example an hourly rate of 110 Euros, the total annual costs would be in the range of 9000 to 13000 Euros plus cost for expenses (mainly travelling), for each liaison.

There are no standard forms for applications, either for ISO/TC 28 or CEN/TC 19, but the following information should be made available to both CEN/TC 19 and ISO/TC 28:

- A statement with a description of the IEA Implementing Agreement on Advanced Motor Fuels, its purpose and goals.
- A statement showing the organization’s intention to support the work of ISO/TC 28 or CEN/TC 19.
- A list of member countries.
- The statutes.

The co-operation with ISO/TC 28 and/or CEN/TC 19 could be managed by IEA/AMF in different internal organizational forms. Either annex XXVII could be prolonged, a new annex could be established or a new permanent function inside IEA/AMF could be created. Co-operation in the form of an annex currently seems to be the most flexible solution.

If the option to co-operate in the form of an annex is chosen, then it will also be important to decide if this annex shall be voluntary or mandatory.

A mandatory annex is recommended since the co-operation will:

- Be advantageous for all IEA/AMF member nations/organisations.
- Contribute to eliminate the risk of dividing IEA/AMF in two or more internal regional groups and because of that avoiding the threat that this might cause to IEA/AMF's future existence.

IEA/AMF would have to elaborate on the level of activity in CEN/TC 19`s and/or ISO/TC 28´s working groups, in which working groups to participate, the time and costs that experts operating on behalf of IEA/AMF can spend on the co-operation, as well as the funding of this work.

If IEA/AMF decides to apply for a liaison to CEN/TC 19 and ISO/TC 28, IEA/AMF is recommended to start a discussion with primarily CEN/TC 19 about the possibilities for IEA/AMF to arrange workshops in the area of standardization of alternative fuels on their behalf.

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1. Background

During the year 2000 it became more and more clear that the use of alternative fuels probably would increase drastically in the next five to ten years period, compared to the earlier situation. Such an increased use of alternative fuels would with all probability not be possible without specification standards as well as standards on sampling and test methods, etc for the alternative fuels.

Such standards would:

- Enable vehicle manufacturers to decide if they can accept the use of alternative fuels in their vehicles/engines.
- Enable oil companies and distributors of oil products to decide if blending of alternative fuels in their products and not at least introducing them into their distribution systems are acceptable.

Standards are usually produced by national standardization organisations. On an international level, standards can be produced by regional standardization organisations as for example the European Committee for Standardization – CEN. In the USA the situation is somewhat different because of the size of the country but also because of the situation in the USA with rather independent states. In the USA there exist several standardization organizations that to some extent co-operate concerning standardization but to some extent also are competitors. Worldwide standards are produced by the International Organization for Standardization, ISO.

Since standardization of alternative fuels sometimes might be rather different from standardization of conventional fuels such as gasoline and diesel oil, it is important to engage experts on alternative fuels in the work on alternative fuels standards, both on a national as well as on an international level.

In April 2002, the International Energy Agency's Implementing Agreement on Advanced Motor Fuels (IEA/AMF) Executive Committee (ExCo) decided to establish a new annex on standardization on alternative fuels (annex XXVII). The reason for this decision was that IEA/AMF had been supporting research and development in the area of production, distribution and use of alternative fuels for many years, and as a result IEA/AMF can be considered to be a relevant body to contribute with experiences and knowledge to the standardization work on alternative fuels that is done in ISO and CEN for example. At this ExCo-meeting, Atrax Energi AB was appointed to be the operating agent for annex XXVII.

In September 2002 phase 1 of annex XXVII was started with participants from Canada, Finland, France, Japan (LEVO), Sweden and later also the USA.

In this first phase, a state of the art report on the situation regarding standardization of alternative fuels in the participating countries as well as in the international arena (CEN and ISO) was produced. Further, the primary interest by CEN and ISO for a co-operation with IEA/AMF was analysed as well as to have IEA/AMF act as an independent organizer of international workshops and seminars on standardization of alternative fuels.

In phase 1 several people in the participating countries, CEN and ISO were interviewed. The results of these interviews together with other information (collected from websites, literature,

etc.) have been analysed and used as a base for conclusions concerning IEA/AMF`s future role in the international work on standardization of alternative fuels.

The results and conclusions of phase 1 were presented at IEA/AMF`s ExCo-meeting in March 2003 and in a report dated July 2003.

The result of phase 1 can shortly be summarized as follows:

- *The use of alternative fuels is most likely to grow the next coming 5 to 10 years and in some markets this growth may be rather fast.*
- *Such an increased use, not at least on the consumer market, requires acceptance of the alternative fuel by distributors, engine/vehicle manufacturers and users. This requires standards that are at least accepted by distributors and engine/vehicle manufactures.*
- *Since both transport and trade today are worldwide, standards need to be implemented on an international level, but today worldwide standards on specification and properties of conventional vehicle fuels are scarce.*
- *If there have to be different standards for a fuel used for low blending and the same fuel to be used in neat form, it is more urgent to have a specification and standard for the use of the fuel for low blending, since low blending of alternative fuels into conventional fuels probably will be the dominant introduction strategy for the alternative fuels.*
- *Since the use of biomass based alternative fuels, but also to some extent natural gas, contributes to the reduction of the net emissions of carbon dioxide, and in association with that the impact on the climate, it seems reasonable to prioritise the work on standardization on alternative fuels to this kind of fuels or fuels produced from synthesis gas produced from natural gas or gasified biomass.*
- *International standards are best produced by standardization organizations like CEN and ISO.*
- *CEN and ISO have shown to be interested in some form of co-operation to use IEA/AMF's competences, knowledge and experience on alternative fuels. The form of such co-operation has to be discussed.*
- *Among people engaged in the standardization of vehicle fuels there is also an interest to have a kind of informal discussion forum where issues related to standardization of alternative fuels could be discussed, free from formal negotiations and in advance of such negotiations. Such informal discussions could preferably be arranged/organized in the form of workshops by an organization independent from CEN and ISO.*
- *IEA/AMF has good prerequisites for organizing such workshops. This could be done at the request of CEN and/or ISO.*

In the report of phase 1 a proposal on how to go further with the idea of engaging IEA/AMF in the international work on standardization of alternative fuels was also included. The following activities were recommended:

- *Further and closer contacts and discussions with representatives of the international standardization organizations ISO and CEN, and their technical committees, to better understand:*

  - Their need for IEA/AMF contributions.

- Their wishes on how IEA/AMF could contribute to their work.

- How IEA/AMF also could contribute to the international work on standardization of alternative fuels, outside ISO and CEN, acting as an arrange, and/or organizer of international seminars/workshops in this area.

- *Collecting and summarizing existing information and new insights obtained from the discussions mentioned above.*

- *Analysing the summarized information with the purpose to see in which way IEA/AMF best could contribute to the international work on the standardization of alternative fuels.*

In parallel to and in interaction with these activities it would be possible to investigate and put forward proposals for:

- *IEA/AMF's further co-operation with CEN and ISO, their technical groups and in some cases maybe even CEN and ISO's working groups.*
- *IEA/AMF's further activities in the area of standardization of alternative fuels.*

At the IEA/AMF ExCo-meeting in March 2003 it was decided to continue the work of annex XXVII with a second phase, in line with the recommendations of phase 1 as presented above.

Participants in phase 2 of annex XXVII are Canada, Japan (LEVO), Sweden and the USA. The work on phase 2 commenced in September 2003.

The main part of the work in phase 2 focused on personal contacts with people within CEN and ISO, primarily in CEN`s technical committee number 19 on "Petroleum Products, Lubricants And Related Products" and in ISO`s Technical committee number 28 "Petroleum Products and Lubricants", since these committees have been found to be the ones with the highest relevance for IEA/AMF. In parallel, work has been started to analyse the internal situation in IEA/AMF and to come up with possible organizational solutions within IEA/AMF concerning a future co-operation with CEN and/or ISO. For more information about the work see chapter 2 "Introduction and Methodology"

2. Introduction and methodology

2.1 General information

This report:

- Addresses standards and specifications for alternative vehicle fuels in the context of IEA's Implementing Agreement on Advanced Motor Fuels (IEA/AMF).
- Addresses possibilities and forms of co-operation between IEA/AMF and The International Organization for Standardization – ISO – and The European Committee for Standardization – CEN –.
- Addresses different internal organizational forms that could be used by IEA/AMF for co-operation with ISO/TC 28 and CEN/TC 19
- Describes the results of phase 2 of IEA/AMF annex XXVII.

The result of phase 1 of IEA/AMF annex XXVII has been addressed in a separate report printed in July 2003. The report of phase 1 is a state of the art report concerning standardization of alternative fuels in Canada, Finland, France, Japan, Sweden and the USA. The work on standardization of alternative fuels in ISO´s Technical Committee 28 and CEN`s Technical Committee 19 is also described in that report as well as a first short discussion about a possible co-operation between ISO/TC 28, CEN/TC 19 and IEA/AMF. For more information about phase one see chapter 1 'Background' or the report of phase one.

In annex XXVII the words “alternative fuels” are used for all kinds of fuels that can replace gasoline or diesel oil. Reformulated qualities of gasoline and diesel oil are not included in this Annex. The same goes for electricity. Even though electricity can be considered as a fuel, like for example is common in the USA, it is not included here because it is considered to be an energy carrier. Further annex XXVII is mainly concentrated on standards on fuel composition and fuel specifications, including sampling and test methods. Other types of standards, like for example on refuelling nozzles for gas vehicles, are not included.

General as well as detailed information from CEN/TC19 concerning a form of co-operation and administrative procedures for application are summarized and presented in chapter 3 ”The European Committee for Standardization - CEN".

General as well as detailed information from ISO/TC 28 concerning a form of co-operation and administrative procedures for application to become a liaison are summarized and presented in chapter 4 ”The International Organization for Standardization – ISO”.

In chapter 5 ”Co-operation” specific topics on co-operation between IEA/AMF and the standardization committees CEN/TC19 and ISO/TC28 are presented.

In chapter 6 ”Organizational matters” a discussion concerning how to organize a co-operation with ISO/TC 28 and/or CEN/TC 19 inside the organization of IEA/AMF is presented.

Conclusions concerning a future co-operation with ISO/TC 28 and CEN/TC 19 are presented in chapter 7 "Conclusions".

In chapter 8 ”Topics for decision and Further Work” proposals for decisions and further actions to be taken by IEA/AMF to obtain such a co-operation are presented.

The work in phase 2 of IEA/AMF annex XXVII has been carried out by Björn Rehnlund (Atrax Energi AB). Martijn van Walwijk contributed to the report with comments and editorial improvements.

To some extent the background information in chapter 1 of this report has already been presented in the report of phase 1. It is repeated in this report to facilitate understanding of the analysis.

2.2 Methodology

In September 2003, the operational part of phase 2 of IEA/AMF Annex XXVII started.

The work in phase 2 has been focusing very much on information coming from personal contacts with people in CEN and ISO as well as people in IEA/AMF (e-mail, mail, telephone and personal contacts). Additionally, information from CEN and ISO`s websites and miscellaneous written information from CEN and ISO have been used. For example ISO/IEC Directives part 1 - "Procedures for the technical work", and ISO/IEC Supplement – "Procedures specific to ISO" have been used as a source of information concerning ISO`s roles and procedures for work and co-operation.

In September and October 2003 personal contacts were established with people in the secretariats of CEN´s Technical Committee number 19 (CEN/TC19) (Ortwin Costenoble, secretary) and ISO`s Technical Committee number 28 (ISO/TC 28) (Paula Watkins, secretary). November 2003 Björn Rehnlund (Atrax Energi AB) visited CEN/TC 19`s secretary Ortwin Costenoble at the Netherlands Standardization Institute (NEN) in Delft, the Netherlands. In December 2003 Björn Rehnlund also visited ISO/TC28`s secretary Paula Watkins at the American Petroleum Institute (API) in Washington, USA. Later on there have been further telephone and e-mail contacts with the secretaries of ISO/TC 28 and CEN/TC 19.

The information from personal contacts, websites and written information has been summarized and analysed with the purpose to draw conclusions concerning possible co-operation with, and internal organizational forms of co-operation for IEA/AMF, with ISO/TC 28 and CEN/TC 19.

The contents of chapters 3 and 4 of this report have been discussed with Mr. Ortwin Costenoble (CEN/TC 19) and Mrs. Paula Watkins (ISO/TC 28), respectively. Their comments and suggestions for chapters 5 and 7, concerning co-operation and conclusions, are also included.

The proposals presented in this report have also been discussed with the chairman of IEA/AMF, Mr. Stephen Goguen, and the secretary of IEA/AMF, Mr. Claës Pilo.

3. The European Committee for Standardization – CEN

3.1 Introduction

The European Committee for Standardization (CEN) is the European association responsible for development of European standards. CEN has 28 members which all are national standardization institutes in European countries. The following countries with their respective institutes are members of CEN: Austria (ON), Belgium (IBN/BIN), Cyprus (CYS), Czech Republic (CSNI), Denmark (DS), Estonia (EVS), Finland (SFS), France (AFNOR), Germany (DIN), Greece (ELOT), Hungary (MSZT), Iceland (STRI), Ireland (NSAI), Italy (UNI), Latvia (LVS), Lithuania (LST), Luxembourg (SEE), Malta (MSA), the Netherlands (NEN), Norway (NSF), Poland (PKN) Portugal (IPQ), Slovakia (SUTN), Slovenia (SIST), Spain (AENOR), Sweden (SIS), Switzerland (SNV) and United Kingdom (BSI).

CEN has also other types of membership. One kind of membership is called “affiliated member”. The other kind of membership is “corresponding member”. Both affiliated members and corresponding members have to be national standardization institutes. Affiliated membership is restricted to non-EU member countries that are applying for EU membership. These countries are entitled to vote, even though their vote not is counted. They do not have to publish new EN-standards. Corresponding members, (Egypt, Serbia and Montenegro, South Africa and Ukraine) are receiving all relevant CEN material for information, but they do not have the right to vote and they do not have to publish new EN-standards.

Other organizations that want to participate in CEN and the work of CEN can be accepted as liaisons to CEN or specifically to CEN`s technical committees. Broad-based European organizations, such as CEFIC, often are liaisons to CEN itself (called associates), while European trade organizations more tend to be liaisons to a technical committee. Associates participate in the General Assembly 8without voting rights), the Administrative Board when policy matters are being discussed, The Technical Board and any other technical body. They receive all relevant documentation and information, including draft standards. Technical liaisons have similar rights in a CEN technical committee, but do not receive all draft standards.

Furthermore, CEN has specific cooperation agreements with the EU and WTO. CEN is also the European counterpart of ISO, the International Organisation for Standardization. CEN`s technical committee 19 “Petroleum Products, Lubricants and Related Products” is the European counterpart of ISO`s technical committee 28 “Petroleum Products and Lubricants”.

The principal results of CEN´s work are European standards (EN). Such standards must be published by each National Standardization Institute as an identical national standard and any already existing national standard that conflicts with the European standard must be withdrawn. Affiliated member countries and corresponding member countries do not have to follow this procedure and they do not have to publish new standards. Even though the use of standards is voluntary, sometimes the European standards are related to European legislation (Directives). In such cases the European commission often mandates CEN in the area of production of certain standards, to support European legislation by written standards. A mandate usually consists of a sponsored assignment to write a standard that is supported by inter-laboratory testing.

CEN has also other types of publications and reports that can be published quicker than EN-standards (which normally require 2 years or more to produce) or that may enable proceeding with further work. Examples of such publications/reports are Technical Reports (TR) and Technical Specifications (TS). It is also possible for CEN to help interested parties to arrange workshops with the purpose to produce proposal for an agreement similar to a standard. The participants in the workshop and also other parties can use such an agreement while an accepted European standard is being produced, agreed and published. This type of agreement is called a CEN Workshop Agreement (CWA). Spring 2004 workshops agreements on E85 (ethanol fuel for flexible fuel vehicles) and water-emulsified diesel fuel are under way to be used as an agreement prior to a new EN-standard.

3.2 Structure and management of CEN and CEN´s standardization work

The president and the secretary general head CEN. May 2004 Mike Kelly (UK) was elected new president, supported by Gaston Michaud (France) as secretary general.

CEN is governed by the general assembly of its National members in accordance with its legal statutes. The assembly is responsible for the budget, membership and appointment of officers.

The administrative board (BA) is authorized agent of the assembly to direct CEN`s operation, prepare the annual budget and membership applications.

The technical board (BT) controls the standard programme and promotes its execution by a management centre, technical committees (TC) and other bodies. The technical board is also responsible for the development of technical policies and for the overall management of technical activities to guarantee coherence and consistency of the CEN standardization activities system-wise.

CEN`s technical committees (CEN/TC) are responsible for the programming and planning of the technical work in the form of a business plan for the monitoring and the execution of the work in accordance with the agreed business plan. The technical committees are also responsible for the management of the process making standards, respecting CEN`s policy and building consensus among all interested parties represented through the CEN National members, the CEN Associates and the CEN Affiliates.

The technical development work, with the purpose to produce proposals for standards, is done by different working groups (WG), under the responsibility of a CEN/TC. The member states have the possibility to be represented in the WGs by experts nominated by the national representatives/standardization institutes participating in CEN.

When a WG has completed a proposal for a standard, the secretary of the responsible TC shall forwards it to CEN`s central office in Brussels. The document is thereafter sent out for an inquiry to the national standards institutes of CEN member states. The vote can be in favour or against this document. The vote may also be supplemented with comments concerning the proposal. The comments will be used by the TC secretariat to redraft the document into a final proposal for a standard.

After redrafting, CEN`s central office will send the final proposal for a new standard out for a formal vote. This time the vote cannot be supplemented with comments. It is a majority vote system and votes will be weighted following the same formula as votes in the European council.

3.3 Technical liaisons

As described above it is not only possible for CEN central, but also for separate Technical Committees, to have liaisons with relevant external international organizations, institutes, etc. A TC can have internal liaisons with other TCs as well.

External technical liaisons shall be subject to authorization of the Technical Board (BT) and shall be considered in accordance with the following criteria:

- The central Secretariat has investigated thoroughly the relevance of the proposed liaison and that the nature of the assistance to be provided by the organization concerned is clearly demonstrated with regard to the CEN/CENELEC work in question;
- There is a real need for such assistance and that it is positively sought by CEN national members, to support their efforts within the technical body in question;
- There is a realistic expectation that such assistance will be willingly given by the organization in question without delay.

3.4 CEN´s Technical Committee 19 "Petroleum Products, Lubricants and Related Products"

CEN's Technical Committee 19 "Petroleum Products, Lubricants and Related Products" is the TC that also deals with standardization issues related to alternative fuels, both for fossil and renewable fuels. CEN/TC 19 is also the European counterpart of ISO`s Technical Committee 28 on "Petroleum Products and Lubricants" (ISO/TC 28).

CEN/TC 19 constitutes of representatives of all CEN member states.

Summer 2004, the Netherlands Standardisation Institute (NEN) held the TC 19 secretariat. Mr. Carel A.F. Stapel, (ExxonMobil), then chaired CEN/TC 19 and the secretary function was fulfilled by Mr. Ortwin Costenoble (NEN).

Summer 2004 there were 14 working groups (WG) under the auspices of CEN/TC 19, of which the following 4 might be of special interest for IEA/AMF:

- WG 21 Specification for unleaded petrol
- WG 23 Specification for automotive LPG
- WG 24 Specification for automotive diesel
- WG 25 Specification for FAME used as fuel for heating oil

Furthermore, CEN/TC 19 has two expert groups on a non-formal base, so-called watching groups. One is watching industry activities on fuel cell vehicles. The second group is a precision expert group that assists in judging new precision data of test methods being used in specifications and EU directives.

During 2003/2004, TC 19 has also received a mandate of the EU-commission to work on a standard on ethanol fuels for blending up to 5% in gasoline. Parallel to this, a workshop agreement is on its way concerning ethanol fuel for flexible fuel vehicles (FFV), E85. Finally, a mandate from the EU-commission is prepared for CEN, concerning a feasibility study about hydrogen for fuel cells.

3.4.1 Scope, objectives and mission of CEN/TC 19

The scope and objectives of CEN/TC 19 are defined as:

Standardization of methods and measurement, sampling and test, terminology and specifications and classifications for petroleum products, and non-petroleum based fuels, lubricants and hydraulic fluids; specifically the standardization of automotive fuels and bio fuels, (fire resistant) hydraulic fluids and bitumen.

Preparation and publication of standards for the downstream oil industry covering the naturally occurring materials as well as the products derived from processing of these natural materials. The standards include those for characterizing the product quality, for quality measurement and for operational procedures, e.g. quality monitoring system for fuels.

Standards for the sector are needed to facilitate the regional and worldwide trade of petroleum products by providing:

- A common terminology, to avoid misunderstanding between trade partners.
- Common and precise methods of sampling and test, to avoid double sampling and testing in evaluating the quality of a product.
- Common measurement methods, to avoid double testing in evaluating the quality of a product.
- Product classification and specification when, due to character of the trade, it is preferred to have these in publicity available reference documents rather than in individual contracts between supplier and purchaser.
- Common operational procedures, to avoid differences in checking of the quality of a product.

Relevant market parties in relation to petroleum products working for CEN are primarily the following:

- The downstream petroleum industry.
- Purchaser/users of petroleum products.
- Industries related to the different fields of applications of petroleum products, e.g. the car/engine industry.
- The road construction industry.
- Governmental institutions and (independent) laboratories.

With an increasing interest in so called alternative or advanced motor fuels, new parties on the market are (bio-) ethanol and FAME producers, hydrogen fuel producers, MTBE/ETBE producers and fuel cell producers.

CEN/TC 19 has defined the following activities for the next 5 years:

- To provide, for European parties, a platform for discussion on the standardization for every area of the sector (e.g. relative needs, alignments, deviations) as well as on the implementation and use of (European) standards.
- To elaborate any standards requested by EC, or needed without formal EC-request, in view of EC Directives, in particular specifications standards for automotive (bio-) fuels in relation to Directive 98/70/EC and revision 2003/17/EC of this Directive for the year 2005.
- To elaborate standards eliminating commercial trade barriers between the European countries on the request of users/applicants and producers, and for other petroleum products and non-petroleum based products, e.g. hydraulic fluids.
- To develop any European standard needed for reference in other European standards of CEN/TC 19, specifically methods for sampling tests.
- To develop any European standards for new "European" subjects (e.g. bio fuel for use as heating oil, fuel based on regenerated used oil, fuel cell vehicle liquids, etc.), when enough CEN members find it more efficient or necessary to draft an European standard rather than (a) national standard(s).

The political and legal environment for standardization of automotive fuel specifications and test methods are given by European Directive 98/70/EC of the European Parliament (with a suggested amendment 2003/17/EC) and of the council relating to quality of petrol and diesel fuels amending Council Directive 93/12/EC. This means that any change of European legislation on the requirements concerning the quality parameters of petrol and diesel (influencing the car emission values) requires immediate revision of the corresponding specification standards. Furthermore, the European discussion on the stimulation of the use of bio fuels sets further goals for the industry and therefore may create the need for new standards.

3.4.2 Participation in CEN/TC 19`s standardization work

There are different "levels" to participate (or observe) in CEN/TC 19. One way for national experts is to contact the relevant National Standardization Institute who can nominate the person as an expert. That might be the best way in case someone wants to participate in more than one of TC 19´s working groups. Another way for national experts to participate is through the National Standardization Institute and being a member of the Institute's National Mirror Committee. Mirror committees are set up on national base to deal on a national level with the issues dealt with by TC 19 and to prepare national standpoints concerning issues that will be brought up for decisions in TC 19.

TC 19 and its working groups maintain liaisons with other TCs and working groups inside CEN, with ISO committees and working groups, and also with other groups/organizations outside CEN. Liaisons are maintained with organizations with whom exchange of information is judged beneficial for either or preferably both parties. Present liaisons are CEN/TC 139,

ISO/TC 28, ISO/TC 35, ACEA, AEGPL, CEC, EUROPIA, CONCAWE, UPEI and CETOP (group 6 on hydraulic fluids).

The table below presents an overview of these liaisons.

INTERNAL

Committee	Title	Liaison with
CEN/TC 139	Paints and Varnishes	JWG Flash Point

EXTERNAL

ISO

Committee	Title	Liaison with
ISO/TC 28	Petroleum Products and Lubricants	TC 19
ISO/TC 35	Paints and Varnishes	JWG Flash Point

OTHERS

Organization	Liaison with
ACEA	WG 21, WG 23, WG 24
AEGPL	WG 21, WG 23
CEC	WG 21, WG 24
CETOP	WG 28
CONCAWE	WG 21, WG 24
EUROPIA	WG 21, WG 24
UPEI	WG 24, WG 31

3.5 External Technical Liaisons

As pointed out above, experts to technical committees are usually nominated by CEN`s members: the national standardization institutes. However, for an organization representing European and/or global interests, it is possible to set up a liaison with a Technical Committee. Such a liaison organization has the right to provide input to the work of the liasing committee, but this liaison does not have the right to vote. The mode of working is mainly an exchange of basic documents, including new work item proposals and working drafts.

A liaison my also appoint experts to working groups in the field of its competence and experiences. In such a case the appointed expert may contribute to the work in the group with his or her special competence and experiences, for example in the production of draft proposals for specification standards or standards for sampling and test methods.

3.5.1 Criteria for technical committee liaison organizations

The approval of a technical liaison is considered, only when the following criteria are met:

- The relevance of the proposed liaison and the nature of the assistance to be provided by the organization concerned are clearly demonstrated with regard to the CEN work in question.
- There is a real need for such assistance and it is positively sought by CEN members to support their efforts within the technical body in question.
- There is a realistic expectation that such assistance will be willingly given by the organization concerned without delay.
- The organization concerned widely covers the relevant market.
- The organization concerned is representing European interests.
- At least companies or national organizations from four CEN member countries are members of the organization.
- The membership of the organization is open to all CEN member countries.

3.5.2 Procedures and administrative routines for an application for a technical liaison

A presumptive technical liaison sends -after preparatory contacts with the TC in question- its application for a liaison to CEN´s technical board (BT). The technical board inquires at the TC and also sends the application out to all national standardization institutes represented in the TC, for their comments. If there is no clear objection to accept the organization as a liaison, the BT takes a decision about the liaison by a simple majority, non-weighted, voting.

There is no official form for an application but there is some information that certainly has to be included in an application, to enable the assessment according to existing criteria. The following documents/information should be made available for the CEN/BT:

- A statement showing the organization's intention to support the work of the CEN/TC and/or the organization's intention to participate effectively in the work.
- A list of members of the organization.
- The statutes of the organization.

It is also recommended to include in the application a description of the kind of information/expertise that the organization can contribute to the TC.

One reason why TC 19 might reject an application for a liaison is if the organization applying for liaison could become a competitor to TC 19 and the work performed under the frame of TC 19.

If the decision concerning a new liaison is connected to any kind of requirements that have to be fulfilled by the liaison, these requirements shall be stated in the decision.

After the Technical Board has decided to accept an organization as a technical liaison, all further contacts with the liaison and all administrative routines, like for example maintaining or dispending membership of the liaison, are delegated from the Technical Board to the TC. Decisions about maintaining or dispensing a liaison are questions for the TC assembly (that meets every second year). When a liaison is dispensed, the TC in question informs the Technical Board and also all working groups under the TC about the decision, so no further technical experts are appointed from the organization in question.

After the Technical Board has received an application, it will take approximately 6 months to take a decision. In principal, a decision will be taken at one of the four Technical Board meetings per year. However, it is also possible for the Technical Board to take an intermediate decision about a liaison by correspondence.

After a positive decision about a liaison is taken, there are some basic obligations for the liaison to fulfil, besides the requirements stated in the decision about liaison. These basic obligations are:

- The liaison shall appoint a contact point/person for the co-operation between the liaison and the TC. The TC will register this person as Liaison Officer.
- The liaison shall exchange or provide information on the existence of documents relevant to the liasing TC.
- The Technical Committee demands a written report from the liasing organization, well before the TC meeting that is held every second year. In the report, the liaison shall describe what has been done by the organization on its own and what has been done in co-operation with the TC, in the areas that are relevant for the TC.

Besides the obligations, there are of course also rights for the liaison. These rights are:

- To receive all information that is exchanged between the TC secretariat and its members.
- To provide input to the work of the liasing TC, but the liaison does not have the right to vote.
- To be informed about new work item proposals and new international regulations
- To appoint experts (technical officers) to the Working Groups (WG) of the TC. A decision by the liaison to send experts to a WG shall be sent to the convenor of the WG.

The convenor of a Working Group can refuse to accept a proposed expert, but this rarely happens. If necessary, a formal decision concerning this topic has to be taken by the TC.

When a Working Group has a broad scope, the liaison might appoint different experts for certain parts of the work. This also implicates that each expert only has to attend certain meetings of the WG.

The liaison does not have to pay a fee to the TC. The member state hosting the secretariat is responsible for the funding of the secretariat and the TC`s work. However, one can say that an active participation of the liaison in the TC and with experts nominated to the WGs, this can be considered as a form of funding the work.

Decisions to set up new WGs are taken at the TC meeting every second year. However, in between the TC meetings there is a possibility to start work on an item in a temporary Task Force (TF). If desirable, a TF can later be changed into a working group by the TC meeting.

3.5.3 IEA/AMF in liaison with TC 19

As described above, it is not possible for IEA/AMF to become a full member of CEN or CEN/TC 19, since membership is restricted to national standardization organizations. For

organizations such as IEA/AMF, CEN recommends and also has the procedures to establish a liaison.

With reference to discussions with TC 19 secretary Ortwin Costenoble, it can be stated that TC 19 normally is interested in new liaisons, as long as the new liasing organization is likely to be able to contribute in TC 19 and its Working Groups.

It seems to be positive for TC 19 if IEA/AMF`s contribution to TC19 not only includes issues on alternative fuels but also includes advanced fuels. Different areas in the fields of advanced and alternative fuels in which TC 19 somewhat is lacking expertise are inter alia:

- Management, policy, strategies.
- Differences between national standards (for example temperature dependence).
- National regulation and jurisdiction.
- National opinions on different standards or need for standards.
- Issues related to new fuels and/or additives.

Besides experts on advanced and alternative fuels TC 19 would, according to Mr. Costenoble, also appreciate contributions from experts on test engines, inter laboratory tests, long term perspective engine tests, data on advanced and alternative fuels, and literature research.

If IEA/AMF sends in an application for a liaison, TC 19 most likely would ask for a presentation of IEA/AMF at the next TC 19 meeting in June 2005. This presentation should include IEA/AMF's scope and vision and it should include the purpose of the liaison.

In case IEA/AMF becomes a liaison to TC 19, it is most likely that TC 19 first would request at least some of the reports produced under the framework of IEA/AMF as background information. The need for such background information is steadily increasing, in line with the increasing demand on and also increasing use of alternative fuels. Further it is likely that TC 19 in the future might consult IEA/AMF concerning specific research and development projects in the area of standardization of alternative and advanced motor fuels or issues closely related to this area.

Earlier, TC 19 has proposed and executed projects when requested by member states or mandated by the EU-commission. This seems to be slightly changing these days. TC 19 tends to more and more change to a working situation where the “TC itself” initiates proposals for projects and/or standards. This concerns projects that most likely will come up on the agenda even though they are not yet requested by member states or the EU-Commission. In line with that it might also be possible for IEA/AMF to propose different kinds of projects to the TC 19 secretariat. The secretariat can forward these proposals to the TC 19 meeting for discussion and decision.

Finally, TC 19´s secretary Mr. Costenoble has declared an interest to discuss the possibility to have IEA/AMF as organizer of future workshops and seminars. As described above, the work in TC 19 more and more seems to change from just production of EN-standards -which is a rather slow and lengthy process- to new kinds of technical papers like for example Technical Reports, Technical Specifications and Workshop Agreements. It might be possible for IEA/AMF to play a role here and contribute to the work on production of this new kind of papers and agreements, but IEA/AMF can also play a role in other kinds of workshops and seminars on request of TC 19. This is an issue for further discussions with the TC 19

secretariat and the TC 19 assembly, when eventually discussing an application for a liaison with TC 19.

4. The international Organization for Standardization – ISO

4.1 Introduction

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies, and is a non-governmental organization. The mission of ISO is to promote the development of standardization and related activities in the world. ISO's technical work results in the publication of international standards. These standards are market driven and include involvement of all interested parties. The implementation of the standards is voluntary. ISO is made up of approximately 145 members, each representing one country.

A member of ISO is the national body most representative of standardization in its country. Two types of membership exist: P-members and O-members. P-members are obliged to actively participate and exercise full voting rights in a technical committee and/or policy committee of ISO. O-members receive documentation and are entitled to participate in meetings. O-members may also vote in any technical committee and policy committee of ISO, and their comments must be considered, but their vote is not counted in the final results.

ISO also has two other types of membership: correspondent members and subscriber members.

- A correspondent member is usually an organization in a country that has not yet a fully developed national standards activity. Correspondent members do not actively take part in the technical and policy decision work, but they are entitled to be kept fully informed about this work.
- A subscriber membership is for countries with very small economies. Subscriber members pay reduced membership fees that nevertheless allow them to remain in contact with international standardization.

Organizations that want to participate in the work of ISO can be accepted as liaison members to one of ISO's technical committees. ISO has four different categories for liaison. These are described in sub section 4.3.

The European counterpart to ISO is CEN, the European Committee for Standardization. CEN's Technical Committee 19 "Petroleum Products, Lubricants and Related Products" is the counterpart of ISO's Technical Committee 28 "Petroleum Products and Lubricants".

4.2 Structure and management of ISO and ISO's standardization work

ISO's principal officers are its President and Secretary-General. As of March 2004, Oliver R. Smoot (USA) was ISO President and Alan Bryden was ISO Secretary-General (and Chief Executive Officer).

ISO is governed by a General Assembly, constituted by a meeting of the Officers (such as the President and Secretary-General) and delegates nominated by the member bodies. Correspondent and subscriber members may attend as observers.

The operations of ISO are governed by the Council, consisting of the Officers and eighteen elected member bodies. The Council appoints the Treasurer, the twelve members of the Technical Management Board (TMB), and the chairmen of the policy development committees. The Council also decides on the annual budget of the ISO Central Secretariat (CS).

As of March 2004, the member bodies of the Council were ABNT (Brazil), AFNOR (France), ANSI (USA), BSI (United Kingdom), DIN (Germany), EOS (Egypt), IRAM (Argentina), JISC (Japan), MASM (Mongolia), NEN (Netherlands), NSAI (Ireland), NSF (Norway), SAC (China), SAI (Australia), SIST (Slovenia), Spring SG (Singapore), TCVN (Viet Nam), and TSE (Turkey).

The technical work of ISO is highly decentralized, carried out in a hierarchy of approximately 2900 technical committees (TC), subcommittees (SC) and working groups (WG). As of March 2004, there were 187 active technical committees.

ISO's central secretariat is located in Geneva, Switzerland. The central secretariat's main activity is to ensure the flow of documentation to and from members and liaisons, to clarify technical points with secretariats and chairmen, and to ensure that the documents submitted as draft international standards to the ISO members for voting, and approved by the technical committees, are published. The responsibility for administering an ISO technical committee or a subcommittee and its work is often delegated to one of the participating national standards bodies.

The ISO standard development procedure can be divided into three phases. In the first phase the technical scope of the future standard is defined. This phase is primarily carried out in working groups, which comprise technical experts nominated by interested national bodies.

Once agreement has been reached on the technical aspects to be covered in the standard, the second phase, which is the consensus-building phase, can start. The work in this phase includes negotiations concerning the requirements to be included in the standard. The end result of phase 2 is a draft International Standard (DIS).

Finally, the third phase comprises the formal approval of the resulting draft International Standard. The acceptance criteria stipulate approval by two-thirds of the ISO members that have participated actively in the standards development process, and approval by 75 % of all members that vote.

After approval of the standard, the agreed text is published by the CS as an ISO International Standard.

4.3 Liaisons

ISO technical committees, subcommittees, as well as external organizations working in similar or related fields, can establish and maintain liaisons with other technical committees and/or subcommittees.

ISO has the following categories for liaison:

- Category A: Organizations that make an effective contribution to the work of the technical committee or subcommittee for questions dealt with by this technical committee or subcommittee. Such organizations are sent copies of all relevant documentation and are invited to meetings. They may also nominate experts to participate in a working group (WG) or project team (PT).
- Category B: Organizations that have indicated a wish to be kept informed of the work of the technical committee or subcommittee. Such organizations are sent reports on the work of a technical committee or subcommittee.
- Category C: Reserved for ISO/IEC JTC 1 (Information technology).
- Category D: Organizations that have indicated a wish to participate in the work of a WG or PT. Experts nominated by such organizations are sent copies of relevant documents and invited to meetings by the convenor of the WG/PT concerned.

4.4 ISO's Technical Committee 28 "Petroleum Products and Lubricants"

4.4.1 Introduction

ISO/TC 28 "Petroleum Products and Lubricants" is the technical committee that at present also deals with standardization issues related to alternative fuels, both fossil based and renewable fuels (but excluding hydrogen technologies). ISO/TC 28 constitutes representatives of 24 P-members, 45 O-members and three correspondent members.

The American National Standardization Institute (ANSI) is responsible for the ISO/TC 28 secretariat. As of Spring 2004, ISO/TC 28 was chaired by Dr. James W. Bover (ExxonMobil, USA) and the secretariat function was fulfilled by Mrs. Paula Watkins [American Petroleum Institute (API), USA].

There are six subcommittees (SC) under the auspices of ISO/TC 28:

- SC 1 Terminology
- SC 2 Dynamic petroleum measurement
- SC 3 Static petroleum measurement
- SC 4 Classifications and specifications
- SC 5 Measurement of light hydrocarbon fluids
- SC 6 Bulk cargo transfer, accountability, inspection and reconciliation

Every SC has its own secretariat, in the same way as the TC. Additionally, advisory groups are linked to the secretariats of ISO/TC 28 and SC 4. The advisory groups have been established to give guidance to the Chairman and Secretary on matters relating to management of the work program of ISO/TC 28 and its SCs, and to SC 4 on the interpretation of generic ISO/TMB and ISO/CS rules and policies in the ISO/TC 28 context.

Currently, the six SCs under ISO/TC 28 have each approximately three active working groups (WG), in different areas of responsibility of the respective SC. Of these six subcommittees, SC 4 seems to be the SC with the highest relevance for IEA/AMF. Today, there are eleven active WGs under the auspices of SC 4, of which the following seem to be of particular interest to IEA/AMF:

- WG 1 Classifications and specifications of petroleum products and lubricants – General
- WG 6 Classification and specifications of marine fuels
- WG 8 Classification and specification of LPG
- WG 12 Two stroke cycle gasoline engine oils

4.4.2 Objectives, mission and strategies of ISO/TC 28

ISO/TC 28's mission is:

To develop value-added International Standards of high technical integrity for commerce in the oil industry, excluding those covering physical processing, but including transportation from source to process site and to end-users.

- Preparation and publication of standards for the oil industry, upstream of the oil refinery, covering quantity measurement of crude oil and, to a limited extent, quality measurement.
- Preparation and publication of standards for the oil industry, downstream of the oil refinery, including those for characterising products quality, for quantity measurement and for operational procedures.

The main areas of activity are:

- Quantity measurement

  - New technology of instrumentation;
  - More accurate measurement of losses;
  - New operational procedures;
  - New tables of basic physical properties of feedstock and components.

- Quality assessment

  - New analytical technology;
  - Extension of scope of existing standards to unconventional components and products;
  - New elements/compounds/properties requiring measurement and quantification;
  - Continuous upgrading of hazard and risk assessment;
  - Standards for conformity assessment systems;
  - New/modified standards to meet lower detection limits.

To achieve its objectives, ISO/TC 28 has adopted the following strategies:

- Implement a project management approach to standards development;

- Ensure appropriate international participation;
- Ensure performance from working group (WG) participants;
- Provide a meaningful recognition program for ISO project leaders and working group convenors;
- Obtain as broad as possible input on working drafts prior to circulating as committee drafts;
- Meet the needs of National and Regional Standards Bodies to facilitate their adoption of ISO standards without modification;
- Avoid duplication of effort within ISO and IEC;
- Recognize and account for behavioural and cultural differences in work force selection and management;
- Provide training for chairman, convenors, project leaders, working group experts and other interested parties;
- Clearly communicate the business benefits of ISO/TC 28;
- Ensure that translation does not delay progress of documents;
- Do everything possible to allow the ISO Central Secretariat to publish the TC and SC documents quickly.

To meet the defined objectives, ISO/TC 28 and its subcommittees have published 188 standards, 7 Technical Reports and 2 Technical Specifications. 43 of these standards are under revision and 54 new standards are under development.

4.4.3 Participation in ISO/TC 28's standardization work

Similar to CEN/TC 19, there are different “levels” of participation in ISO/TC 28. A technical expert can be nominated to ISO/TC 28 by his national standards body, either as a representative on, for example, an ISO working group, or as a member of that country's national committee which “mirrors” the work of the ISO TC or SC. Mirror committees are set up on a national basis to deal with the issues covered by TC 28, and to prepare national standpoints concerning issues that will be brought up for decisions at TC 28 plenary meetings.

ISO/TC 28, its working groups, its subcommittees, and the working groups of the subcommittees, can each maintain liaisons with other TCs, SCs and WGs inside ISO, but also with CEN committees and working groups and other groups/organizations outside ISO.

Liaisons established between ISO/TC 28 and other ISO committees and external committees/organizations were the following in Spring 2004:

INTERNAL

Committee/Subcommittee	**Title**
ISO/TC 22	Road vehicles
ISO/TC 35	Paint and varnishes
ISO/TC 39	Machine tools
ISO/TC 47	Chemistry
ISO/TC 48	Laboratory Glassware
ISO/TC 48/SC 1	Volumetric instruments

ISO/TC 48/SC 4	Density measurement instruments
ISO/TC 69	Applications of statistical methods
ISO/TC 69/SC 6	Measurement methods and results
ISO/TC 86	Refrigeration and air-conditioning
ISO/TC 86/SC 8	Refrigerants and refrigeration lubricants
ISO ISO/TC 91	Surface active agents
ISO/TC 123/SC 2	[Plain bearings] Materials and lubricants, their properties, characteristics, test methods and testing conditions
ISO/TC 131	Fluid power systems
ISO/TC 147	Water quality
ISO/TC 147/SC 5	[Water quality] Biological methods
ISO/TC 156	Corrosion of metals and alloys
ISO/TC 158	Analysis of gases
ISO/TC 192	Gas turbines
ISO/TC 193	Natural gas

External

CEN

Committee	**Title**
CEN/TC 19	Petroleum products, lubricants and related products

IEC

Committee	**Title**
IEC/TC 10	Fluids for electro-technical applications

OTHER

Organization	**Title**
CETOP	European Oil-Hydraulic & Pneumatic Committee

4.5 Procedures and administrative routines for an application to establish a liaison with ISO

When an external organization wishes to establish a liaison, the application is sent to the relevant TC and/or SC secretariat. In the case of applications sent to the ISO Central Secretariat, they are forwarded to the relevant TC/SC secretariat for consideration.

There is no standard form for applications, but certain information should be included to enable an adequate assessment according to relevant criteria. The following information should be made available by the organization that is applying for liaison membership:

- A statement with a description of the organization, its purpose and goals.
- A statement showing the organization's intention to support the work of ISO or the relevant ISO/TC or SC.
- A list of member countries/organizations.
- The statutes of the organization.

For Category A or B liaison, the secretary of the TC or SC concerned carries out by correspondence a full consultation of the P-members of the committee and informs the ISO Central Secretariat of the results. If any negative votes are submitted, this is dealt with on a case-by-case basis by discussion in the advisory group or at a TC/SC plenary meeting. In the case of unanimous approval by the P-members, the TC/SC secretary can informally agree to establish the liaison and notify the TC/SC accordingly. However, liaisons have to be formally confirmed by the ISO Chief Executive Officer and are centrally recorded and reported to the Technical Management Board. Category D liaisons are submitted to the Technical Management Board for approval.

After a TC or SC has received an application to establish a liaison, it takes approximately 3 months for it to be reviewed and approved, if there are no negative votes or any other reasons for detailed discussions. If negative votes are submitted, the time from application to decision may be much longer in order to resolve any outstanding issues. This is dependant upon when the advisory group can discuss it (perhaps by conference call) or on the timing of the next TC/SC plenary meeting (ISO/TC 28 meets every two years; the advisory group meets every year).

After the decision to establish a new liaison is taken, the liasing organization nominates a representative to assist in presenting the organization's views on the work of the committee (A-liaisons only) or working group concerned (A- and D-liaisons only).

The liaison representative shall also be prepared to assist in:

- Reviewing documents circulated in the committee, when of interest to the organization.
- Provide feedback and progress reports, in both directions, when appropriate.
- Participate in reviews of the work of the committee (A-liaisons only) or working group concerned (A- and D-liaisons only) on matters within the competence of their own organization.
- Participate in meetings of the committee (A-liaisons only) or working group concerned (A- and D-liaisons only).

Depending on the type of liaison (A- B- or D-), relevant documentation is sent out to the liasing organization. An A-liaison will receive copies of all relevant documentation and is also invited to meetings. Reports on the work of a TC or SC are sent to B-liaisons. D-liaisons receive copies of relevant WG documents and are invited to meetings of the WG or PT concerned. A-liaisons also have the possibility to propose new work items. However, no form of liaison gives the representative the right to vote.

There are no fees associated with establishing a liaison. The TC or SC secretariats are funded by the member state/organization responsible for the secretariat.

Committees review their external liaisons on a regular basis and propose to the ISO Central Secretariat cancellation of liaisons that are no longer effective or relevant. Such reviews are carried out either during plenary meetings or during review of the TC/SC annual reports, at the end of each year whichever comes first.

ISO's directives clearly state that the basis for a liaison shall include exchange of basic documents, including new work item proposals and working drafts. It is also clearly stated that liaisons shall:

- Operate in both directions, with suitable reciprocal arrangements.
- Technical committees and subcommittees shall seek the full and, if possible, formal backing of the organizations having A-liaison status for each International Standard in which the latter are interested.

4.6 IEA/AMF in liaison with TC 28

As described earlier, it is not possible for IEA/AMF to become a member of ISO since this is reserved for the "national body most representative of standardization in each country". However, ISO does co-operate with external organizations in the form of liaisons, in a similar way to that of CEN. There are different forms of liaisons depending on the kind of organization, but also depending on the level of involvement/activity the organization would prefer.

Given the scope of ISO's different technical committees, ISO/TC 28 "Petroleum Products and Lubricants" seems to be the ISO TC with the objectives, mission and strategy, most in line with the scope and goal of IEA/AMF. Under TC 28, Subcommittee 4 "Classifications and specifications" again seems to be the most relevant subcommittee for co-operation with IEA/AMF.

According to ISO/TC 28's Secretary, Mrs. Paula Watkins, ISO/TC 28 would likely be interested in having an organization like IEA/AMF as a liaison. Since ISO/TC 28 has not yet started working on alternative fuels, it might facilitate IEA/AMF's role as a liaison if IEA/AMF is initially open to work on topics in the field of advanced motor fuels, and not only on alternative motor fuels.

There is already a clear indication that ISO/TC 28 could use the help of IEA/AMF in finding relevant experts for working groups with competence in the area of advanced/alternative motor fuels. Also, when it comes to collect and analyse data about alternative fuels, it might be helpful for ISO/TC 28 to have IEA/AMF as an experienced partner to handle this kind of issue.

Even if there is little or no subject matter on which to report by the liaison, ISO/TC 28 does not want to have liaisons that do not actively take part in the work of the TC. Some kind of short annual report concerning activities that have been carried out in the field of the ISO/TC 28 scope and objectives is appreciated.

Mrs. Watkins also emphasizes that ISO and ISO/TC 28 prefer to see communication in both directions as much as possible and not in a one-way fashion. Organizations/liaisons that do not actively review documentation, do not attend meetings, or do not take part in the operational work of working groups, could be subject to the liaison being suspended after a certain period of time. The list of ISO/TC 28 liaisons used to be rather extensive, but after a review a couple of years ago, most of the liaisons were discontinued due to lack of active participation. On the other hand, Mrs. Watkins also emphasizes that the exchange of information/documentation should be restricted to documents of importance for both ISO/TC 28 and the liaison, in order to avoid work hours and resources being spent on areas outside ISO/TC 28 and the liaison's common interest.

During the contacts between annex XXVII and herself, Mrs. Watkins has clearly expressed that it is important that the liaison's representative is a person who has time and funds available for the co-operation with ISO/TC 28. It should not be just a name on paper without any real possibility of exchanging information, reviewing documents, participating in meetings (at least the TC meeting every two years), etc. Even if the liaison, at least to begin with, wants to keep efforts for co-operation on a low level, it is important to realize that time and funds have to be reserved for the co-operation.

Depending on how involved IEA/AMF wants to be in the work of ISO/TC 28, different levels of liaison, as described earlier, can be chosen. For example, a D-liaison means just a one-time engagement in a specific work item, while A- and B-liaisons also obtain information on all new work items, with the possibility of participating in the development of these new work items. It is convenient to be an A- or B-liaison, since these liaisons always receive information about, and requests to, participate in meetings, and they have also the possibility to review and comment on documents in the area of the liaison's competences and experiences.

It has already been mentioned that it is possible to become a liaison to a SC without being a liaison to the relevant TC to which the SC reports. It is, for example, also possible to become a D-liaison to a WG that reports to the TC, to become an A-liaison to a SC under the TC, or even to a WG under the SC, and so on.

If IEA/AMF submits an application for establishing a liaison, ISO/TC 28 will most likely ask for a presentation on IEA/AMF and its scope, vision, etc., including specifying the purpose of such a liaison, at a TC 28 plenary meeting. Probably ISO/TC 28 will also ask for some documentation and/or reports prepared by IEA/AMF, to get an impression of the topics IEA/AMF has been dealing with and the result of its work. This may also give hints for the type of questions that might be forwarded to IEA/AMF in the future.

Since ISO/TC 28 has not been engaged in carrying out workshops so far, currently there seems to be no need for help from IEA/AMF in organising workshops for ISO/TC 28. However, Mrs Watkins could see the possibility of arranging workshops in the future and she also sees the possibility of asking IEA/AMF for help in that case.

5. Co-operation with ISO and CEN

5.1 Background

During recent years, the content of work on alternative fuels has start changing from a technical oriented approach with a focus on production, distribution, use and vehicle technology, towards strategic issues with a focus on policy and management. One reason is that fuel production- and engine technology have reached a level that is sufficiently mature to be introduced on the consumer market, even though further technical improvements will still be necessary. Another reason for this change might be a growing political interest to introduce the alternative fuels on the market, with the purpose to reduce the emissions of greenhouse gases and to secure the supply of energy by using national produced energy carriers as far as possible.

Because of these developments, new items with relevance for people inside as well as outside IEA/AMF might be for example:

- How to get the alternatives out on the consumer market.
- How to increase people's awareness and acceptance of these fuels.
- How to make the oil companies accept distribution of these fuels in their existing systems.
- How to make vehicle/engine manufactures accept the use of these fuels (in neat and/or in blended form) in their vehicles/engines.

As a result of this change in general direction of the work on alternative fuels (on both national and international level) also IEA/AMF`s work has started changing from a technical oriented perspective to a more consumer/market oriented strategic one. In a couple of years this shift might be even more accentuated. For the moment, the direction of IEA/AMF's work is discussed in preparing the new 5-year strategic plan.

IEA/AMF´s annex XXVII on standardization is, to a greater extent than many of the previous annexes, market oriented. Standardization of alternative fuels is not just important but it is required to get them accepted by oil companies and vehicle/engine manufacturers. This acceptance is absolutely necessary to get the alternatives on the consumer market.

Annex XXVII can also contribute to give IEA/AMF more exposure in the international arena. One option is to offer IEA/AMF´s gathered knowledge and experiences in the field of alternative fuels to actors like CEN and ISO.

5.2 Co-operation partners and form of co-operation

The result of IEA/AMF annex XXVII phase 1 shows clearly that in the international arena there is an interest in IEA/AMF`s competence, experiences and its network. Both CEN/TC 19 and ISO/TC 28 have stated that the competences and experience of IEA/AMF might be useful for these two technical committees working on standardization of fuels and lubricants.

Even though the names of these standardization committees imply that they are mainly focused on petroleum products, they are also interested in alternative fuels. During 2003, for example CEN/TC 19 has changed its visions and views and stated in their business plan to directly include items about alternative fuels/bio fuels in their scope of work.

Today CEN/TC 19 for example includes in their scope and objectives:

- Standardisation of non-petroleum based fuels lubricants and hydraulic fluids; specifically the standardization of automotive fuels and bio fuels.

CEN/TC 19 also includes in its mission:

- To develop any European standard for new "European" subjects (e.g. bio fuel for use as heating oil, fuel based on regenerated used oil, fuel cell vehicle liquids etc).
- To elaborate any standards requested by the EC, or needed, without formal EC-request, in view of EC-directives, in particular specification standards for automotive (bio-) fuels in relation to directive 98/70/EC and revision 2003/17/EC of this directive for the year 2005.

CEN/TC 19 concludes that:

- With an increasing interest in so called alternative or advanced motor fuels, new parties on the market are (bio-) ethanol and FAME producers, hydrogen fuel producers, MTBE/ETBE producers and fuel cell producers.

ISO does not have this kind of clear statements in their policy documents yet, but referring to the secretary of ISO/TC 28, Mrs. Paula Watkins, alternative fuels are an issue for ISO/TC 28 and their interest for alternative fuels is continuously increasing.

As described in chapters 3 and 4 it is not possible for IEA/AMF to become a member of CEN or ISO or its relevant committees. However, it is possible to become a so-called liaison to CEN /TC 19 and ISO/TC 28 or ISO TC 28´s relevant sub-committees and working groups. Being a liaison would certainly increase IEA/AMF`s possibility to spread its knowledge, competence, experiences and expand its network to other actors, or rather stakeholders, with an interest in promotion of alternative fuels. IEA/AMF's knowledge and competences are today maybe not so well known to these actors as they should be or deserve to be.

A liaison with these organisations would probably help IEA/AMF to develop in line with the proposed strategic objectives set out in the new draft strategic plan:

- **Information and Membership**: To gather, evaluate and disseminate information on advanced motor fuels and to act as a clearing-house on related information. Provide an easy-access platform for interested parties to become member of IEA/AMF.
- **Co-operative R&D, deployment and dissemination:** To create, maintain and make use of networks among partners involved in research, development, demonstration and deployment related to advance motor fuels.
- **Market and general co-operation:** To facilitate large-scale market deployment of advanced motor fuels by removing technical, economical and political barriers.

As a liaison to ISO/TC 28 and/or CEN/TC 19, a certain amount of extra work would have to be done by IEA/AMF. This work has to be taken care of in a proper and for CEN/TC 19 and ISO/TC 28 valuable way.

The secretaries of both organisations have clearly stated, without making any formal commitments, since the decision has to be taken by their respective assemblies, that an application for a liaison would be welcomed and probably finally accepted. But they have also expressed clearly that they do not want to see passive liaisons. Both organizations have recently gone through their list of liaisons and those organisations that have not reacted on documentation or did not attend meetings for a longer period of time have been dispended. The secretary of ISO/TC 28 has also stressed that the contact person in a liaison (liaison officer/representative) must be a person with time reserved for the specific areas of work and contacts with ISO/TC 28.

However, it is considered important to mention that the time that IEA/AMF has to be spent on this work as a liaison can be limited.

5.3 Tasks under a liaison

The work that has to be undertaken by IEA/AMF, as a liaison is approximately the following:

- Read and, in case of interest for IEA/AMF, react and comment on relevant distributed papers/information.
- Send a short annual or biennale report on the topics that IEA/AMF has been dealing with and on the work carried out, in the area of standardization of alternative fuels.
- Participate in the organizations assembly, every second year.
- React on new work items and appoint experts for new working groups, when found of interest for IEA/AMF or when IEA/AMF could contribute to the work in a substantial way.

The secretary of IEA/AMF or a person or company specially selected for this task could handle the first three items mentioned above. Experts preferably would be appointed by IEA/AMF on proposal and/or request by one or some of the IEA/AMF participants.

The time to be spent on this work, for the secretary or a specially appointed person (the three first items above), may be expected to be not more than two to three weeks per annum and per organization.

The workload of experts (the forth item above) is very much depending on the work item itself and on the competence and experiences of the appointed expert, so no general statements on the workload can be made. This should of course be discussed together with every decision to appoint an expert.

5.4 Costs for being a liaison

There is no annual fee to be paid for a liaison with CEN or ISO. All costs for the technical committee secretariat will for example be paid by the nation/organisation hosting the secretariat. However, costs will occur when time has to be spent on the activities mentioned in the previous sub section. A first estimate for the workload is approximately 2 to 3 weeks per annum and per organization, as already mentioned in sub section 5.3. In case of liaisons to both ISO and CEN, the total workload will be 4 to 6 weeks.

The total costs will be depending on the hourly rate of the person in charge. When an hourly rate of 110 Euros is assumed, the total annual work hour costs will be in the range of 9 000 to 13 000 Euros for co-operation with each one of CEN/TC 19 and ISO/TC 28. Additionally, there will be costs for expenses like travelling. The cost for these expenses could roughly be estimated to be in the range of 1000 to 2000 Euros for co-operation with each of these organizations, depending on if it is a year when the assembly will meet or not.

However, if IEA/AMF would choose to co-operate with both ISO/TC 28 and CEN/TC 19, it might be possible to decrease the total number of working hours somewhat, because of synergetic effects.

In addition to this, time and cost for the work done by IEA/AMF experts in sub committees and working groups, item 4 above, have to be allocated. The amount of this work can range from zero to a very extensive contribution, depending on the decisions by IEA/AMF. A "normal" participation as expert in a WG probably requires one to two weeks of work per year. But it might also depend on the question itself and if the expert shall or will be paid by IEA/AMF or by the nations/organisations that put forth the experts.

5.5 Application for liaison

An application for a liaison to ISO/TC 28 should be sent to the secretariat of ISO/TC 28, while an application for a liaison to CEN/TC 19 should be sent to CEN`s Technical Board.

There are no standard forms for application to either ISO/TC 28 or CEN/TC 19, but the following information about the applicant should be made available to CEN/TC 19 and/or ISO/TC 28, for example in, or as appendices to, the application letter:

- A statement with a description of the organization, its purpose and goals.
- A statement showing the organization's intention to support the work of ISO/TC 28 or CEN/TC 19.
- A list of member countries.
- The statutes.

The time between an application has been sent and a decision is made will probably be between 3 to 6 months, as long as there is no real objection against accepting the applicant. If CEN/TC 19 or ISO/TC 28 hesitates to accept the applicant, the issue might have to be discussed at an assembly meeting and then the time from application to decision may be much longer since a next assembly meeting has to be waited for.

5.6 Organization of workshops

CEN/TC 19 has already carried out different kind of workshops.

The work in CEN/TC 19 tends to change from production of EN-standards to new kinds of technical papers like for example Technical Reports, Technical Specifications and Workshop Agreements. The preparation of such papers/reports does not necessary have to be carried out in working groups. New “meeting” forms, such as workshops, could as well serve as a discussion forum or at least serve as a start up meeting for the production of such papers/reports.

It might be very well possible for IEA/AMF to play a role in this work and to contribute to the framework on standardization of alternative fuels as an arranger of such workshops on the request of CEN/TC 19. IEA/AMF has good prerequisites and should probably be well accepted by the actors.

The secretary of CEN/TC 19, Mr. Ortwin Costenoble, has primarily declared an interest concerning IEA/AMF as an arranger of workshops but this issue will be discussed in more detail with the secretary of CEN/TC 19 if an application for a liaison will be made.

ISO/TC 28 has not been engaged in carrying out workshops so far. So currently there seems to be no need for help in this matter from IEA/AMF. However, in the future such arrangements may have to be made and then it is possible that ISO/TC 28 asks IEA/AMF, as a liaison to ISO/TC 28, for help in organizing the arrangements.

6. Organizational matters

6.1 Background

Until today IEA/AMF has, with one exception, carried out its work in the form of voluntary projects, called annexes. These annexes are funded by the participants and are separated from the funding of IEA/AMF itself including the secretary services. The only exception was the AFIS annex on Information Exchange; annex XXIV, focused on the production of an IEA/AMF information letter. This annex was funded through the common fund, and because of that it was so to speak mandatory for all participants.

Other work has been carried out through funding from IEA/AMF´s common fund as well, but these activities have never been the size of an annex. These activities have rather been restricted to for example participation on behalf of IEA/AMF in meetings, seminars or workshops that were related to IEA/AMF´s work.

As long as the scope of work is rather restricted, for example to detailed technical issues, it is convenient for an organization like IEA/AMF to base its work on voluntary, separate projects. These may be projects that focus on detailed issues as for example specific emissions from vehicles running on neat FAME, cold start emissions from the use of gasoline blended with ethanol, performance of Otto engines running on compressed methane, etc. Although IEA/AMF was set up to gain advantages by co-operating, the interest for each individual project might differ substantially between the participants because of national differences, so sometimes it can be difficult to get consensus among all IEA/AMF members for new projects/annexes.

However, as described in chapter 5, the current situation seems to be such that the need for projects on technical improvements of alternative fuel systems is not of the highest priority at the moment. Even though there is a need for further improvements on the technical side, today the best available technology is often good enough to bring the alternatives to the consumer market. There is also a growing political will to increase the use of alternative fuels. In Europe for example the establishing of the EU directive on the promotion of bio fuels shows this. This will put pressure on the actors to increase the supply of alternative fuels. In line with that, the actors need more information and advice on a strategic level, for example on how to manage a growing alternative fuels demand.

With this in mind, it seems obvious that the interest for strategy and management research projects will increase, while the number of technical projects will decrease, at least for a couple of years. When a certain level of market share is reached, there must have been taken clear political decisions concerning taxation and other subsidies on production and use of alternative fuels. Perhaps also agreements between the actors and between actors and politicians have to be reached. The interest for further technical improvements, for example how to increase production efficiency and cost effectiveness, probably will be increasing again afterwards but for the near future a clear focus on management and strategy issues seems to be most likely.

Also the nature of IEA/AMF projects (annexes) is, in line with the new situation in the world, expected to become more like policy/management projects or they might even be specific projects with the aim to promote alternative fuels

When it comes to this kind of policy and management matters, the issues to address are often of a more general nature than compared to technical issues. Certainly it is possible to talk about promotion of only bio fuels and not include fossil alternative fuels or even to focus on management on specific bio fuels as biogas (bio based methane), excluding natural gas. But to a great extent the issues to analyse and the kind of barriers to overcome are often the same for more or less all alternative fuels. Looking at for example promotion strategies or strategies for production, distribution and use of fuels from biomass, "all" alternatives tend to have much in common. For all bio fuels holds for example:

- They are more or less "new" on the market.
- They require a new or redesigned distribution system.
- They have to compete with the conventional fuels, which are already widespread and fully accepted by all parties involved, including the customers.
- To some extent they will also have to compete with each other on the same kind of raw material for production.

Because of that it would be of interest for IEA/AMF to discuss how to carry out different forms of such projects, with as far as possible all IEA/AMF members involved in these projects/annexes.

In case IEA/AMF also wants to bring the results of its different projects to the market and offer them to relevant actors and stakeholders, with the aim to contribute in a fruitful way to the promotion of alternative fuels, see chapter 5, it will be a clear strength when for example not just 3 or 4 but all IEA/AMF members have participated and supported the work that has led to the reported results. If IEA/AMF also wants to co-operate with other organizations with an interest in alternative fuels or with the aim of promoting alternative fuels, it might be advantageous to enter into such a co-operation as one organization and not as some participants to an organization.

Unanimous participation in more annexes than today will also eliminate a possible risk of splitting IEA/AMF into two or more internal groups. One for Europe and one for the rest of the world or perhaps one for USA and Canada and one for Japan and future participants from countries in the same area of the world as Japan. A "development" that in the long run might threaten the existence of IEA/AMF, since the advantages of global co-operation will be replaced by regional groups that don't necessary need IEA/AMF as a base for co-operation.

6.2 Organization of co-operation

If IEA/AMF decides to apply for a liaison to ISO/TC 28 and/or CEN/TC 19, IEA/AMF first has to decide in which format the liaison will be carried out. There seem to be two different options.

One option for organizing a co-operation with ISO/TC 28 and/or CEN/TC 19 is to continue annex XXVII or to establish a new annex for this purpose.

If IEA/AMF chooses this option, the next question to deal with is if it will be a voluntary or "mandatory" annex. As described in the 'background' section, a mandatory annex seems to be

advantageous for this kind of issues and also for co-operation with external organizations. The third issue to discuss is which person or company will be appointed as operating agent.

In case of choosing the annex option, it will also be important to establish and decide on rules for the operating agent's acting on behalf of this IEA/AMF annex. The reason is that the operating agent in contacts with the secretariats of ISO/TC 28 and CEN/TC 19 -as well as when representing IEA/AMF at assemblies or other meetings- has to be sure about the framework for his/her acting. It should also be clear on which issues he or she is free to take his /her own decisions, and for which kind of issues he or she has to go back to IEA/AMF to discuss which standpoint has to be taken.

Examples of rules to discuss and consider are for example:

- Issues that the operating agent is free to, on behalf of IEA/AMF and as much as possible in line with a given IEA/AMF standpoint, give an official IEA/AMF standpoint opinion.
- Issues that the operating agent has to consult the chairman/secretary about before giving an official IEA/AMF standpoint.
- Issues that the operating agent has to consult the ExCo-meeting about before giving an official IEA/AMF standpoint about.
- The type of, but also the number of meetings with CEN/TC 19 and/or ISO/TC 28 or its subgroups or working groups that the operating agent can attend without searching advice from the chairman/secretary.
- The kind of information/reports that the operating agent can send to CEN/TC 19 and/or ISO/TC 28 without contacting the chairman/secretary.
- How to handle budgetary issues.

The other option for co-operation with ISO/TC 28 and/or CEN/TC 19 is to establish a permanent function inside IEA/AMF with the purpose to carry out the co-operation. This could either be done by the secretary or by a new function, preliminary called for example “assistant secretary”. One issue to analyse in case the workload is put on the secretary's shoulders is of course to check if the secretary has the time and also the knowledge necessary to carry out this work. The secretary's competence is of course dependent on the person being the secretary. The rules guiding the secretary or assistant secretary are important, but perhaps not as important as in the case where IEA/AMF gives the right to act on behalf of IEA/AMF to a person or company so to speak “outside” IEA/AMF.

Although both options have their advantages and disadvantages, it seems that the “annex solution” might be the most flexible one and therefore it might be the solution of choice.

The IEA/AMF ExCo should also decide on the number of experts to send to working groups under ISO/TC 28 and/or CEN TC 19 and on the number of work items to be engaged in. The same goes for the level of engagement in a work item or in a working group.

When IEA/AMF decides to send an expert, it is important that IEA/AMF has a clear standpoint on the issues that will be discussed in the working group that the expert will attend, and also that the expert has clear instructions concerning the views he/she has to present. Since both ISO/TC 28`s and CEN/TC 19`s “life cycles” are structured in two year terms, usually there will be sufficient time available for IEA/AMF to discuss new work items and other proposals from ISO/TC 28 or CEN/TC 19. These issues can be discussed at least one

ExCo-meeting before taking a decision to participate or not. The same time schedule will also be valid for discussing and formulating reactions on documents etc.

When the operating agent or the assisting secretary is on mission on behalf of IEA/AMF and reacts on documents and/or inquiries or gives a statement at a meeting/assembly, the IEA/AMF delegates have to be informed about relevant and important issues, decisions and statements made. When issues come up that are beyond what the operating agent or the assistant secretary can decide, and the time to the next ExCo meeting is too long to wait for it, it should be possible for the operating agent or the assistant secretary to take this up with the chairman for, if possible, a chairman's decision.

6.3 Funding of co-operation

The funding of an annex can be solved in the same way as for existing annexes, while the funding of an assistant secretary has to be solved either through an increased payment into the common fund or by establishing a special ISO and/or CEN co-operation fund.

The amount of funding will depend on how much time IEA/AMF wants to spend on the liaison. But as mentioned in chapter 5, both ISO/TC 28 and CEN/TC 19 expect a minimum level of participation and expect a contact person with time reserved for co-operation. A liaison is expected to require at least two weeks per annum and per organisation. In years that an assembly meets, up to one extra week per liaison will be needed.

As calculated in chapter 5, this might result in annual costs between 9 000 and 13 000 Euros for co-operation with each one of CEN/TC 19 and ISO/TC 28 plus annual cost for expenses in the range of 1000 to 2000 Euro for each one of the organizations.

When the number of experts and the level of engagement are decided, this will serve as a base for calculations on the time and funds that are needed for the engagement. One way to fund the work of the experts is to have them paid through the funding of IEA/AMF´s co-operation with ISO/TC 28 and/or CEN/TC 19, but then beyond the funding mentioned above.

Another way might be to let the organisations that employ the expert/experts, acting on behalf of IEA/AMF, cover (most of) the costs for these persons, so IEA/AMF pays nothing or just a part of the costs of the experts.

However, some extra expenses may rise from this engagement that IEA/AMF could pay, as for example travel and hotel expenses for the experts involved.

7. Conclusions

In phase 1 of IEA/AMF annex XXVII, among other things, the interest in CEN/TC 19 and ISO/TC 28 for co-operation was analysed. The results from phase 1 of IEA/AMF annex XXVII have been summarised in the report of that phase and also in chapter 1of this report.

Concerning co-operation with CEN/TC 19 and/or ISO/TC 28 the conclusions were that:

- CEN/TC 19 and ISO/TC 28 have shown interest in co-operating with IEA/AMF, with the purpose to use IEA/AMF`s competence, knowledge and experience on alternative fuels.
- The form of such a co-operation had to be further discussed.
- Among people engaged in standardization of vehicle fuels there is an interest to have some kind of informal discussion forum where issues related to the standardization of alternative fuels could be discussed, free from formal negotiations.
- Such informal discussions would preferably be arranged/organised as workshops.
- Such workshops could be arranged on the request of ISO/TC 28 and CEN/TC 19.
- IEA/AMF has good prerequisites for organising such workshops.

In phase 2 of annex XXVII, the secretariats of ISO/TC 28 and CEN/TC 19 have been contacted by telephone and e-mail, and they have been visited for further discussions about co-operation. The secretaries of ISO/TC 28, Mrs Paula Watkins, and CEN/TC 19, Mr Ortwin Costenoble have been thoroughly interviewed. The information gained has been analysed, both concerning the current and as far as possible also the future situation, as well as concerning formal prerequisites for co-operation between IEA/AMF and ISO/TC 28 and/or CEN/TC 19. Information about CEN/TC 19 and ISO/TC 28 and the formal prerequisites for co-operation have been described in chapter 3 and 4 and are discussed in chapter 5. The IEA/AMF internal organization for co-operation with ISO/TC 28 and CEN/TC 19 has been discussed in chapter 6.

With this information and the discussions as a background, it has been possible to draw conclusions about if, why and how IEA/AMF could co-operate with ISO/TC 28 and CEN/TC 19. These conclusions are presented below.

Co-operation with ISO/TC 28 and CEN/TC 19 is recommended since it will:

- Be in line with the new IEA/AMF strategic plan.
- Give IEA/AMF a good opportunity to bring its knowledge and experience to market actors and to disseminate useful information about alternative and advanced fuels.
- Help IEA/AMF to spread information about IEA/AMF, its visions and goals.
- Improve IEA/AMF´s exposure, which may attract new members.

The conclusions concerning co-operation with ISO/TC 28 and CEN/TC 19 are the following:

- Both ISO/TC 28 and CEN/TC 19 (the secretaries of these organisations) have declared an interest in co-operation with IEA/AMF. An application from IEA/AMF to these organizations would be welcomed and would likely be accepted by the organisations.

- It is not possible for IEA/AMF to become a full member of these organizations, but IEA/AMF may become a so-called liaison. CEN/TC 19 has just one form of liaison, called technical liaison, while ISO/TC 28 has three different forms of liaison that may be suitable for IEA/AMF. Which form of ISO/TC 28 liaison to choose is at first a matter of how engaged IEA/AMF wants to be in the work of ISO/TC 28.

- As a liaison to CEN/TC 19, IEA/AMF can ask for participation in CEN/TC 19´s working groups. The most relevant working groups for IEA/AMF seem to be:

  - WG 21 Specification for unleaded petrol
  - WG 23 Specification for automotive LPG
  - WG 24 Specification for automotive diesel
  - WG 25 Specification for FAME used as fuel for heating oil
  - WG 26 Fame related fuel test methods

- It is also possible for IEA/AMF to become a liaison to ISO/TC 28´s sub committees and working groups under these subcommittees.

  The most relevant ISO/TC 28 sub committee for IEA/AMF seems to be SC number 4 “Classifications and Specifications”.

  The most relevant working groups for IEA/AMF under SC 4 seem to be:

  - WG 1 Classifications and specifications of petroleum products and lubricants – General
  - WG 6 Classification and specifications of marine fuels
  - WG 8 Classification and specification of LPG
  - WG 12 Two stroke cycle gasoline engine oils

- A liaison to CEN/TC 19 and/or ISO/TC 28 does not require paying an annual fee to these organisations.

- Both organisations are keen not to have passive members/liaisons. This implicates that IEA/AMF has to be active as a member.

- Examples of activities that have to be carried out by IEA/AMF when being a liaison are for example to:

  - Read and when useful react on relevant documentation sent out by the organizations.
  - Be prepared to participate in relevant working groups and to send experts to these working groups.
  - Briefly report annually or biannually to the organizations, concerning relevant activities carried out by IEA/AMF.
  - Participate in relevant meetings and -as a minimum- participates every second year in the assembly meeting.

- A first estimate of the minimum time needed for this work is approximately two to three weeks per annum and per organization, which would result in costs in the range of about 9000 to 13000 Euros per year and per organization. In addition to that there will be costs for expenses like travelling, in the range of 1000 to 2000 Euros per year and per organization.

- It is difficult to make an estimate of the time needed for participation in working groups since it depends very much on the level of engagement IEA/AMF wants in different kinds of work items and working groups. Decisions probably have to be made on a case-by-case basis.

- The alternative fuel standardization work of experts operating on behalf of IEA/AMF can be funded in different ways. It might be funded either by IEA/AMF or by the nation/organization putting forth the expert. The funding of experts can also be decided on a case-by-case basis.

- An application for a liaison can be made in the form of a short letter to the organisation in question. Proposals for such application letters are enclosed in appendices 1 and 2 of this report. Together with the application, information about the participants in IEA/AMF and the statutes of IEA/AMF has to be enclosed, see appendices 3 and 4.

- The time between the moment an application has been sent and the moment a decision is made is usually between a couple of months and half a year. ISO/TC 28 seems to need a somewhat shorter period going from application to decision than CEN/TC 19. If there are members in the organizations that are hesitant or against having IEA/AMF as a liaison, a decision may have to be taken by the assembly and this might prolong the time needed to take a decision. In such a case the time from application to decision will depend on the time period until the next assembly meeting.

- CEN/TC 19 has shown an interest in having IEA/AMF as an arranger of workshops.

If IEA/AMF decides to apply for a liaison to ISO/TC 28 and/or CEN/TC 19, the internal organization has to be set up by the IEA/AMF ExCo, perhaps in consultation with the IEA secretariat and the IEA/AMF desk officer.

Issues to be considered then are for example:

- Shall Co-operation with ISO/TC 28 and/or CEN/TC 19 be carried out in the form of a continuation of annex XXVII, a new annex or as a part of the general IEA/AMF activities?

- If the co-operation will be carried out as an annex, it has to be decided if the annex will be a voluntary or mandatory annex.

- If the co-operation will be carried out as an annex, it has to be decided whom to appoint as operating agent.

- If the co-operation will be carried out as a general IEA/AMF activity, it has to be decided if the secretary; an “assistant secretary” or an expert contracted by IEA/AMF will do the actual work.

- The IEA/AMF ExCo also has to decide on the funding of the co-operation, which means funding the time/costs that an operating agent or the secretary/assistant secretary has to spent on the co-operation.

- The level of activity in workgroups and also which work groups to participate in has to be decided as well as the time/cost that experts operating on behalf of IEA/AMF have to spend on the co-operation.

8. Topics for decisions and further work

Based on all information and data collected in phase 1 and phase 2 of IEA/AMF annex XXVII and based on the analysis of this information and data, the following proposal are put forward to the participants of phase 2 of this annex.

- IEA/AMF is recommended to apply for a liaison to both ISO/TC 28 and CEN/TC 19, since such a liaison:

  - Has advantages for IEA/AMF in disseminating information and results of its work on alternative and advanced fuels,
  - Will increase worldwide awareness of IEA/AMF's work and its vision and goals.
  - May increase the interest among new nations/organizations for membership of IEA/AMF.

- At the next ExCo meeting (Sao Paulo, October 19 – 21, 2004) IEA/AMF is recommended to discuss liaisons to ISO/TC 28 and CEN/TC 19 and to decide to apply for a technical liaison to CEN/TC 19 and an A- or D-liaison to ISO/TC 28.

- In case IEA/AMF decides to apply for a liaison to ISO/TC 28 and/or CEN/TC 19, the IEA/AMF ExCo has to decide, preferably at their next meeting:

  - The organizational forms to carry out a liaison to both ISO/TC 28 and CEN/TC 19. This can be done either as a continuation of annex XXVII, as a new annex or as a new work item under IEA/AMF.
  - If the participation shall be voluntary or mandatory for all IEA/AMF participants.
  - The level of participation.
  - The number of working groups to participate in.

- In case IEA/AMF decides to apply for a liaison to ISO/TC 28 and/or CEN/TC 19, the IEA/AMF ExCo is recommended to decide at their next meeting to:

  - Carry out these liaisons in the form of mandatory annexes.
  - To decide on a suitable level for participation in relevant working groups for the next coming 2 years period.

  A mandatory annex is recommended because ISO/TC 28 and CEN/TC 19 prefer to co-operate with the whole group and not with just some IEA/AMF members.

  A mandatory annex is also recommended since the co-operation will:

  - Strengthen and improve IEA/AMF's position worldwide.
  - Improve the dissemination of information and increase people's awareness of the IEA Implementing Agreement on Advanced Motor Fuels.
  - Be advantageous for all IEA/AMF member nations/organisations.
  - Eliminate the risk of a dividing IEA/AMF in two or more internal regional groups and because of that avoiding the threat that this might cause IEA/AMF future existence.

- IEA/AMF is recommended to discuss and decide on the rules for the operating agent responsible for the proposed co-operation annex as described above.

- IEA/AMF is recommended to have a first discussion on how to organise workshops in the area of standardization of alternative fuels, on request of CEN/TC 19 at first and later also for ISO/TC 28.

Abbreviations

ACEA	European Automobile Manufacturers Association
AMF	Advanced Motor Fuels implementing agreement of the IEA
BA	Administrative Board, CEN
BT	Technical Board, CEN
CEN	Comité Européen de Normalisation (European Committee for Standardization)
CNG	Compressed Natural Gas
CS	Central Secretariat (ISO)
CWA	CEN Workshop Agreement
DIS	Draft International Standard (in ISO)
DME	Dimethyl ether
ELOT	Hellenic Organization for Standardization
EN	European Standard
ETBE	Ethyl-Tertiary-Butyl-Ether
EU	European Union
ExCo	Executive Committee
FAME	Fatty Acid Methyl Ester
GTL	Gas-to-liquids
HEV	Hybrid and Electric Vehicles technologies and programmes implementing agreement of the IEA
IAF	International Accreditation Forum
IEA	International Energy Agency
IEC	International Electrotechnical Commission
IFP	Institut Français du Pétrole, France
ILAC	International Laboratory Accreditation Cooperation
ISO	International Standardization Organization
JSA	Japanese Standardization Association
LCA	Life Cycle Analysis
LEVO	Organization for the promotion of low emission vehicles, Japan
LNG	Liquefied Natural Gas
LPG	Liquefied Petroleum Gas
MC	Management Committee, CEN
MTBE	Methyl-Tertiary-Butyl-Ether
NEDO	New Energy and Industrial Technology Development Organization, Japan
NGV	Natural Gas Vehicle
OECD	Organization for Economic Cooperation and Development
PAC	Pacific Accreditation Cooperation
PT	Project Team (ISO)
RME	Rapeseed Methyl Ester
SAE	The Society of Automotive Engineers (USA)
SC	Sub Committee
SMDS	Shell Middle Destillate Synthesis
SME	Soybean Methyl Ester
SNV	Schweizerische Normen-Vereinigung
TC	Technical Committee

TF Task Force (CEN)
TMB Technical Management Board (ISO)
TR Technical Report
TS Technical Specification
WG Working Group

Appendices

Appendix 1

Application for liaison – ISO/TC28 –

Dear Mrs. Watkins,

As secretary of the International Energy Agency's Implementing Agreement on Advanced Motor Fuels (IEA/AMF) and on behalf of IEA/AMF I would like to inform you that IEA/AMF is interested to become liaison to ISO/TC 28.

IEA/AMF started as a joint research program on advanced motor fuels set up by some IEA member states as a response to the oil crisis in 1973. In 1984 the Implementing Agreement was formally established and was named Alcohol Motor Fuels. The principal aim was to promote energy security through development of alcohol based substitutes for oil-derived motor fuels.

In recent years the IEA has broadened its mandate to preservation of the environment, particularly the integration of environmental and energy issues. In line with that the research programme has also broadened its mandate to environmental issues, and also from being restricted to Alcohol Motor Fuels to include at first all Alternative Motor Fuels and finally all kinds of Advanced Motor Fuels, including reformulated gasoline and diesel oil.

From the start IEA/AMF has initiated twenty-seven different projects (annexes) of which six are active today:

- Annex XVI Biodegradable Lubricants
- Annex XXII Low temperature Particles
-

- Annex XXV Non-Road Engines
- Annex XXVI Oxygenates in Diesel
- Annex XXVII Standardisation of Alternative Motor Fuels

According to IEA/AMF`s strategic plan for 1999-2004 more emphasis will be put on demonstrations and preparation for market introduction as the fuels approach market readiness.

In the draft strategic plan for 2005 – 2009 IEA/AMF has defined the following three strategic objectives:

- Information and Membership: To gather, evaluate and disseminate information on advanced motor fuels and to act as a clearing-house on related information. Provide an easy-access platform for interested parties to become member of IEA/AMF.

- Co-operative R&D, deployment and dissemination: To create, maintain and make use of networks among partners involved in research, development, demonstration and deployment related to advanced motor fuels.
- Market and general co-operation: To facilitate large-scale market deployment of advanced motor fuels by removing technical, economical and political barriers.

As a consequence of the change to a more market relevant approach IEA/AMF in April 2002 decided to establish a project concerning standardisation of alternative fuels, IEA/AMF annex XXVII. The annex has been accomplished in two different phases with the Swedish consultant company Atrax Energi AB as operating agent. A lot of people, and among them yourself, but also the secretary of CEN/TC 19; have been interviewed as part of the work under annex XXVII. The result of annex XXVII has been reported in two separate reports that have been sent to you.

One important reason to establish annex XXVII was to find out if and how IEA/AMF could co-operate with ISO/TC 28, with the purpose to contribute to the work on standardisation of alternative fuels, using its competence and more than 20 years of experience in the field of alternative fuels. The reason behind this thought of co-operation and contribution is that:

- Standardisation is a necessity for large-scale use of the alternative fuels on the consumer market.
- Standardisation of alternative fuels demands other experiences and competences than the standardisation of conventional fuels.
- Without standards the manufacturers of engines and vehicles will never be able to accept the use of alternative fuels in their engines and vehicles.

The result of annex XXVII has, as IEA/AMF sees it, clearly showed that there is a need for specialist competence concerning alternative fuels in the work on standardisation of alternative fuels. Another result is that it seems suitable for IEA/AMF to co-operate as a liaison with ISO/TC 28 and its subcommittees/working groups. In this co-operation IEA/AMF is willing to contribute with its knowledge and experiences in the work on relevant items concerning standardisation on alternative but also on advanced motor fuels. IEA/AMF has taken notice of the requirements on liaisons as stated in ISO/IEC Directive part 1 and IEA/AMF is ready to accept them.

Enclosed to this letter you will find a list of participating nations/organisations, the statues of IEA/AMF, the new strategic plan 2005 - 2009 and the latest annual report concerning IEA/AMF`s work and actions during 2003.

You are requested to consider this letter as an application from IEA/AMF to become an A-liaison to ISO/TC 28.

Please let me also inform you that a similar application for liaison has been sent to the secretary of CEN/TC 19, Mr Ortwin Costenoble, NEN, The Netherlands.

If you need any further information concerning IEA/AMF, our goals and objectives, or if you wish to discuss IEA/AMF as a liaison to ISO/TC 28 please do not hesitate to contact me. You can also contact our chairman Mr. Steve Goguen, Department of Energy, USA, or the operating agent of annex XXVII, Mr. Björn Rehnlund, Atrax Energi AB, Sweden.

I am looking forward to your response on our application for a liaison and I am hoping that you and ISO/TC 28 can respond positively.

Yours sincerely,

Claës Pilo

Secretary of IEA/AMF

Appendix 2

Application for liaison – CEN/TC19 –

Dear Mr./Mrs

As secretary of the International Energy Agency's Implementing Agreement on Advanced Motor Fuels (IEA/AMF) and on behalf of IEA/AMF I would like to inform you that IEA/AMF is interested to become liaison to CEN/TC 19.

IEA/AMF is a joint research program on advanced motor fuels set up by some IEA member states as a response to the oil crisis in 1973. In 1984 the Agreement was formally established and was named Alcohol Motor Fuels. The principal aim was to promote energy security through development of alcohol based substitutes for oil-derived motor fuels.

In recent years the IEA has broadened its mandate to preservation of the environment, particularly the integration of environmental and energy issues. In line with that the research programme has also broadened its mandate to environmental issues, and also from being restricted to Alcohol Motor Fuels to include at firs tall Alternative Motor Fuels and finally all kinds of Advanced Motor Fuels, including reformulated gasoline and diesel oil.

From the start IEA/AMF has initiated twenty-seven different projects (annexes) of which six are active today:

- Annex XVI Biodegradable Lubricants
- Annex XXII Low temperature Particles

- Annex XXV Non-Road Engines
- Annex XXVI Oxygenates in Diesel
- Annex XXVII Standardisation of Alternative Motor Fuels

According to IEA/AMF`s strategic plan for 1999-2004 more emphasis will be put on demonstrations and preparation for market introduction as the fuels approach market readiness.

In the draft strategic plan for 2005 – 2009 IEA/AMF has defined the following three strategic objectives:

- Information and Membership: To gather, evaluate and disseminate information on advanced motor fuels and to act as a clearing-house on related information. Provide an easy-access platform for interested parties to become member of IEA/AMF.
- Co-operative R&D, deployment and dissemination: To create, maintain and make use of networks among partners involved in research, development, demonstration and deployment related to advanced motor fuels.
- Market and general co-operation: To facilitate large-scale market deployment of advanced motor fuels by removing technical, economical and political barriers

As a consequence of the change to a more market relevant approach IEA/AMF in April 2002 decided to establish a project concerning standardisation of alternative fuels, IEA/AMF annex XXVII. The annex has been accomplished in two different phases with the Swedish consultant company Atrax Energi AB as operating agent. A lot of people, and among them yourself, but also the secretary of ISO/TC 28, have been interviewed as a part of the work under annex XXVII. The result of annex XXVII has been reported in two separate reports that have been sent to you.

One important reason to establish annex XXVII was to find out if and how IEA/AMF could co-operate with CEN/TC 19 with the purpose to contribute to the work of standardization of alternative fuels using its competence and more than 20 years of experiences in the field of alternative fuels. The reason behind this thought of co-operation and contribution is that:

- Standardisation is a necessity for large-scale use of alternative fuels on the consumer market.
- Standardisation of alternative fuels demands other experiences and competences than the standardisation of conventional fuels.
- Without standards the manufacturers of engines and vehicles will never be able to accept the use of alternative fuels in their engines and vehicles.

The result of annex XXVII has, as IEA/AMF sees it, clearly showed that there is a need for specialist competence concerning alternative fuels in the work on standardisation of alternative fuels. Another result is that it seems suitable for IEA/AMF to co-operate as a liaison with CEN/TC 19 and its working groups. In this co-operation IEA/AMF is willing to contribute with its knowledge and experiences in the work on relevant items concerning standardisation on alternative but also on advanced motor fuels. IEA/AMF has also taken notice of the requirements on liaisons as stated by CEN/TC 19 and is ready to accept them.

Enclosed to this letter you will find a list of participating nations/organisations, the statues of IEA/AMF, the new strategic plan 2005 - 2009 and the latest annual report concerning IEA/AMF`s work and actions during 2003.

You are requested to consider this letter as an application from IEA/AMF to CEN/TC 19 to become an A-liaison to CEN/TC 19.

Please let me also inform you that a similar application for liaison has been sent to the secretary of ISO/TC 28, Mrs. Paula Watkins, API, USA.

If you need any further information etc concerning IEA/AMF our goals and objectives or if you wish to discuss IEA/AMF as a liaison to CEN/TC 19 please contact me. You can also contact our chairman Mr. Steve Goguen, Department of Energy, USA, or the operating agent of annex XXVII, Mr Björn Rehnlund, Atrax Energi AB, Sweden.

I am looking forward to your response on our application for a liaison and I am hoping that you and CEN/TC 19 can respond positively.

Yours sincerely

Claes Pilo

Secretary of IEA/AMF

Appendix 3

List of IEA/AMF participants

Country	Organisation	Delegate
Canada	Natural Resources Canada	Mr. Andy Beregszaszy
Denmark	Technical University of Denmark	Prof. Jesper Schramm
Finland	VTT Processes	Dr. Nils-Olof Nylund **(Vice Chairman)**
France	ADEME	Mr. Patrick Coroller
Italy	AgipPetroli Centro Ricerche EURON	Mr. Fulvio Giavazzi
Japan	New energy and Industrial Technology Development Organization (NEDO)	Mr. Shigeaki Tonomura **(Vice Chairman)**
Japan	Organization for the promotion Of Low-Emission Vehicles (LEVO)	Mr. Toshiyuki Shimode
Spain	IDAE	Mr. Carlos Lópes-López
Sweden	Swedish Energy Agency (STEM)	Mrs., Alice Kempe
United Kingdom	Department for Transport, Local Governments and the Regions (DTLR)	Mr. Chris Parkin
USA	Department of Energy (DOE)	Mr. Stephen Goguen **(Chairman)**

Appendix 4

IEA/AMF statues