

Report on progress and status of SAG E Recommendations taken so far

All recommendations have been sent to the TMB

General

	Recommendation	Actions
1	A distinction should be drawn between work dedicated to saving energy and work dedicated to reducing GHG emissions. While the two are linked (one can lead to the other) it needs to be underlined that there are a number of drivers for saving energy including economic and security of supply.	Recommendation establishes general principle for SAG E discussions. Further action: None needed
2	Care should be taken to ensure that International Standards are provided in time to support the metrics and calculation methods, methodologies and best practices needed to support decisions of policy makers.	Recommendation establishes general principle for SAG E discussions. Note: The TMB recently approved a policy statement on this matter for all ISO committees. Principles for Developing ISO and IEC Standards Related to or Supporting Public Policy Initiative. Further action: None needed

Terminology

4	Joint ISO/IEC work should begin as a matter of priority to develop a common international terminology in the area of energy efficiency and renewable energy sources.	Initially a dialogue was held between the Chairs of SAG E and IEC SG 1 and an early proposal was drafted (correspondence sent by Email of 28 August 2008). However the recommendation also prompted AFNOR to start to prepare a proposal for a new Project Committee. The matter was then discussed at the 2 nd meeting - see also Recommendation 16
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<p>16</p>	<p>SAG E encourages AFNOR to develop its proposal for an ISO/IEC Project Committee on Terminology in the areas of energy efficiency and renewable energy sources. The work should take into account existing initiatives such as those done by the World Bank, APP-REDGTF and CEN/CENELEC. Appropriate liaisons should also be made with relevant committees who have provided related definitions in their standards already. In the first instance the work should consider definitions for high-level, horizontal concepts.</p>	<p>In response, AFNOR (France) submitted a proposal and after a discussion with the IEC it was simultaneously circulated to the ISO and IEC memberships on the 9 January 2009 for a 3 month vote. (Letter to the ISO membership)</p> <p>In both organizations the proposal has now been approved. The TMB and IEC SMB have formally established the committee (JPC/2). The Secretariat has been assigned to AFNOR and the first meeting will be held on 28-29 January 2010 in Paris, France. ISO CS will be at the first meeting and will draw attention to the SAG E Recommendations.</p> <p>Further action: None needed.</p>
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Industrial Energy Efficiency

<p>5</p>	<p>A joint ISO/IEC group (IEC/TC 2, IEC/SC 22G IEC/C 65 and ISO/TC 184) should be established to develop standards to optimise the role of industrial automation in saving energy. A systemic approach should be taken to this work rather than concentrating on individual component parts.</p>	<p>This recommendation was sent to the Secretary of ISO/TC 184 Automation systems and integration (by Email on 4 July 2008)</p> <p>There has been no strong interest expressed in joint work in this area to date.</p> <p>Further action: None needed</p>
<p>17</p>	<p>SAG E notes that at this point in time, the standards from ISO/TC 184 (Industrial automation systems and integration) do not deal with energy efficiency. SAG E therefore feels the committee should give consideration to, and respond to, the suggestion that their future work could contribute to energy efficiency improvements in industrial processes. The committee is also encouraged to request</p>	<p>This recommendation was passed on to ISO/TC 184/SC 5 Industrial automation - Architecture, communications and integration frame as they were discussing energy and environmental issues.</p> <p>ISO/TC 184/SC 5 met on the 24 April 2009 and therefore discussed the SAG E recommendation further. The following resolution was taken.</p> <p>RESOLUTION 613 (Paris 23) – ISO ENERGY EFFICIENCY AND OTHER NEWS</p>

	<p>involvement in any future IEC workshop on the subject.</p>	<p>SC 5 thanks Atsuko Saruhashi for her presentation on ISO Technical Management Board (TMB) news, particularly focusing on the TMB-formed Strategic Advisory Group on energy efficiency and renewable power sources (SAG E) and other energy-related Project Committees (PC) that have been formed. SC 5 acknowledges that SAG E has noted that TC 184 is not currently involved in developing standards in the area of energy efficiency.</p> <p>SC 5 notes that PC 242 is developing a standard for an energy management system and that this project may have a relationship to the Japanese proposal on environmental evaluation of manufacturing systems (SC 5 Resolution 607). SC 5 invites Japan to research the PC 242 work as it prepares a new work item proposal under Resolution 607.</p> <p>Further action: None needed</p>
<p>22</p>	<p>SAG E believes there is a need for an ISO standard to harmonize industrial efficiency indicators and measurement methods for energy intensive industries. This could be based on the work of IEA.</p>	<p>This was raised by the SAG E member from Japan. This was not sent to any committees as none were mentioned and it requires further development.</p> <p>The link below is an Executive summary from an IEA report on industrial energy indicators.</p> <p>http://www.iea.org/Textbase/npsum/tracking2007SUM.pdf</p> <p>Although it is still unclear as to how these higher level concepts can become standards, the paper shows those priority industries which will be useful for further SAG E discussions on industrial energy efficiency.</p> <p>Chemical and Petrochemical Iron and Steel Cement Pulp and paper Aluminium Other non-metallic minerals and other non-ferrous metals (e.g. copper, lime, bricks, tiles and glass).</p> <p>The matter was also discussed at the 3rd meeting of SAG E. See recommendation</p>

		<p>36 below.</p> <p>Other possible TCs to involve – 6, 26, 63, 77, 138, 153, 155, 183, 189</p> <p>The SAG E Secretary has also contacted international trade associations in the Chemicals industry and Concrete and Cement industry Oil and Gas industry. Any replies will be reported at the next SAG E meeting.</p> <p>Further action: To be discussed at the Feb 2010 SAG E meeting</p>
<p>23</p>	<p>There is a need for an ISO standard for the assessment and rating of the efficiency of industrial processes. The TMB is therefore asked to encourage a proposal from a member. The SAG E offers assistance upon request.</p>	<p>Since making this recommendation the IEA/ISO/IEC workshop has been held. Industrial energy efficiency featured heavily at the workshop and discussions confirmed that the SAG E needs to develop this recommendation further.</p> <p>The matter is therefore on the agenda for the 4th meeting of SAG E in September. In preparation the Secretary has also created a map of activities showing what ISO is currently addressing and what it is not. This has been circulated as SAG E doc 17 Rev 1.</p> <p>The SAG E Secretary also sent Emails to the Secretaries of the following TCs and asked for their views and input regarding their committee and industrial energy efficiency. Any replies will be reported at the 4th meeting of the SAG E in September.</p> <p>TC 17 Steel TC 25 Cast irons and pig irons TC 28 Petroleum products and lubricants TC 67 Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries TC 71 Concrete, reinforced concrete and pre-stressed concrete TC 74 Cement and lime TC 86 Refrigeration and air-conditioning TC 102 Iron ore and direct reduced iron TC 109 Oil and gas burners TC 115 Pumps TC 117 Fans</p>

		<p>TC 118 Compressors and pneumatic tools, machines and equipment TC 131 Fluid Power systems TC 134 Fertilizers and soil conditioners TC 244 Industrial furnaces</p> <p>Further action: To be discussed at the Feb 2010 meeting</p>
36	<p>SAG E notes the TMB resolution 21/2009 and the recent discussion at the IEA/ISO/IEC workshop on the work of the World Steel Association on energy efficiency indicators for the iron and steel industry. There is also work in this area in CEN. SAG E recommends that the attention of ISO/TC 17 is drawn to these initiatives as a matter of priority.</p>	<p>ISO/TC 17 Steel as recently approved a new work item proposal for Calculation method of CO2 emission intensity from iron and steel production. The work is at an early stage (Working Draft) and will draw on the work done by the World Steel Association.</p> <p>Further actions: None needed</p>
38	<p>SAG E noting the proposal from SAC submitted as ISO/TSP 208 - Method of calculating and evaluating economic benefits of energy saving - advises SAC to submit a revised proposal to reflect the SAG E members comments on energy efficiency, deleting CO2 calculation and re-considering including economic benefits. SAC is invited to re-submit the proposal to SAG E for further comment.</p>	<p>Update can be given at the February 2010 SAG E meeting.</p>
39	<p>SAG E notes that whilst industrial energy efficiency indicators must be developed on a sector basis, it would be advantageous to establish high level principles to be followed when measuring and calculating energy efficiency (all subjects). SAG E recommends that ISO/PC 242 consider doing so once the work on ISO 50001 is sufficiently mature. The work should take</p>	<p>Further action: For discussion at the Feb 2010 SAG E meeting</p>

	<p>into account the existing IPMVP (International Performance Measurement and Verification Protocol - www.evo-world.org) and other existing work such as CEN TF 190 and US Measurement Verification Protocol.</p>	
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Combined Heat and Power

<p>8</p>	<p>A draft scope and work programme for a new ISO committee on standards for combined heat and power and co-generation should be produced.</p>	<p>After the first meeting the SAG E member for the Netherlands subsequently drafted and submitted a paper proposing a new committee for this technology. This was circulated as SAG E doc 6 Annex 1.</p> <p>The SAG E Secretary sent the paper to the Secretary of ISO/TC 192 Gas turbines because they have a current work item:</p> <p style="padding-left: 40px;"><i>ISO/FDIS 26382 Cogeneration systems -- Technical declarations for planning</i></p> <p>The Secretary of ISO/TC 192 and the Project Leader for ISO DIS 26382 indicated agreement with the paper but indicated that the TC would not work further in area as different expertise was needed.</p> <p>The SAG E Secretary also made contact with an association called World Alliance for Decentralized Energy. The responded by indicating that the organization had no standardization activity but may be interested in participating on any ISO activity in the future.</p> <p>At the same time the paper and details of the ISO/DIS 26382 were also sent to COGEN Europe, a European association promoting cogeneration. This association had been involved with CEN the European standards body to produce a CEN Workshop Agreement on Cogeneration.</p> <p style="padding-left: 40px;">CWA 14642:2003 - Electrical interface for domestic cogeneration - Requirements for distribution network connection for micro cogeneration systems for domestic use up to 16 A per phase in low-voltage distribution networks (230/400 V)</p> <p>Further action: The matter was further discussed at the 2nd meeting of the SAG E.</p>
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		See Recommendation 19 below.
19	<p>SAG E acknowledges the need for a standard on the performance evaluation / efficiency calculation of Combined Heat and Power plant. The TMB is therefore asked to encourage a proposal from a member. The SAG E would be prepared to assist further upon request (a SAG E paper is available). SAG E requests its secretary to inform relevant organizations of this recommendation.</p>	<p>This SAG E Recommendation was sent to the TMB and discussed at their meeting in February 2009. They approved the Recommendation and asked ISO CS to circulate a letter to the ISO members encouraging a proposal for standards in this area - see the TMB resolution below:</p> <p>TECHNICAL MANAGEMENT BOARD RESOLUTION 22/2009 Recommendations from the 2nd meeting of ISO Strategic Advisory Group on Energy efficiency and renewable energy sources (SAG-E)</p> <p>The Technical Management Board,</p> <p><u>Recognizing</u> the need for a standard on the performance evaluation / efficiency calculation of Combined Heat and Power plant as identified in Recommendation 19 of the 2nd meeting of the SAG-E, and</p> <p><u>Further recognizing</u> the need for an ISO standard for the assessment and rating of the efficiency of industrial processes as identified in Recommendation 23 of the 2nd meeting of the SAG-E,</p> <p><u>Requests</u> ISO/CS to issue a circular letter to member bodies to submit new work item proposals on these subjects and <u>thanks</u> the SAG-E for its offer to assist member bodies with the elaboration of such proposal.</p> <p>This matter has been raised with the IEC as it is possible there will be electrotechnical aspects. Discussions are ongoing between the Secretariats of the ISO and IEC Technical Boards on whether the work should be joint.</p> <p>Further action: Awaiting conclusion of discussions with IEC</p>

Geothermal

<p>9</p>	<p>Geothermal heating and cooling in buildings (i.e. geo-exchange – taking heat to and from the earth) is a widely used technology and should be covered by International Standards.</p>	<p>After the meeting details of national activities in Japan were submitted by the SAG E member.</p> <p>The SAG E Secretary also asked contacts Iceland for their perspective.</p> <p>The SAG E Secretary also contacted the Secretary of ISO/TC 86/SC 6 Factory-made air-cooled air-conditioning and air-to-air heat pump units. This committee had produced several standards related to the field.</p> <p>ISO 13256-1:1998 Water-source heat pumps -- Testing and rating for performance -- Part 1: Water-to-air and brine-to-air heat pumps</p> <p>ISO 13256-2:1998 Water-source heat pumps -- Testing and rating for performance -- Part 2: Water-to-water and brine-to-water heat pumps</p> <p>ISO 13261-1:1998 Sound power rating of air-conditioning and air-source heat pump equipment -- Part 1: Non-ducted outdoor equipment</p> <p>ISO 13261-2:1998 Sound power rating of air-conditioning and air-source heat pump equipment -- Part 2: Non-ducted indoor equipment</p> <p>The Chair of ISO/TC 86/SC 6 confirmed that their standards were intended to cover geothermal heat pumps so some work had been done. It is understood that these standards are widely used.</p> <p>The reply from the ISO/TC 86/SC 6 Chair indicated that - to stay in line with their scope of work - they were focused on the pumps and would not be dealing with other aspects of geothermal technology.</p> <p>The matter was again discussed at the 2nd meeting see SAG E Recommendation 20 below.</p>
<p>20</p>	<p>The SAG E secretary should compile a list of geothermal standards from Canada, Korea, China and Europe. This should be</p>	<p>On 24 November 2008, The SAG E Secretary then also wrote to the SAG E members from the countries mentioned in this Recommendation for details of any national standards they had.</p>

	<p>sent to ISO/TC 86 (Refrigeration and air conditioning) with a request that they review the list for further ideas for ISO standards to support the update and development of this geothermal technology. A report is requested for the next meeting.</p>	<p>Contacts with CEN the European Standards Body indicated that there was a European association called EGEC- European Geothermal Energy Council and further enquiries could be made.</p> <p>The CEN contact also pointed to the work of CEN/TC 341- Geotechnical investigation and testing. This committee was doing some work in relation to geothermal energy.</p> <p>The SAG E Secretary wrote to the EGEC- European Geothermal Energy Council and the IGA - International Geothermal and information on ISO was subsequently circulated to the IGA members.</p> <p>The response received indicated that:</p> <p>We should distinguish between standards for shallow geothermal (GSHP) and for deep geothermal. The shallow (consumer applications) needs standardization more urgently than the deep applications. The shallow geothermal area is end-user, consumer market (house owners).</p> <p>However in the reply it was also noted that there were major differences between US and EU practices when it came to installation and drilling and so the need for ISO standards was not clear.</p> <p>Geothermal standards were also discussed at the 3rd meeting of the SAG E. It was decided to discuss the outcomes of an IEA paper (due to be published soon) before taking any further action. The matter will therefore be discussed at the 4th meeting of the SAG E in September.</p> <p>The SAG E Member for Canada has also submitted details) of Canadian standards related to Geothermal.</p> <p>C448 Design and Installation of Earth Energy Heat Pump Systems</p> <p>C748 Direct Expansion Ground Source Heat Pumps</p>
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		Discussed at the 4 th meeting of the SAG – conclusion that no standards needed. Further actions: None needed
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Boilers and hot water

10	International Standards for calculating and labelling the efficiency of boilers are urgently needed.	This was originally raised by the SAG E member from AENOR (Spain). After a subsequent internal discussion in AENOR the matter was considered to be more regional than international. The matter was further discussed at the 2 nd meeting. See Recommendation 21
21	SAG E members are asked to make further investigations into the need for ISO standards on calculating and rating domestic hot water systems. A final recommendation will then be made at the next meeting.	Since its introduction at the first meeting, no conclusive discussions on this recommendation have been held – the question remains as to whether there is a need for an international standard for calculating and rating domestic hot water systems. The matter appears to be national and regional in nature but not international. The matter was discussed at the 3 rd meeting of the SAG in broader terms when the member for SPRING (Singapore) noted the need for standards that gave easy comparison of appliances using different fuels. Further action: None needed

Qualifications

11	An inventory of initiatives dealing with qualifications in energy efficiency techniques should be created. This could be used as an input to a future standard to assess the ability of individuals to deliver on-site energy efficiency improvements	This was originally proposed by the member from SABS (South Africa) SAG E members from South Africa and Japan subsequently provided some details of national initiatives. The SAG E Secretary also compiled a list of ISO standards related to quality and competence. This information was circulated as SAG E doc 6 Annex 3 . Further action: The matter was then discussed at the 2 nd meeting. See Recommendation 25 below.
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<p>25</p>	<p>ISO standards on the assessment, improvement or management of energy efficiency may, at an appropriate time, require supplementary standards on the competence of organizations and personnel.</p>	<p>This is a general recommendation but would be of particular relevance to ISO work around which energy services (assessment and improvement) will emerge.</p> <p>For example it is possible that once ISO 50001 is published. Discussions could take place about supporting standards on the competence of companies and their staff providing services/certification related to this standard.</p> <p>See for example:</p> <p>ISO/TS 22003:2007 Food safety management systems -- Requirements for bodies providing audit and certification of food safety management systems</p> <p>ISO 28003:2007 Security management systems for the supply chain -- Requirements for bodies providing audit and certification of supply chain security management systems</p> <p>ISO/IEC 27006:2007 Information technology -- Security techniques -- Requirements for bodies providing audit and certification of information security management systems</p> <p>ISO/PAS 30003:2008 Ships and marine technology -- Ship recycling management systems -- Requirements for bodies providing audit and certification of ship recycling management</p> <p>The recommendation was therefore sent by Email on 24 November 2008 to the Secretary of the PC for information only.</p> <p>If acceptable to the leadership of the PC 242 the matter could be raised by the SAG E Secretary at a future meeting of the PC - perhaps during 2010.</p> <p>The recommendation could also be applicable to any standards that facilitate the creation of energy services such as rating and improving the energy performance of buildings Therefore once the core work in this area is progressing the recommendation could be sent to the experts for consideration.</p> <p>Further action: To be discussed at the Feb 2010 SAG E meeting</p>
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Building

<p>12</p>	<p>A systems optimization approach is needed in the building sector whereby the building is considered from the point of view of its functionality.</p>	<p>This was originally proposed by the Member from SABS (South Africa). After a short presentation he agreed to develop a paper outlining his approach.</p> <p>To assist the member from SABS the following documents were made available</p> <p>ISO WD 11368 (EN 15603) Building environment design -- Energy performance of buildings -- Methodology to assess the overall energy and environmental impact, by using a holistic (complete) approach procedure, was sent.</p> <p>ISO 16818 Building environment design -- Energy efficiency – Terminology, to the SABS representative for assistance with the paper being written.</p> <p>There are two committees in ISO dealing with the subject of energy efficiency.</p> <p>ISO/TC 163 Thermal performance and energy use in the built environment.</p> <p>ISO/TC 205 Building environment design.</p> <p>Both committees have been successful at providing standards in their own scopes. The work of the first was largely driven by the European standards that had been developed for the European Energy performance of buildings directive (EPBD). The work of the second was largely driven by the perspectives from the heating and cooling of the building. Neither committee however has taken the systematic approach being promoted by the member from SABS.</p> <p>It was however known that there is a need for greater co-ordination between these two committees.</p> <p>The paper from the member from SABS was received and circulated as SAG E doc 6 Annex 4</p>
<p>24</p>	<p>The forthcoming discussions between the TMB secretariat and committees involved in</p>	<p>In parallel to the SAG E discussion on energy and buildings, the TMB had decided that there should be a co-ordination meeting between ISO/TC 163 and ISO/TC 205.</p>

	<p>energy use in buildings are noted. SAG E encourages the participants to take a strategic view of the whole subject to ensure current policy and market needs are addressed. SAG E also submits the paper from Mr Ian Lane, the member for South Africa, as a contribution to the forthcoming discussions.</p> <p>There is a need for ISO standards giving methodologies on the assessment and rating of buildings. The TMB and relevant ISO committees are invited to assess if this need has been fully addressed. A presentation is requested for the next meeting of the SAG. The SAG E notes that similar discussions on energy and buildings are being held in IEC SG 1.</p>	<p>A meeting was therefore arranged for 10 February 2010 and this was reported to the SAG E at their meeting on the 6-7 November 2008 leading to Recommendation 24 here.</p> <p>Recommendation 24 and the paper from the member from SABS (South Africa) was used as a basis for the meeting between ISO CS and the leadership of ISO/TC 163 and ISO/TC 205.</p> <p>At the meeting on the 10 February 09 the SAG E Recommendations and paper from the SABS representative were accepted. However there was a concern that the standardization needs identified could not be addressed due to insufficient expertise in either committee.</p> <p>Nevertheless it was agreed that a Joint Working Group to combine their expertise and move to a better co-ordination of the work should be established (TMB resolution 5/2009 see annex A)</p> <p>The Joint Working Group has now been formed and met on the 8th June 2009. Amongst the agenda items were the various SAG E Recommendations.</p> <p>SAG E should monitor the progress of the new Joint Working Group until the last SAG E meeting where a final recommendation can be made depending on progress within the Joint Working Group.</p>
<p>31</p>	<p>SAG E welcomes the discussions in the TMB and in ISO/TC 163 and ISO/TC 205 on energy in buildings and recommends that a strategic view is promoted in the whole area. The strategy should consider</p> <ul style="list-style-type: none"> • Buildings as a whole • Use of renewable energy sources • Applicability of the standards to new and existing buildings 	<p>This was passed on to the new Joint Working Group between ISO/TC 163 and ISO/TC 205 for discussion at their 1st meeting on the 8 June 2009.</p>

	<ul style="list-style-type: none"> • Assessment and rating methodologies (asset and operational) • Commissioning <p>The leadership of ISO/TC 163 and ISO/TC 205 are invited to comment on such a strategy and in particular describe how their work to date fits in and any plans they have for the future work.</p> <p>A wider consideration across ISO could also be made in future to expanding the discussion to urban developments.</p>	
32	<p>SAG E recommends that a proposal be made for an International Standard(s) giving guidance on the best practices (in energy efficiency and use of renewable sources) when refurbishing/retrofitting buildings. The work of the IEC on smart buildings should be taken into account in any subsequent work.</p>	<p>This recommendation was passed on to the new ISO/TC 163/205 Joint Working Group on Energy and buildings.</p> <p>Once work in the area of energy and buildings is up and running this recommendation can be formally discussed by the responsible group.</p> <p>A report from IEC on smart buildings is awaited.</p>
43	<p>SAG E recommends that all members make connections at the national level with those involved in the work of ISO/TC 163/205 JWG Energy in buildings, and to then report back at the next meeting if they believe all SAG E recommendations on this subject (SAG E recs 12, 24, 31 and 32) can be appropriately addressed.</p>	<p>Further action: For discussion at the Feb 2010 SAG E meeting</p>

Transport

13	ISO CS to investigate with all transport	The SAG E Secretary contacted a number of TCs in the transport sector about this
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	<p>related committees and the ITF the feasibility of an International Standard for a calculation method for the total energy use of transporting people and goods throughout the transport chain.</p>	<p>recommendation on the 22 May 2008.</p> <p>ISO/TC 20 Aircraft and space vehicles ISO/TC 22 Road Vehicles ISO/TC 31 Tyres, rims and valves ISO/TC 51 Pallets for unit load method of materials handling ISO/TC 70 Internal combustion engines ISO/TC 104 Freight containers ISO/TC 122 Packaging ISO/TC 188 Small craft ISO/TC 197 Hydrogen technologies ISO/TC 204 Intelligent transport systems</p> <p>Replies were received from ISO/TC 20, 51 and 70 indicating that there was no intention/ability to deal with calculating energy use transport.</p> <p>The ISO Deputy Secretary General also had a meeting with contacts in the International Transport Forum in May 2008. The ITF indicated interest in a standard on energy use calculation in transport.</p> <p>The matter was then discussed at the 2nd meeting of SAG E– see Recommendation 26 below.</p>
<p>26</p>	<p>SAG E encourages ISO/TC 207/SC 7 in its efforts to develop a methodology to measure GHG emissions in the supply chain. SAG E asks to be kept informed of progress and notes that the subject is very close to measuring energy use in the supply chain. The work should therefore incorporate energy efficiency concepts. SAG E recommends SC 7 establish appropriate liaisons with other ISO committees.</p> <p>The member for SCC Canada is requested</p>	<p>This recommendation was communicated to the Secretary of ISO/TC 207/SC 7 GHG</p> <p>This committee is developing a method for measuring GHG emissions in the whole supply chain. The work is at a very early stage. This is a different issue to a calculation method for energy use in the transport part of the supply chain but appears to be closely related.</p> <p>The Secretary of ISO/TC 207/SC 7 responded to confirm she would disseminate the Recommendation to the committee.</p> <p>The SAG E Secretary also sent the Secretary of 207/SC 7 a list of committees in the transport sector to facilitate the establishment of liaisons (sent by Email on</p>

	<p>to submit details of the document on reducing energy use in the transport chain for the next meeting of the SAG E. The issue of measuring the embedded energy used in the entire supply chain should be considered in future meetings of the SAG E.</p>	<p>Two liaisons have been established with ISO/TC 207/SC 7 only one of which is in the transport sector (ISO/TC 8/SC 2 Marine environment protection and ISO TC 146 Air Quality).</p> <p>A CEN committee (CEN TC 320 Transport logistics and services has however recently started a project for a standard on Methodology for calculation, declaration and reporting on energy consumption and GHG emissions in transport services (goods and passengers transport).</p> <p>A follow up Email was therefore sent to the Secretary of TC 207/SC 7 WG 2. The reply indicated that the committee now felt there would be no conflict</p> <p><i>'There will be no conflict between WG 2 and the Energy project, as Energy/Transport is only a small chapter in our standard saying that this shall be taken into account, but give no concrete information about it.'</i></p> <p>Additionally a document from Canada was circulated as SAG E 12 doc Annex 2 but this has not yet been discussed due to shortage of time at the 3rd meeting.</p> <p>Further action: Progress to be monitored</p>
<p>50</p>	<p>SAG E recommends that the work of CEN/TC 320 Transport and logistics – development of a calculation method for energy and CO2 emissions in transport - be monitored for its future applicability internationally.</p>	<p>Update requested from the CEN TC 320 secretary and his response will be reported at the SAG E Feb 2010 meeting.</p>
<p>49</p>	<p>SAG E asks the secretary to disseminate the recommendations on transport from the IEA/IEC/ISO workshop to the transport committees and report their responses at the next meeting. In particular SAG E is interested to know any plans to improve the reflection of real life driving conditions in fuel consumption standards and any plans</p>	<p>This recommendation was sent to the secretaries of</p> <p>ISO/TC 22 Aircraft and space vehicles ISO/TC 20 Road Vehicles</p> <p>Responses will be reported at the SAG E Feb 2010 meeting</p>

	to expand them to cover new types of vehicles (e.g. fuel flexible/biofuel vehicles). SAG E also asks the secretary to investigate whether ISO/TC 20 Aircraft and space vehicles, has considered a standard aimed at improving fuel use during airport ground operations.	
51	SAG E recommends that its members investigate new concepts related to best practices in transport management and urban planning with a view to having a future dialogue with new stakeholders not currently involved in ISO's transport sector. The SAG E secretary is asked to compile members' submissions for the next meeting.	Members requested for submissions by the 15 December 2009. Contribution from Canada can be seen here http://www.tc.gc.ca/eng/menu.htm

Solar energy

14	Interested members should review the standards and current work of ISO/TC 180. In particular the new project for a standard to integrate/install the solar devices into buildings is welcomed. A paper developed by interested members of the SAG E (approved by the whole group) should be sent to ISO/TC 180 for discussion.	This recommendation was passed onto the Secretary of ISO/TC 180 Solar energy The subject was discussed again at the 2 nd meeting. See Recommendation 27 below.
27	There is a need to look at solar installations as systems and component parts. Standards should take into account the end use devices and consider their integration with auxiliary or ancillary sources of energy for when there is not enough solar energy. Standards are also needed for the	This was sent to the TC Secretary of ISO/TC 180 Solar energy on. The reply agreed that more action was needed in particular from ISO/TC 180/SC 5 Collectors and other components. Currently this was a non-active subcommittee but the work on glass evacuated tubes mentioned in the SAG E Recommendation would need to be done there. The Secretary of ISO/TC 180 had wrote to the Secretary of 180/SC 5 in October 2008 asking for more action.

<p>installation, inspection and maintenance of solar systems to enhance consumer access to, and confidence in, solar technology. ISO/TC 180 (Solar power) should consider developing, or adapting existing standards, to cover all glass evacuated (vacuum) solar collectors. SAG E also asks that ISO/TC 180 review all their standards to ensure market and global relevance and report to the next meeting. ISO CS is asked to seek opportunities to promote awareness of the standards from ISO/TC 180.</p>	<p>At the last meeting of ISO/TC 180 (held jointly with CEN/TC 312 Thermal solar systems and components) a resolution was taken to carry out the revision of the collector standards (ISO 9806 parts 1-3 published in 1994 and 1995).</p> <p>The Secretary hoped to have the next meeting of the committee in South Africa in October 2009. SC 1 and SC 4 would meet at the same time and the whole event would coincide with the ISES conference (see paragraph below on promotion).</p> <p>With respect to work program it was hoped that the following projects would move forward:</p> <ul style="list-style-type: none">• Revision of ISO 9488 - Solar energy - Vocabulary• Revision of ISO 9060 - Solar energy — Specification and classification of instruments for measuring hemispherical solar and direct solar radiation• Revision of ISO 9845.1 - Solar energy — Reference solar spectral irradiance at the ground at different receiving conditions — Part 1: Direct normal and hemispherical solar irradiance for air mass 1, <p>In the future the secretary also plans to review all standards under ISO/TC 180/SC 1 Climate – measurement and data. These standards are important to the development of solar energy systems and they can be used in other fields.</p> <p>The committee currently has one work item which is listed below.</p> <p>ISO 9458-4 – Solar Power Domestic water heating systems – Characterisation by means of component tests and computer simulation.</p> <p>Promoting awareness</p> <p>Regarding promotion of the ISO work on solar energy the Secretary of ISO/TC 180 noted that there were certainly opportunities. The Chairman of ISO/TC 180 had presented papers at the last International Solar Energy Society Conference in Sydney November 2008). He would also give a presentation to the International Solar Energy Society Conference in South Africa 13-14 October. A presentation would also be given at the European Solar Thermal Conference next year.</p> <p>According to the secretary of ISO TC 180 these two conferences are the best places</p>
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		<p>to engage with industry. ISO/TC 180 members have had two articles in Solar Focus in recent years, and this year an article in the Indian Solar Energy Society Journal.</p> <p>It was also noted that the involvement of the ISO/TC 180 Secretariat in the IEA's - Solar Heating and Cooling project was supporting a proposed for international collaborative research on Solar rating and Certification. This will assist in developing harmonised standards and accreditation processes.</p>
<p>34</p>	<p>SAG E welcomes the activity in ISO/TC 180 Solar reported by the secretariat and encourages continued activity to reflect the market interest in this renewable technology. In particular ISO/TC 180 is encouraged to develop work items on the installation of solar systems into buildings e.g. the integration of solar panels into roofs (weather protection and fire safety).</p>	<p>This was sent to the Secretary of ISO/TC 180</p> <p>The Secretary of ISO/TC 180 contacted the SAG E secretary to inform him that the next series of meetings of TC 180 was being planned for 14-17 October 2009. They will be in conjunction with the ISES conference in South Africa.</p> <p>Further action: The Secretary will ask that the SAG E recommendations be put on the agenda of the October 09 meetings of TC 180.</p> <p>The SAG E Recommendations were tabled at the October 09 meeting of ISO TC 180. An extract of the meeting report is below:</p> <p>11 REVIEW OF SAG-E RECOMMENDATIONS</p> <p>The committee reviewed the recommendation of SAG-E and agreed that the Secretary should right back to ISO Central Secretariat and advise that the proposal contained in the recommendations will be covered by the resolution to form a new WG under TC 180 to initiate the revision of ISO 9806. It was also agreed that ISO/TC 180 should have a liaison with IEC/TC 82 as it was developing standards that cover PV/T collectors and cooperation on thermal collectors using PV/T and a durability test should be coordinated between the two committees.</p> <p>ISO 9806 - Test methods for solar collectors -- Part 3: Thermal performance of unglazed liquid heating collectors (sensible heat transfer only) including pressure drop</p> <p>A new work item proposal from China has now been circulated in the committee and received a positive vote: Solar energy - Evacuated solar collectors - Design, classification and test</p>

		<p>Other resolutions from the ISO/TC 180 meeting in October 09 are listed below:</p> <p>TC 180 reaffirms its previous decision to initiate NWIs for the revision of the collector's standards ISO 9806. The projects will be carried out as joint ISO/EN standards by CEN/TC 312/WG1 that will have additional membership from TC 180. The documents prepared by the joint working group will replace the current ISO 9806 and EN 12975-2 series of standards.</p> <p>ISO/TC 180 requests the Secretariat to write to IEC/TC 82 Secretariat in order to establish a close cooperation in the preparation of standards dealing with thermal collectors with integrated PV devices (PV/T collectors).</p>
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Biofuels

<p>15</p>	<p>The existing work on biofuels (solid and liquid) is encouraged. Canadian wood burning technology is of interest to developing countries and could potentially be disseminated through International Standards.</p> <p>An inventory of initiatives related to the sustainable criteria for biofuels should be developed.</p>	<p>Wood burning technology – as a response to this Recommendation the SAG E Secretary followed up with the SAG E member from CSA (Canada) and with contacts in the ISO Member body for Canada.</p> <p>Responses confirmed that there was a Wood Burning Heating Appliance Committee in Canada and this had several national trade associations involved.</p> <p>'Currently B415-1 Performance Testing of Solid Fuel Burning Appliance is under review with a publication of the revised document scheduled for October 2009. Environment Canada is providing funding for the new edition as there are new regulations for boilers and furnaces. They are now looking at the testing requirements of the standard as there are new emission levels for the larger appliances. They need to validate testing of wood burning boilers as well.</p> <p>The standard is at the national level only and CSA has not discussed or thought of it as an international standard.</p> <p>In response to Recommendation 15, AFNOR also submitted a list of standards on 5 November 2008.</p> <p>Four main standards have been elaborated and recently revised:</p>
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28	SAG E notes the ongoing ISO work to	Regarding <u>Liquid Biofuels</u> , this recommendation was passed on to the Secretariat of

	<p>develop standards for liquid and solid biofuels and encourages its member from China to make a proposal for a new committee on biogas. SAG E strongly encourages more progress on the development of standards for liquid biofuels; the lack of specifications in this area is hindering the development of the market for this fuel.</p>	<p>ISO TC 28/SC 7 Liquid biofuels. The committee has taken a resolution saying that it should not produce standards.</p> <p>ISO/TC 28/SC 7 Resolution 7/2009 Avoidance of Duplication <i>Be it resolved that ISO/TC 28/SC 7 shall avoid duplicating standards of other standards organizations. ISO/TC 28/SC 7 shall not start work in a technical area that is under development in another standards organization. If gaps in the standards portfolio are identified, ISO/TC 28/SC 7 shall bring the gap to the attention of the existing international or regional standards organizations and shall consider independent action only when these existing organizations are unable or unwilling to address the identified gap.</i></p> <p>Regarding Solid Biofuels, this was further discussed at the 2nd meeting. See Recommendation 35.</p> <p>Regarding Biogas, SAC hopes to submit a proposal for a new committee later in 2009.</p> <p>Further action: None needed</p>
<p>29</p>	<p>SAG E notes the proposal from DIN and ABNT for a standard for the sustainability criteria for biofuels. SAG E believes the growing and collecting of biomass and the subsequent conversion into different types of fuel all have sustainability implications. Sustainability in this area is difficult to define so any work should follow a stepped approach using a life cycle assessment. For example measuring CO2 emissions in the lifecycle could be a starting point. Co-ordination between the different existing technical committees involved including those involved in agriculture should be ensured if ISO does any work in this area.</p>	<p>The DIN (Germany) and ABNT (Brazil) proposal received the necessary support from the ISO members.</p> <p>However many of the comments submitted with their votes asked that the matter be studied at a preliminary level. DIN and ABNT therefore called a preliminary meeting before formally constituting the new committee.</p> <p>These were a series of Recommendations including that the TMB should formally constitute the new committee. They also requested that the new committee have its scope expanded to cover bioenergy. See selected recommendations below.</p> <p>Recommendation 01/2009 The preliminary meeting to the ISO/PC “Sustainability criteria for bioenergy” recommends to ISO/TMB to formally establish a new ISO/PC with the following title and scope:</p> <ul style="list-style-type: none"> • Title “Sustainability criteria for bioenergy”

		<ul style="list-style-type: none">• Scope <p>“Standardization in the field of sustainability criteria for production, supply chain and application of bioenergy. This includes terminology and aspects related to the sustainability (e.g. environmental, social and economic) of bioenergy.”</p> <p>Recommendation 05/2009 ISO/PC on Sustainability criteria for bioenergy recommends the following aspects be addressed in future work:</p> <ul style="list-style-type: none">• Inventory of initiatives;• Terminology;• Greenhouse gases;• Environmental aspects;• Social aspects;• Economic aspects;• Verification and auditing;• Indirect effects. <p>Another recommendation taken at the preliminary meeting indicates that the experts are fully aware of the need to co-ordinate – see below</p> <p>Recommendation 07/2009 ISO/PC on Sustainability criteria for bio-energy recommends that coordination and liaisons are sought with relevant ISO committees such as</p> <ul style="list-style-type: none">• ISO/CASCO; (ISO committee for conformity assessment)• ISO/TMB WG on Social responsibility;• ISO/TC 28/SC 7; Liquid biofuels• ISO/TC 34; Food products• ISO/TC 207; Environmental management• ISO/TC 207/SC 7; Liquid biofuels• ISO/TC 238. Solid Biofuels <p>The new committee ISO/PC 248 Sustainability criteria for bioenergy, has now been formed and will hold its first meeting during 2010.</p> <p>Further action: The SAG E Member for Israel wishes to have a general discussion</p>
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		on sustainability at a future meeting
35	SAG E notes the work of ISO/TC 238 on solid bio-fuels and asks the committee to develop the standards expeditiously.	<p>This Recommendation was sent to the Secretary of ISO TC ISO/TC 238 Solid Biofuels.</p> <p>The Secretary responded noting that resources had been limited but now a draft work programme had been circulated to the committee for approval. This contained details of the working group structure, convenors, secretaries and lists of the work items to be worked on.</p> <p>The Secretary also reported that the 2nd meeting of the ISO/TC 238 would take place in October 2009 where the Working Groups they had assembled would be asked to present first Working Drafts of their standards.</p> <p>The Secretary of ISO/TC 238 has also circulated a number of European Technical Specifications from CEN as a contribution to the first Working Drafts</p> <p>Further action: SAG E Secretary to follow up the results of the ISO/TC 238 meeting in October and to report the results at the Feb 2010 SAG E meeting</p>

Power Generation

6	International Standards are needed to calculate and disseminate best practices of energy efficiency in machinery associated with generation of electricity (example steam turbines).	
7	The need for International Standards to calculate the efficiency of different combustion processes during power generation should be assessed.	
18	The Member for DIN (Germany) is requested to give further consideration to any ISO work needed to support energy	

	efficiency policies related to power generation processes. His conclusions can be discussed with the IEC SG 1 at a future joint meeting.	
47	SAG E noting its previous recommendations 6, 7 and 18 related to power generation (at all scales), believes that a document on mechanical and combustion efficiency in electrical power generation could be useful and asks the IEC/SG 1 for their view.	Sent to IEC SG 1 secretary on the 24 th September for discussion at their next meeting. Response can be reported by the SG 1 Chair at the Feb 2010 meeting of the SAG E.

Stakeholder involvement

3	Relationships with IEA, WEC, ITF and IPPC should continue to be developed and the work and recommendations of the SAG E should be validated against the policies and priorities expressed by these organizations.	<p>The relationships between such organizations are taken care of by ISO CS. Both the IEA and the WEC were contacted at the senior level about the work of the SAG E and have nominated representatives.</p> <p>The co-operation with the IEA led to the IEA/ISO/IEC Workshop in March in Paris. Click here for results and directions for further actions of the workshop.</p> <p>The ISO Deputy Secretary General also had contacts with the International Transport Forum (ITF). This organization is a committee under the OECD dealing with a wide range of Transport issues. In 2008 they concentrated on focused on energy and reducing GHG emissions in the transport chain.</p> <p>See here for their dedicated webpage Energy in Transport</p> <p>The ITF were given a list of ISO work which was relevant to reduced GHGs in the transport chain.</p>
30	SAG E recommends that COPOLCO be invited to the next meeting and also asks that ISO CS make efforts to communicate	A COPOLCO representative was invited to attend the 3 rd meeting in March, Paris, and did so.

	<p>details of its work on energy efficiency and renewable energy sources to relevant organizations concerned with the environment and sustainability.</p>	<p>This led to Recommendation 33 below being taken.</p> <p>Regarding a communication to a wider audience this would seem to be something to be decided at the 5th meeting when the SAG E has finished its work. Other suggestions from SAG E members to promote ISO's work are welcome are welcome.</p> <p>:</p>
33	<p>SAG E welcomes the useful contributions from the guest representative from COPOLCO and recommends that COPOLCO become a permanent member of the group. In the event that the TMB agree the representative from COPOLCO is asked to submit a paper for the next meeting on consumer priorities in energy efficiency and renewable energy sources.</p>	<p>A paper from the COPOLCO representative on consumer priorities in energy is anticipated.</p>
37	<p>SAG E Recommends that UNIDO be invited as a permanent member of the group and that initial contacts to explain the work of the SAG E be made with IPCC, IRENA and GBEP.</p>	<p>UNIDO invited to the 5th Meeting.</p> <p>The SAG E Secretary made contact with IRENA and sent initial information (including the Recommendations from the 4th meeting) about the SAG E. A teleconference was offered. The contact was acknowledged and a name given for future co-ordination issues.</p> <p>Further action: The SAG E Secretary will send IRENA the SAG E recommendations after each meeting and offer an explanation. The Secretary will also make contact with GBEP once the ISO work on biofuels is sufficiently mature.</p>
45	<p>SAG E asks the secretary to disseminate COPOLCO recommendations 3, 5 and 6 (SAG E doc 21) to the relevant ISO committees and to report their responses at</p>	<p>Recommendations 3 Passed to ISO/TC 207/SC 3 Environmental labelling (7 December 2009). The reply can be reported at the Feb 2010 meeting.</p> <p>Recommendation 5 passed to IEC CS with request to forward to IEC/TC 88 Wind</p>

	the next meeting.	Turbines (7 December 2009). Reply can be reported at the Feb 2010 meeting. Recommendation 6 Passed to Secretary of ISO/PC 248 Sustainability criteria of biofuels. (No response at this stage – New Committee)
52	SAG E noting the importance of changed consumer behaviour and attitudes in achieving the goals of energy efficiency and the uptake of renewable energy, encourages TMB to seek greater consumer involvement in the development of relevant standards.	General recommendation to TMB

ISO 50001

40	SAG E notes that ISO 50001 will provide the focal / starting point for optimization of industrial energy efficiency. Where necessary, sector specific guidance for implementing ISO 50001 may subsequently be necessary and this can be developed in liaison with committees and stakeholders from those sectors.	Further action: To be discussed at the Feb 10 meeting of the SAG E
41	SAG E recommends that standards for the energy efficiency assessment of industrial utility sub-systems (such as compressed air, steam, pumps and fans) should be developed in co-ordination with ISO 50001. A complete system approach that includes all energy input and industrial use considerations is needed.	<p>SAG E Secretary will send this recommendation and information about the availability of the forthcoming DIS document to the Secretaries of the following committees.</p> <ul style="list-style-type: none"> • TC 115 Pumps (ISO 14414) • TC 117 Fans (ISO 12759) • TC 118 Compressed air (ISO 11011) <p>ISO DIS 50001 is due out shortly. There will be extensive communications on its availability across the ISO system including these committees.</p>

		Further action: ISO CS to ensure wide notification of availability of ISO/DIS 50001
46	SAG E recommends that liaisons be established between ISO/PC 242 Energy Management, ISO TC 207/SC 7 GHG, any future ISO committee on sustainable bio-energy and any other ISO committees examining GHG emissions calculations. This is to ensure co-ordinated discussions across ISO.	Liaison exists between ISO TC 207/SC 7 GHG and PC 242 Energy Management. ISO/PC 248 noted at their preliminary meeting that a liaison is needed with ISO/TC 207/SC 7 GHG. This will be formalized once the committee is fully running – 1 st meeting sometime in 2010.

Smart Grid and Meters

42	SAG E thanks the Chair of IEC/SG 1 for his report on their activities and in particular notes the work on standards for the smart grid. SAG E offers support for any aspects requiring joint discussions and recommends that consideration be given to heat recovery and/or storage in smart grids.	Recommendation sent to SG 1 Secretary also for passing to the parties dealing with the Smart Grid.
44	SAG E notes the global discussions on smart meters (gas ,water, electricity) and asks the secretary to develop material for a feasibility study on a standard for such devices. SAG E also recommends that IEC/SG 1 discuss the matter with a view to joint work if the need for an International Standard is confirmed in the future.	Verbal report will be given by the SAG E Secretary at the Feb 2010 meeting. SAG E members are asked to bring information about national situations. Internet searches show some government initiatives at the national level – (e.g. in the UK). There has also been a CEN Study done for the European Commission. The final results of which are awaited and can be reported to the SAG E meeting Feb 2010. Further action: For discussion at the Feb 2010 meeting of the SAG E.

Energy services

<p>48</p>	<p>SAG E notes the paper from the member for France on energy efficiency services (SAG E doc 20) and agrees that the matter is of high importance. SAG E therefore asks that a further paper to clarify the scope of the services to be considered and the connections with energy management, be developed. The paper should be developed by the representative from France with input from Korea, UK Israel, Japan and US.</p>	<p>Updated paper requested from AFNOR.</p> <p>Further action: For discussion at the Feb 2010 meeting of the SAG E.</p>
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Mapping

<p>53</p>	<p>SAG E asks the Secretary and Chair, assisted by the members for US and UK and France, to develop a map/matrix of ISO's energy activities to facilitate co-ordination of existing activities and identification of areas not yet covered. The SAG E secretary is asked to provide a full list of ISO activities of relevance.</p>	<p>Map of activities under development – initial information provided by the SAG E Secretary.</p> <p>Further action: For discussion at the Feb 2010 meeting of the SAG E. The UK will also present a database of energy standards as a contribution to this discussion.</p>
<p>54</p>	<p>SAG E recommends that due to the dynamics of change and importance of the subject, its lifespan be extended and periodically reviewed.</p>	<p>TMB approved extension.</p> <p>Further action: None needed</p>