Final Minutes

18. Solar Keymark Network Meeting
March 10th –11th, 2015; Rome, Italy

Item 1: Opening of the meeting

Harald Drück, chairman of the Solar Keymark Network (SKN), opened the meeting and welcomed the participants as well as the numerous guests. He thanked Dr. Vinod Kumar Sharma from ENEA for hosting the meeting and Jan Erik Nielsen as the Secretary of the Solar Keymark Network, for the excellent preparation of the meeting.

Harald Drück gave a short explanation about the Solar Keymark Network (SKN). The main task of the SKN is to agree on uniform procedures between the different actors (accredited solar thermal test labs, certifiers, inspectors and manufacturers) working according to the Solar Keymark scheme rules as well as the further development of Solar Keymark certification in particular and certification of solar thermal products in general.

The working rules of the SKN are described in the “Solar Keymark Network Internal Regulations” (Document SKN_N0102).

Harald Drück mentioned the concept related to resolutions and decisions: Resolutions directly influence the Solar Keymark specific scheme rules (document SKN_N0106) and the Solar Keymark Network Internal Regulations (document SKN_N0102) and hence shall be implemented in the next version of them. Decisions are other important agreements achieved on the meeting that have to be included in the latest version of the Solar Keymark decision list (document SKN_N0100).

The meeting took place from Tuesday, March 10th, 2014, 13:45 hrs till Wednesday March 11th, 2015, 13:32 hrs at the premises of ENEA (Italian National Agency for New Technologies) in Rome, Italy.

The first invitation including the first draft agenda (Document SKN_N0256R0) of the meeting was sent out by email from Jan Erik Nielsen dated January 28th, 2015.
**Item 2: Introduction of participants**

The participants attending the meeting physically introduced themselves and mentioned their nominating organisation or institution respectively.

Since this meeting was also additionally transmitted via internet Harald Drück asked the persons following the meeting via Internet to send an email with their name and their institution to Jan Erik Nielsen and to him to confirm their virtual presence.

The list of participants that attended the meeting physically and electronically is attached as Annex A.

As a result of the introduction of participants Harald Drück stated that only Christian Stadler is present as industry representative. Hence, he concluded that according to the clause 4.2 of the Solar Keymark Network internal regulations (Document SKN_N0102R9) voting will not be possible as the voting preconditions are not fulfilled with regard to the aspect of requiring a minimum of 3 industrial representatives.

Hence, he asked Christian Stadler if he can organise a mandate from two other industry representatives in order to perform the meeting in an ordinary and effective way.

Christian Stadler left the room in order to perform some phone calls and the meeting was continued with the first 4 topics on the agenda.

After approximately 15 min Christian Stadler came back with the information that the two industry representatives Pedro Dias and Gerhard von Amerongen will arrive quite soon. Both persons arrived at around 14:15 hrs. Hence, from that time onwards the preconditions for voting according to the clause 4.2 of the Solar Keymark Network internal regulations (Document SKN_N0102R9) were fulfilled.

**Item 3: Approval of the agenda**

Following the first draft agenda (Document SKN_N0256R0) send out on January 28th, 2015, in the last weeks, updated versions of draft agenda as well as documents related to the items mentioned on the agenda were send out and were also available via the Solar Keymark Internet site. The latest version of the agenda was named “18th Solar Keymark Network meeting – revised final draft agenda (R4)” document SKN_N0256R4 dated 2015-03-06 and send out on March 6th, 2015.

This version of the agenda was presented and the following modification were proposed:

Harald Drück proposed to delete item 22 as the document SKN_N0106_AnnexE_R1 does not reflect any more the latest version of this document. Hence the corresponding discussion and resolution can be made at item 23, dealing with SKN_N0106_AnnexE_R2 as the latest version of the corresponding document.

Furthermore it was agreed to deal with item 18 (collector energy output label) on the second day as requested by Stefan Abrecht since he will not be present on the first day.

It was agreed that the final agenda resulting from these changes would be the basis for the 18th Solar Keymark Network meeting. This final agenda is, as document SKN_N0256R5, available via www.solarkeymark.org.
Item 4: Comments and final approval of the minutes of the 17. SKN meeting

Harald Drück mentioned that the minutes of the 17th Solar Keymark Network meeting (File: SKN_N0254R0.pdf) were elaborated by him, checked by Jan Erik Nielsen and proof read by Maria João Carvalho. He thanked both of them for their work. Jan Erik Nielsen informed the participants of the SKN by email dated October 4th, 2014 about the availability of the minutes of the 17th Solar Keymark Network meeting on the Solar Keymark website.

Within the 30 days following this email no comments were received by Jan Erik Nielsen and Harald Drück.

Hence, the present version of the document SKN_N0254 is approved unanimously as the final minutes of the 17th Solar Keymark Network meeting, leading to document SKN_N0254R1, since the word “final” was included in the heading.

Note: The final version of the minutes will be made available by Jan Erik Nielsen in the coming days.

Item 5: Date & place of next Solar Keymark Network (SKN) meetings

The 19th SKN meeting (autumn 2015 meeting) is scheduled for
October 6th, 13:00 hrs to 0ctober 7th, 14:00 hrs, 2015 (end of day one at 19:00 hrs)
and will take place in Paris, France based on an invitation of Francois-Xavier Ball from Eurovent CERTITA

The 20th SKN meeting (spring 2016 meeting) is scheduled for
March 8th, 13:00 hrs to March 9th, 14:00 hrs, 2016 (end of day one at 19:00 hrs)
and will take place in Berlin based on an invitation of Sören Scholz from DIN CERTCO

The 21st SKN meeting (autumn 2016 meeting) is scheduled for
October 11th, 13:00 hrs to October 12th, 14:00 hrs, 2016 (end of day one at 19:00 hrs)
and will take place in Freiburg based on an invitation of Korbinian Kramer from Fraunhofer ISE

Item 6: Review of decision list

As agreed at the 16th Solar Keymark Network meeting Jan Erik Nielsen reviewed the latest version of the decision list (document SKN_N0100R15.pdf) in order to identify topics where further action is needed. However, no such topics were identified.
Item 7: New Absorber coatings to be considered as equivalent

No new absorber coatings to be considered as equivalent were presented for this meeting.

Note: The latest version of the relevant document is SKN_N0137R11 that lists, as a result of decision M17.D1 made at the 17th SKN-Meeting, mean values for the absorptivity and emissivity of the different types of selective coatings.

The document and the aspects of considering absorber coatings as equivalent was discussed and finally the following decision was made.

Decision M18.D1 – Absorber coatings to be considered as equivalent – revision of document SKN_N0137R11

Since Blutec etaplus CU and Blutec etaplus_al are not available on the market any more they should be marked with a corresponding note. Furthermore the use of values for absorptivity and emissivity specified by the manufacturer and measured by some labs is not consistent. This is also influencing the mean values listed in the tables.

The document should be revised under the lead of Jan Erik Nielsen.

This decision was taken with 0 negative votes and 0 abstentions.

Item 8: New Glazing to be considered as equivalent

No new glazings to be considered as equivalent were presented for this meeting.

Item 9: SCF budget allocation for standardisation related activities

Harald Drück as the chairman of the Solar Certification Fund (SCF) steering group (SG) reported about a discussion that took place during the last meeting of the SCF SG on February 10th, 2015 at Brussels. As a result of this discussion the following decision is proposed to the Solar Keymark Network:

Decision M18.D2 – SCF budget allocation for standardisation related activities

A minor part of the annual SCF funding should be allocated to convenors, liaison officers and secretaries in relevant standardisation committees. This part should not exceed 20% of the total SCF budget.

This decision was taken with 0 negative votes and 1 abstention.
Item 10: Presentation of Labelpack A+

Pedro Dias presented a new European project named Labelpack A+ coordinated by ESTIF by means of the presentation attached as Annex B.

Harald Drück thanked Pedro Dias for the presentation and mentioned the importance of the project, both with regard to the solar thermal industry in general and with regard to the Solar Keymark Network as it will be involved in a minor role in the Labelpack A+ project.

After the presentation of Pedro Dias some questions were asked and answered, and a short discussion took place. In this context it was also agreed that Pedro should inform the SKN during its meetings about the progress related to Labelpack A+

Item 11: Funding of SCF project applications from the 6th call

Jan Erik Nielsen and Harald Drück reported about the evaluation of the proposals handed in based on the 6th Call and the meeting related to their evaluation that took place February 10th, 2015 in Brussels. In this context Harald Drück also thanked all proposers, the evaluators and the members of the SCF steering group, ESTIF and the SKN secretary Jan Erik Nielsen for their work and efforts related to the 6th SCF call.

The results of this evaluation including a proposal of projects recommended for funding are listed in document SKN_N0258R0 based on the agreements of the SCF steering group meeting in Brussels.

In this context Harald Drück also mentioned that this document contains more detailed information related to not accept projects proposals as it was this case in previous years. The inclusion of more detailed comments related to projects not recommended for funding is a result of the corresponding wish expressed by some participants at the 16th Solar Keymark Network meeting.

Decision M18.D3 – Funding of proposals from the 6th SCF call

The proposals recommend by the Solar Certification Fund Steering Group for funding as described in document SKN_N0258R0 are accepted and the corresponding activities will be funded.

This decision was taken with 0 negative votes and 1 abstention.

Item 12: Re-introducing aperture area in collector testing

Andreas Bohren proposed to re-introduce the aperture area in collector testing based on the justification given in document SKN_N0257R0.

The proposal of re-introducing the aperture area was discussed and during the discussion it became obvious that Solar Keymark Network is still in favour of the gross area.

With regard to the problems that might occur from using the gross area instead of the aperture area in the context of the “solar collector family concept” it was decided to solve this aspect within CEN TC312 WG1.
**Item 13: Public / Confidential Status of Solar Keymark Network documents**

Andreas Bohren mentioned that it is difficult to decide to whom which information and/or documents related to activities of the Solar Keymark Network can be made available. In order to overcome this problem he proposed to make in general all SKN documents public.

The topic was discussed and finally the following resolution (and not decision as it changed the Solar Keymark Internal Regulations (Document SKN_N0102R9) was made:

**Resolution M18.R1 – Public / Confidential Status of Solar Keymark Network documents**

Chapter 6 (Confidentiality) of the Solar Keymark Internal Regulations (Document SKN_N0102R9) shall be modified as follows:

**Confidentiality**

All parties involved in the SKN shall maintain confidentiality of the information obtained in the course of conformity assessment procedures unless written consent is given by the manufacturer and by the empowered certification bodies involved.

All official Solar Keymark Network documents and final results of SCF projects are by default public. Upon request and by decision of the SKN a document can be rated confidential and is then available only to a well-defined group of persons. This group of persons has to be defined together with the request for confidentiality. In this case the document shall be marked as confidential and the group of persons allowed to have access to the document shall be mentioned on the document.

Note 1: Official Solar Keymark Network documents are the ones that have a Solar Keymark Document number.

Note 2: This approach requires that drafts and working documents are indicated as such in order to avoid confusion.

Note 3: This implies that all official SKN documents made so far will now become public.

*This decision was taken with 0 negative votes and 0 abstentions.*

**Item 14: Handling complaints related to Testing Laboratories and Inspectors**

Katharina Meyer pressed the document SKN_N0250R1 entitled “Proposal for including instructions for handling complaints related to Testing Laboratories and Inspectors and adding a link to the template for the complaint procedure on the Solar Keymark web-site” as extend version of the document SKN_N0250R0 entitled “Proposal for handling complaints related to testing laboratories and inspectors” presented by Katharina Meyer at the last SKN meeting.

Furthermore she presented document SKN_N0106_AnnexI_R0.docx entitled “Annex I to Solar Keymark specific scheme rules: Complaints Related to Solar Keymark Testing Laboratories and Inspectors”

The documents were discussed and the original proposal for a resolution as stated in SKN_N0250R1 was modified and finally the following resolution was made:
Resolution M18.R2 – Handling complaints related to Testing Laboratories and Inspectors

The following section should be included in the latest version of the Solar Keymark Scheme rules (Document SKN_N0106R24) as a new section in chapter 2.

New section 2.2 in Solar Keymark scheme rules.

Handling complaints

In order:
• To have a harmonized procedure for handling complaints,
• To solve complaints in an appropriate time and way,
• To maintain the high reputation of Solar Keymark,
• To ensure a fair competition between the testing laboratories, inspectors, and certification bodies,

the following procedure for complaints is applied:
• The complainant will inform the respective certification body (CB) by using the form for complaints given in the Annex I of the Solar Keymark scheme rules.
• The CB will forward the complaint to the specific party and ask for clarification and appropriate corrective actions within a defined due time.
• The clarification and corrective action will be sent to CB for assessment.
• The CB will assess this report and decide if a special audit at the respective party or a witness audit for the inspector is required. Especially with respect to testing laboratories, the CB should involve one of the other recognized and well experienced testing laboratories for technical support during the special audit.
• If the CB decides by itself or with recommendation of SKN certification working group that a special audit is required, the party has to pay for the audit as defined in the agreement between certification body and sub-contractors.
• If the CB agrees to the provided corrective actions and the complaint is solved, the CB will inform the complainant about the result by sending back the form.
• If the complainant is still not satisfied with the provided reply he can contact to convener of the SKN certification working group for discussion within the certification bodies working group.
• The SKN certification bodies working group will prepare a summary of all complaints and send to the SKN for presentation at next SKN meeting.

Note: This procedure how to handle complaints should be extended in the near future to other parties such as certification bodies and manufacturers.

This resolution was taken with 0 negative votes and 4 abstentions.
**Item 15: Finalizing Annex F - Freeze resistance test of evacuated tube collectors with heat pipes**

Ulrich Fritzsche mentioned that he has revised the document as requested at the 17th SKN Meeting under item 19. The revised version is available as document SKN_N0106_AnnexF_R3.

The document was shortly discussed and the following resolution was made:

**Resolution M18.R3 – SKN Scheme Rules Annex F (Freeze resistance test of evacuated tube collectors with heat pipes)**

The document SKN_N0106_AnnexF_R3 will become an official annex of the Solar Keymark Scheme rules. For that purpose document SKN_N0106R25 as new version of the SKN scheme rules will be elaborated by Jan Erik Nielsen.

*This resolution was taken with 0 negative votes and 0 abstentions.*

There was a consensus that the procedures described in SKN_N0106_AnnexF_R3 should also be included in a revised version of ISO 9806 or ISO 22975-2.

**Item 16: Transition from old EN 12975-1&2 to new EN 12975-1 and new EN ISO 9806:2013; Validity of SK certificates issued based on EN 12975-2**

Harald Drück reported in his role as chairman of the “Experience Exchange Circle of the German speaking Test Laboratories for Solar Thermal Systems and Components (EK-TSuB – Prüflaboratorien)” about the fact that according to the SKN representatives of the EK-TSuB the document SKN_N0106_AnnexH_R1.pdf does not completely reflect the results of the discussion that took place at the 17th Solar Keymark Network meeting at Brussels on 30.09. and 01.10.2014.

The main concern is that the transition period mentioned in it is not correct. Hence the resolution below is proposed. The aspects behind this resolution were discussed again intensively and finally the following resolution was made:


In the document SKN_N0106_AnnexH_R1 the sentence “The due date for transition all certificates to the new standard is 2020-12-31” shall be changed to “The due date for transition of all certificates to ISO 9806 is 2025-12-31”.

The document will be revised accordingly and made available as document SKN_N0106_AnnexH_R2 by Jan Erik Nielsen.

*This resolution was taken with 1 negative vote and 3 abstentions.*
Item 17: Performance test of systems with non-opaque collectors

Harald Drück presented in his role as chairman of the “Experience Exchange Circle of the German speaking Test Laboratories for Solar Thermal Systems and Components (EK-TSuB – Prüflaboratorien)” the following proposal for a resolution related to a precision of the test conditions for performance testing of systems with non-opaque collectors.

Resolution M18.R5 – Performance testing of systems with non-opaque collectors

The performance of systems with collectors being non-opaque from the backside shall be tested outdoors under the conditions as specified in ISO9806:2013, clause 21.6.

Note: In ISO9806:2013, clause 21.6 is – among others – the following stated:
The solar reflectance of the background used during the performance test of collectors being non-opaque from the back shall not exceed 20 %. The solar reflectance of the background used shall be reported in the test report.

The text of this resolution will be included in SKN_N0106_AnnexH_R2 – last part of section H.1 by Jan Erik Nielsen.

This resolution was taken with 0 negative votes and 0 abstention.

Item 18: Voluntary collector energy output label

Stefan Abrecht presented the idea of a voluntary collector energy output label by means of the presentation attached as Annex C and an article published by Sun & Wind-Energy that was sent out to the SKN prior to the meeting.

He also mentioned that if ESTIF/SKN will go for a label according to his design and according to his method, they will receive the rights to use the idea and the design for free, as he has no financial interests but only the interest to promote solar thermal energy to get the necessary importance in the heating supply of the future.

The idea of a voluntary collector output label was discussed and the following decision was made:

Decision M18.D4 – Voluntary collector energy output label

The Solar Keymark Network considers the idea of a voluntary collector energy output label as an interesting idea that should be further investigated, especially also with regard to legal, technical and marketing aspects. Based on the results of these investigations, the topic will be discussed again at the next Solar Keymark Network meeting. Provided the outcome of these investigations is positive, the collector energy output label can be included in the Solar Keymark scheme rules as a voluntary possibility for marking solar collectors. In principle it is also interesting to extend the idea of a voluntary solar energy output label to thermo-siphon systems.

This decision was taken with 0 negative votes and 0 abstentions.
Item 19: New collector data sheets

Patrik Ollas presented the new version of ScenoCalc including the new collector data sheet. The activity was performed in the context of the SCF project 5C1.5.

The presentation is included as Annex D.

The topic was discussed and finally the following decision was made.

Decision M18.D5 – New collector data sheet

It was decided that a modified version of ScenoCalc including the new collector data sheet will be prepared by Patrik Ollas taking into account the comments listed in the agenda of the 18th SKN Meeting (document SKN_N0256R4) and the aspects mentioned by Gerhard van Amerongen during the meeting with regard to Energy Labelling and EPBD. Furthermore in this context a validation of the modified version of ScenoCalc shall be made available to the Solar Keymark network.

Additionally a procedure how to deal with test results from tests performed according to EN 12975-2 shall be elaborated. The test standard used for testing shall be listed on the data sheet as well.

A vote on the new version by correspondence will take place approx. in May 2015.

Provided the result of the vote is positive, Annex B of the Solar Keymark Scheme rules named “Harmonised format for collector data sheet” is revised according to new version of ScenoCalc including the new collector data sheet

This resolution was taken with 0 negative votes and 0 abstentions.

Item 20: Funding of SKN working group convenor(s)

Based on resolution M17.R4 “Funding of SKN working group convenors” Jaime Fernandez Gonzalez-Granda asked on behalf of AENOR for funding of his activities as convenor of the working group that elaborated the document SKN_N0106_Annex_H_R1.

Decision M18.D6 – Funding of AENOR on behalf of Jaime Fernandez Gonzalez-Granda as working group convenor for the elaboration of SKN_N0106_AnnexH_R1

A funding of 500 € for AENOR on behalf of Jaime Fernandez Gonzalez-Granda, the convenor of the working group that elaborated the document for Resolution M17.R5 – Transition from EN 12975-1&2 to EN 12975-1 and EN ISO 9806:2013 is granted.

This document was finally approved as SKN_N0106_AnnexH_R2.

This resolution was taken with 0 negative votes and 1 abstention.
**Item 21: Election of the SKN chairman**

By a mistake from the Solar Keymark Network Chairman and the Solar Keymark Network Secretary it was missed to put this point on an early version of the agenda for this meeting. When Jaime Fernandez Gonzalez-Granda send an email to the Solar Keymark Secretary related to this topic it was already too late to launch a call for candidates and to perform an election at this meeting.

Hence the following decision was proposed and made:

**Decision M18.D7 – Election of the SKN chairman at the 19. SKN meeting**

The election of the SKN chairman will be performed at the 19. SKN meeting in October 2015 in Paris in order to prepare the election in a proper way.

*This decision was taken with 0 negative votes and 1 abstention.*

Furthermore it was discussed if the Solar Keymark Network internal regulations should be changed in such a way that the chairman can be re-elected more than one time. As a result of this discussion it was agreed that, if considered as sense-full, a proposal for a corresponding resolution can be handed in for the next meeting. The voting on this resolution will then be performed prior to the election of the chairman.

**Item 22: SK Scheme rules, Annex E_R1: Factory production control**

This item was deleted since the document SKN_N0106_AnnexE_R1 is already replaced by a new version (document SKN_N0106_AnnexE_R2); see also item 23.

**Item 23: SK Scheme rules, Annex E_R2: Factory production control**

The document SKN_N0106_AnnexE_R2 was presented and explained by Jaime Fernandez Gonzalez-Granda.

After a short discussion the following resolution was made:


The document SKN_N0106_AnnexE_R2 will become an official annex of the Solar Keymark Scheme rules. In addition to the document as it is available now, a line dealing with the aspect of the heat transfer plates for vacuum tube collectors will be added in the corresponding table based on a request of Malte Kottwitz. For that purpose, document SKN_N0106R25, as new version of the SKN scheme rules will be elaborated by Jan Erik Nielsen.

*This resolution was taken with 0 negative votes and 3 abstentions.*

The document SKN_N0106_AnnexA1b_R0 was presented and explained by Jaime Fernandez Gonzalez-Granda. The document is a kind of “mirror” of Annex E.

After a short discussion the following resolution was made:

Resolution M18.R7 – SKN Scheme Rules AnnexA1b_R0 (Inspection report)

The document SKN_N0106_AnnexA1b_R0 (Inspection Report) will become an official annex of the Solar Keymark Scheme rules and can be used for reporting alternative to Annex A1 and A2.

Note: For the next meeting a revised version of the document SKN_N0106_AnnexA1b_R0 consisting of a combination of Annex A1b and A replacing this both annexes should be prepared as a basis for a resolution.

This resolution was taken with 2 negative votes and 1 abstention.


According to Jaime Fernandez Gonzalez-Granda this topic needs not to be discussed any more since the relevant issues were already dealt within item 23 and 24.

Item 26: AirCow CAO calculation for solar air heating collectors

Korbinian Kramer informed by means of the presentation attached as annex E about the possibilities to calculate the collector annual output (CAO) for solar air heating collectors by using the information delivered by a new software tool named AirCow. This software tool delivers the parameters that are necessary to be introduced in SCEnOCalc for the calculation of Collector Annual Output.

The approach was discussed and in general appreciated by the Solar Keymark Network.

Korbinian Kramer mentioned that he will circulate the Excel-based AirCow calculation tool as well as some additional information related to it. Furthermore information about a validation of the tool will be provided.

Based on this information a corresponding resolution concerning the future use of the AirCow CAO calculation tool will be made at the next meeting.

Item 27: Inclusion of performance test results of unglazed collectors in Solar Keymark data sheets

This item was already dealt in the context of item 19.
Item 28: Validation of SCEnOCalc
This activity is related to the project SCF-5C1.5 and was already dealt in the context of item 19.

Item 29: SKN fee income 2015
Jan Erik Nielsen reported about the Solar Keymark Network fees expected for 2015 by means of the slide shown below.

<table>
<thead>
<tr>
<th>Solar Keymark Network fees as per 1/1 2015</th>
<th>13/02/2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total SKN €</td>
<td>10</td>
</tr>
<tr>
<td>Item</td>
<td>AENOR</td>
</tr>
<tr>
<td>Main types</td>
<td>collector</td>
</tr>
<tr>
<td>Subtypes</td>
<td>system</td>
</tr>
<tr>
<td>€</td>
<td>1 000</td>
</tr>
<tr>
<td>Total</td>
<td>1 380</td>
</tr>
<tr>
<td>Item 28: Validation of SCEnOCalc</td>
<td>Item 29: SKN fee income 2015</td>
</tr>
</tbody>
</table>

The expected income of nearly 250 k€ is approx. 20 k€ lower than in the previous year which is due to the relative bad market developments in some European countries.

Item 30: Global solar certification
Note: This activity is related to the projects SCF-4C01 and SCF-4C03
Jan Erik Nielsen gave a short presentation about the current status and the latest developments related to global certification by means of the presentation attached as Annex F.

The most important aspect is that the global solar certification concept was changed from having one global solar certification scheme and one global mark to the use of the already existing certification schemes and marks for solar thermal collectors.

Furthermore, he mentioned that here will be a meeting of the Global Solar Certification Board this afternoon and a meeting of the Global Solar Certification Network tomorrow here in Rome.
**Item 31: Update on “Fundamental new data base that can also be used for the generation of data sheets**

Note: This activity is related to the project SCF-4C07 and SCF-5C6.1

Jan Erik Nielsen mentioned that regrettably no work was done in this project since last meeting.

**Item 32: Update on CE marking of Collectors**

Note: This activity is related to the project SCF-5C5.1

Andreas Bohren as convenor of TC 312 WG1 reported about the latest status of the new EN 12975-1 and ISO9806 by showing the following slides:

Andreas Bohren reported about the fact that the CEN consultant responsible for EN 12975-1 is not assigned yet. Furthermore Andreas Bohren mentioned that a meeting of CEN TC 312 WG 1 will take place this afternoon. During this meeting the revision of EN 12975-1 and ISO9806:2013 will be discussed.

**Item 33: Information on Energy Labelling**

Note: This activity is related to the project SCF-4C16a with regard to the manual on Lot 1 and Lot 2 on solar thermal products and the project SCF-5C2.1 concerning the standards harmonisation with regard to the CEN mandate 495

Gerard van Amerongen showed the presentation attached as Annex G. In this context he also reported about his activities as liaison officer to TC 164 and TC 371. During and after the presentation some questions were raised by some of the participants and answered by Gerard van Amerongen.
Item 34: Updates from Liaison officers

Liaison officer to IEC/TC117, (related to project SCF 5C4.1)
Liaison officer to CEN TC164, (related to project SCF 5C4.2): already dealt with under item 33
Liaison officer to CEN TC228, (related to project SCF 5C4.3)
Liaison officer to CEN TC 371, (related to project SCF 4C12c / SCF 5C4.4): already dealt with under item 33

Liaison officer to IEC/TC117, (related to project SCF 5C4.1)
Stephan Fischer informed about IEC/TC117 and his activities as liaison officer related to this TC by means of the presentation attached as annex H

The most important development in the last few months is the letter from ISO TC 180 to IEC/TC 117 mentioned on slide 16. Up to now no official response was received from IEC/TC 117.

Furthermore Stephan Fischer mentioned the idea of inviting representatives from IEC/TC 117 to the next ISO TC 180 meeting planned for the beginning of December 2015 in Turkey. Harald Drück appreciated this as a very good idea.

Liaison officer to CEN TC128, (related to project SCF 5C4.3)
Korbinian Kramer informed about the activities of CEN TC128 and his activities as liaison officer related to this TC by means of the presentation attached as annex I.

Item 35: Report from the Solar Keymark Certification Bodies / Solar Keymark Inspection Working Group

Jaime Fernandez Gonzalez-Granda reported about the meeting of the Inspectors Working Group that took place on the morning of March 10th, 2015 directly prior to the Solar Keymark Network meeting in Rome.
Various inspectors presented the ways how they perform their inspections. Furthermore the new version of Annex E of the Solar Keymark Scheme rules was discussed and modified. The minutes of the inspectors working group and the presentations of the various inspectors will be made available to the SKN.

During the meeting of the inspectors working group it was also discussed how to proceed with manufacturers that have a certification for a specific product but are not producing this product for a certain time.

There was a consensus within Solar Keymark network that this is an important and relevant issue. Hence the inspectors working group was asked to prepare a proposal how to deal with this matter as a basis for a decision or resolution to be made at the next Solar Keymark network meeting.

With regard to the Certification Bodies Working Group Sören Scholz informed about the fact that since the last SKN meeting no meetings took place and hence there is nothing to be reported.
Item 36: Information from CEN TC 312

Vassiliki Drosou being the secretary of TC 312 informed about the structure and the current status of the standards in the responsibility of TC 312 by showing the following four slides:

During and after the presentation some questions were asked by the participants and answered by Vassiliki Drosou.

Item 37: Information from CEN CCB

Sören Scholz informed about the process of outsourcing the Keymark Management from CEN and about the fact that DIN CERTCO has won the call for tender.

At present the contract between DIN CERTCO and CEN is being elaborated. This contract will provide the basis for the work performed by DIN CERTCO. In this context it is especially important to define the rights of DIN CERTCO, e.g. concerning the empowerment of certification bodies, accepting specific Keymark scheme rules and setting and collecting fees.

The new approach of outsourcing the Keymark Management to DIN CERTCO was in general appreciated by the Solar Keymark Network.
Item 38: Solar Certification Fund Projects – General status report

By means of the presentation attached as Annex J, Pedro Dias gave a general overview of the number of projects, as well as on their status, supported by the Solar Certification Fund (SCF) in the different calls, as well as the corresponding budget allocated to the different calls.

After and during the presentation some questions were asked by some participants and answered by Pedro Dias.

Harald Drück thanked Pedro Dias for the huge amount of work he and his colleagues at ESTIF are performing in a highly professional way.

Item 39: Problems related to the transition from old EN 12975-1&2 to new EN 12975-1 and new ISO 9806

Item 39.1: Mechanical load test

João Santos added the aspect mentioned in the following email from Maria Joao Carvalho:

A situation has been brought up to CERTIF which may require an interpretation from SKN regarding the specified conditions to be applied when performing the Mechanical Load Test (§ 16 of ISO 9806).

Regarding test conditions, clause 16.3 defines that the test pressure shall be 2400 Pa or as specified by the manufacturer. So, should 2400 Pa be interpreted as a minimum test value or if the manufacturer specifies a lower value can it be accepted and SK granted in case the test is successful?

A short discussion within the Solar Keymark Network showed that there is a consensus that no requirements related to the minimum mechanical load are specified by the Solar Keymark Network. Hence in principle all values can be used that are specified by the manufacturer or test lab.

However, from some participants the wish to re-introduce* again a minimum value for the mechanical load a collector should withstand was expressed. There was an agreement to discuss this topic during the meeting of CEN TC 312 WG1 this afternoon.

*Note: The term “re-introduce” is used here since such a value did already exist in the old EN 12975-2.

Item 39.2: Collector reference area

Gerhard van Amerongen proposed to prepare an official statement from the Solar Keymark Network showing clearly that the same collector power and energy output is achieved independent of relating the collector efficiency parameters to the aperture or gross area of the collector.

Stefan Abrecht proposed to prepare such a statement also with regard to the system family definition in the context of EN 12976. This was seen critical by Harald Drück since a validation concerning the area-independent application of the system family calculation procedures is missing whereas the area-independency is obvious for the power and energy output of collectors, provided that the corresponding collector efficiency parameters are used.

It was agreed that Gerhard van Amerongen should prepare a first draft of such a statement and send it to Jan Erik Nielsen and Harald Drück for further elaboration. After his is done, Jan Erik Nielsen will than send out the document to the Solar Keymark Network for commenting.
Item 40: Pressure Equipment Directive (PED) and systems

Ioannis Alexiou reported about the fact, that in the past we had done an investigation about the PED directive for collectors. He proposed to perform such an investigation also for the different types of hot water stores related to the directives for pressure equipment 97/23/EC, 87/404/EOK, 90/488/EOK, 93/68/EOK etc.

This proposal was in general appreciated by the Solar Keymark Network and it was agreed that the convenors of CEN TC 312 WG 2 and WG 3 should be asked to perform this investigations.

Note: A corresponding email was send by Harald Drück on March 11th, 2015 to Vinod Kumar Sharma as convener of CEN TC 312 WG 2 and to Sebastian Laipple as convener of CEN TC 312 WG 3 with the request to send the results of their investigations to Jan Erik Nielsen at latest by the middle of August 2015 so that they can be presented at the next Solar Keymark Network meeting in October 2015.

Item 41: Update on Solar Keymark brochure

Ioannis Alexiou proposed that the Solar Keymark brochure should be revised and updated.

It was mentioned by Jan Erik Nielsen and Pedro Dias that this will be the case since there is a SCF project from the 5th SCF call related to this.

Item 42: Experience with the misuse of the Solar Keymark

Harald Drück reported about a letter that was send from Brado Schettini Gherardini, the director of legal affairs from CEN, in October 2014 to Jan Erik Nielsen as the secretary of the Solar Keymark Network an in which CEN complained about the unauthorised use of the Keymark trademark and about engaging the Keymark into mutual recognition/acceptance programs. In particular this letter addressed the MoUs with SRCC and IAPMO.

In this context Harald Drück also express his astonishment about the fact that such an official letter was send by CEN without any prior information or hints from the CEN representative Hoang Liauw who did receive all the minutes of the Solar Keymark Network meetings and who did also attend some of the meetings personally.

However, Harald Drück and Jan Erik Nielsen also reported about a meeting they had with Brado Schettini Gherardini and Hoang Liauw from CEN in December 2014. During this meeting the subject was discussed in a very constructive way and it was agreed that CEN will propose a modified version of the MoU’s being acceptable for CEN. This modified versions were sent from Hoang Liauw to Harald Drück and Jan Erik Nielsen in February 2015.

Item 43: Any other business

No topics were mentioned.

Item 44: Important national developments

No topics were mentioned.
Copy of Item 5: Date and place of next meetings – since next meetings are usually stated at the end of the minutes

The 19th SKN meeting (autumn 2015 meeting) is scheduled for

October 6th, 13:00 hrs to October 7th, 14:00 hrs, 2015 (end of day one at 19:00 hrs)

and will take place in Paris, France based on an invitation of François-Xavier Ball from Eurovent CERTITa

The 20th SKN meeting (spring 2016 meeting) is scheduled for

March 8th, 13:00 hrs to March 9th, 14:00 hrs, 2016 (end of day one at 19:00 hrs)

and will take place in Berlin based on an invitation of Sören Scholz from DIN CERTCO

The 21th SKN meeting (autumn 2016 meeting) is scheduled for

October 11th, 13:00 hrs to October 12th, 14:00 hrs, 2016 (end of day one at 19:00 hrs)

and will take place in Freiburg based on an invitation of Korbinian Kramer from Fraunhofer ISE

Item 45: End of meeting

Harald Drück thanked the participants for attending the meeting and for their constructive discussions. He also thanked Jan Erik Nielsen for the excellent preparation of the meeting and the work he is doing as Solar Keymark Network Secretary in a highly professional way. Furthermore he thanked Vinod Kumar Sharma from ENEA for hosting the meeting.

The participants thanked Harald Drück for his very effective and constructive conduction of the meeting.

The meeting ended at 13:32 hrs.

The minutes were prepared by Harald Drück (Chairman of the Solar Keymark Network) in assistance with Jan Erik Nielsen (SKN Secretariat) and Maria João Carvalho (proof reading)

Stuttgart, March 17th, 2015

Contact address Solar Keymark Chairman:
Harald Drück
ITW, Stuttgart University
Pfaffenwaldring 6
70550 Stuttgart, Germany
Email: drueck@itw.uni-stuttgart.de

Contact address Solar Keymark Secretariat:
Jan Erik Nielsen
SolarKey Int.
Aggerup 1
4330 Hvalsoe, DK
Email: jen@solarkey.dk
## Annex A: List of participants

### 18th Meeting, Rome, March 10th – 1th, 2015

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANISATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alberto García de Jalón</td>
<td>CENER</td>
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<tr>
<td>Andreas Bohren</td>
<td>SPF Solartechnik</td>
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<tr>
<td>Daniele Bernacchioni</td>
<td>ICIM S.p.A.</td>
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<td>Franck Cheutin</td>
<td>CSTB</td>
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<tr>
<td>Harald Drück</td>
<td>ITW/TZS</td>
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<tr>
<td>Jaime Fernandez Gonzalez-Granda</td>
<td>AENOR</td>
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<tr>
<td>João Santos</td>
<td>CERTIF</td>
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<tr>
<td>Korbinian Kramer</td>
<td>Fraunhofer ISE</td>
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<tr>
<td>Maria João Carvalho</td>
<td>LNEG</td>
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<td>Pedro Dias</td>
<td>ESTIF</td>
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<tr>
<td>Stephan Fischer</td>
<td>ITW/TZS</td>
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<tr>
<td>Ulrich Fritzsche</td>
<td>TÜV Rheinland Energie und Umwelt GmbH</td>
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<tr>
<td>Vinod Kumar Sharma</td>
<td>ENEA</td>
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<tr>
<td>Christian Stadler</td>
<td>ARCON Solarwärme GmbH</td>
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<tr>
<td>Emmanuel Leger</td>
<td>Laboratoire BELENOS</td>
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<tr>
<td>Sophie Bocquillon</td>
<td>EUROVENT CERTITA Certification</td>
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<tr>
<td>Matteo Sartori</td>
<td>Kiwa Cermet Italia SpA</td>
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<tr>
<td>Luis González-Monroy</td>
<td>Termicol Energía Solar, S.L.</td>
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<tr>
<td>Richard Unwin</td>
<td>ANTL</td>
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<tr>
<td>Richard Horton</td>
<td>Rheem Australia Pty LTD</td>
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<tr>
<td>Paul Lammersberger</td>
<td>AIT Austrian Institute of Technology GmbH</td>
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<tr>
<td>Malte Kottwitz</td>
<td>TÜV Rheinland (Shanghai)</td>
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<tr>
<td>Henry Rosik</td>
<td>ITC (CZ)</td>
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<td>Jan Erik Nielsen</td>
<td>SolarKey Int.</td>
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<tr>
<td>Katharina Meyer</td>
<td>DIN CERTCO GmbH</td>
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<td>Sören Scholz</td>
<td>DIN CERTCO GmbH</td>
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<tr>
<td>Vassiliki Drosou</td>
<td>CRES EBHE ELOT</td>
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<tr>
<td>Ioannis Alexiou</td>
<td>DQS HELLAS</td>
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<tr>
<td>Pedro Cardoso</td>
<td>CTCV Solar</td>
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<tr>
<td>Susanne Hansson</td>
<td>SP Technical Research Institute of Sweden</td>
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<tr>
<td>Gerard van Amerongen</td>
<td>Holland Solar vAConsult</td>
</tr>
<tr>
<td>Name</td>
<td>Company/Institution</td>
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<tr>
<td>Ken Guthrie</td>
<td>Sustainable Energy Transformation</td>
</tr>
<tr>
<td>Alfred Brunger</td>
<td>1427795 Ontario Inc.</td>
</tr>
<tr>
<td>Jiwen Jiao</td>
<td>Beijing Tsinghua Solar Ltd.</td>
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<tr>
<td>Xuguang Li</td>
<td>Beijing Tsinghua Solar Ltd.</td>
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<tr>
<td>George Roditis</td>
<td>Applied Energy Laboratory</td>
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<td>Arnoux Gabriel</td>
<td>CESP</td>
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<td>Jean-Baptiste Beyssac</td>
<td>CESP/UPVD</td>
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<tr>
<td>Stamatious Babalis</td>
<td>NCSR “DEMOKRITOS”</td>
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<tr>
<td>Alessia Carta</td>
<td>Albarubens SRL</td>
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<tr>
<td>Paolo Ricci</td>
<td>Istituto Giordano</td>
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<tr>
<td>Luca Votta</td>
<td>Kiwa Cermet Italia SpA</td>
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<td>Karim Bakari</td>
<td>Imanor</td>
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<td>Jana Levicka</td>
<td>TSU Priestany</td>
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<td>Jose Jamon Hernandez</td>
<td>AENOR/PRYSMA</td>
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<tr>
<td>Jesus Narbona</td>
<td>INTA</td>
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<td>Patrik Ollas</td>
<td>SP Technical Research Institute of Sweden</td>
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<td>Ben Chaabement Mohamed Anouar</td>
<td>CTMCCV</td>
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<tr>
<td>Christopher Karpurk</td>
<td>TÜV Rheinland PTL</td>
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<tr>
<td>Les Nelson</td>
<td>IAPMO</td>
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<tr>
<td>Eileen Prado</td>
<td>SRCC</td>
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<tr>
<td>Zinian He</td>
<td>Beijing Solar Energy Research Institute Group Co. Ltd.</td>
</tr>
<tr>
<td>Ruicheng Zheng</td>
<td>China Academy of Building Research</td>
</tr>
<tr>
<td>Qingtai Jiao</td>
<td>Jiangsu Sunrain Solar Energy Co., Ltd.</td>
</tr>
<tr>
<td>Giacobbe Braccio</td>
<td>ENEA</td>
</tr>
<tr>
<td>Vincenzo Sabatelli</td>
<td>ENEA</td>
</tr>
<tr>
<td>Ashraf Kraidy</td>
<td>LAS / RCREEE</td>
</tr>
</tbody>
</table>

### Participants electronically present

**Daniel Eggert**  
ISFH (only on March 10, 2015)

*No participants were attending the meeting electronically on March 11, since the web-transmission did, according to an email from Carsten Lampe, ISFH (Germany), not work.*
Annex B
Presentation of LabelpackA+

LabelPack A+
Solar Keymark Meeting
Rome – 10 March 2015

Project Summary

- What:
  - support the implementation of the energy labelling of heating appliances
  - boosting its impact on solar thermal products using the "package label"
- Whom:
  - those managing and issuing the label: manufacturers / distributors / installers
  - end consumers

Background

Why:
- lack of information about package label is a market barrier
- package label is a tool for differentiation and uptake of RES in H&C

How:
- "Label Pack A+ National Stakeholders Platform"
- Monitoring implementation
- European synergies

Expected impacts

- Consumers better informed and empowered
- ST sector (including installers) better prepared and making best use of package label
- Successful implementation in six important solar thermal markets (80% of European ST market)
- Recommendations and feedbacks for EC and MS
- Pave the way for an easy replication of the initiative in other markets

Actions

- Information
- Networking
- Training
- Tools
**Actions**

- Provide guidelines, as well as standardized answers to clarify the responsibility of each actor in the supply chain and help them comply with the requirements.
- Facilitate the exchange of product fiches and a calculation tool for all actors in the supply chain in the form of an online application.
- Support market surveillance activities.
- Assist installers and SMEs face specific implementation challenges.
- Provide tailor-made information for end consumers.

**Partners**

- European Solar Thermal Industry Federation
- National solar thermal associations
  - Bundesverband Solare Wärme (BSW) (DE)
  - Syndicat des professionnels de l'énergie solaire – ENERPLAN (FR)
  - Associazione Italiana Termico-AssolTERM (IT)
  - Associação Portuguesa de Industria Solar – ARTISOLAR (PT)
  - Solar Trade Association – STA (UK)
  - Austria Solar (AT)
- Experts
  - Agência de Energia – ADENE
  - elektro3 GmbH
  - DECO – Assoc. Portuguesa de Defesa do Consumidor
  - Lagambiente PLUS – Lagambiente
- Other partners
  - Solar Keymark Network

**Work structure**

**Timeline**

**National Pilot Projects - Plan**

- Involvement of market actors
  - Test and use the national "Label Pack" labelling platforms
  - National Stakeholders Platform (NSP)
  - Memorandum of Understanding (MoU): commitment of individual companies/individuals/associations
  - Consultation and validation of the project deliverables,
  - Cooperation regarding the online platform
  - Training actions to be carried out during the project.

- Management of the "Online platform"
- Training for market actors
### National Pilot Projects - Plan

- Training for market actors
  - materials put into action
  - training for the market actors:
    - manufactures, distributors, installers and other relevant actors, namely project designers.
  - Training is provided in different formats:
    - Directly to companies sales and technical staff
    - replicate the training actions through their contact chain
    - Using established events, such as trade fairs, installer associations meetings or other.
  - Goal of training up to 500 professionals

### Deliverables – National Pilot Projects

- National Roadmap for the implementation of the package label
- National help desk for the LabelPack A+ online application and supporting documents
- National Test plans/protocols and test report for the online application
- Packs of training and information material for professionals and consumers
- Pilot implementation reports
- National Communication plans
- National LabelPack A+ Website
- Label pack A+ brochure

### Cooperation with SKN

- Development of the Label Pack A+ online application and calculation tool
  - Support the enlargement of the dataset, including the linkage to existing databases, including the SKN database
  - Support to the development of the online tool with expertise on product database

### Cooperation with SKN

- Communication with the consumers
  - communication strategies
  - materials
  - provide distributors with training
  - coherent and complete information
Annex C
Voluntary collector energy output label

The less you leave to chance, the better chance you have

Gabriel Ross Perot

Is a solar thermal collector a „heat generator“ – EU says „no“

Definitions (Art. 1, 250-3):
- „space heater“ means a device that:
  a) provides heat to a water-based central heating system in order to reach and maintain at a
     desired level the indoor temperature of an enclosed space such as a building, a dwelling or a
     room; and
  b) is equipped with one or more heat generators.
- „heat generator“ means the part of a heater that generates heat using one or more of the
  following processes:
    a) combustion of fossil fuels and/or biomass fuels,
    b) use of the Joule effect in electric resistance heating elements,
    c) capture of ambient heat from an air source, water source or ground source, and/or waste heat

Difficult to understand – Solar is not mentioned
Beside consuming fossil fuels and electricity only capture of ambient heat – mainly anergy – is an accepted process of the EU regulation for being a heat generator.
→ always primary energy necessary!

Status Quo of Solar in ErP Package Label - ingredients

Space heater, temperature control and solar device

ErP labelling – reference primary energy e.g. space heater

ErP efficiency of space heaters

Primary Energy

Solar Energy

Useful Energy

ErP comparison with 100% primary energy

Scale “explodes” including solar thermal primary energy gain of different heating systems

Different approach 100% useful energy

Why Solar is not mentioned?
Always a question of approach!

Make visible the potential of solar collectors!
Solar Keymark data sheets provides output data for annual efficiency (ref. Würzburg)

\[ \eta_a (\text{xy} \, ^\circ \text{C}) = \frac{\text{Annual Collector Output (kWh per module) (\text{xy} \, ^\circ \text{C})}}{\text{Gross area (AG) \times Annual total irradiation (G(hf))}} \]
Approach - How to create efficiency classes for solar thermal collectors (gross area)

- Energy efficiency/output data
  - Solar thermal heat pump
  - Collector for medium temperature (50-60°C)
  - Collector for medium temperature (75°C)
  - Collector for high temperature (90°C)

Proposed table of efficiency classes adapted to regulation (EU) No 611/2013

- Output classes of collectors for higher temperatures (75°C)
  - A
  - B
  - C
  - D
  - E
  - F

- Output classes of collectors for medium temperatures (50°C)
  - A
  - B
  - C
  - D
  - E

Scheme of output classes related to annual efficiency resp. specific annual collector output

- Output classes related to annual efficiency respectively specific annual output per m² gross area (collector output)
- Annual efficiency 75°C = collector output/designation
- Annual efficiency 50°C = collector output/designation

Frequency distribution of output classes of relevant market players (FPC and ETC) for medium temperature 50°C

- Frequency distribution for medium temperatures 50°C market survey: 40 flat plate collectors and 23 evacuated tube collectors

Frequency distribution of output classes of relevant market players (FPC and ETC) for higher temperature 75°C

- Frequency distribution for higher temperatures 75°C market survey: 40 flat plate collectors and 23 evacuated tube collectors
Collector energy output label - Output classes A** to D for 50 °C

Output class for 50 °C acc. table (50 °C)
Only green bars as solar thermal is always more environmental friendly than conventional technology

Annual collector output at 50 °C
Solar Keymark dataset 2 shows potential of collector module

Collector energy output label - Output classes A** to D for 50 °C and 75 °C combined

Output class for 75 °C acc. table (75 °C)
Output class for 50 °C acc. table (50 °C)
Only green bars as solar thermal is always more environmental friendly than conventional technology

Annual collector output at 50 °C 75 °C
WTH / module out of Solar Keymark dataset 2 shows potential of collector module

Not really a new idea!
Voluntary labels of other associations

Thermostatic valves
Circulator Pumps (2005-2015)

Example circulator pumps Association: “Europump”

The labelling scheme (circulator pumps):

- The labelling scheme for circulator pumps resembles the already existing EU labelling scheme for refrigerators and other domestic appliances.
- The scheme is based on the principles described in Directive 94/11/EC implementing Council Directive 92/75/EEC with regard to energy labelling of household lamps. Its introduction shall increase awareness of the efficiency gains derived by the use of more advanced circulator pumps.
- The European pump industry will introduce these labels to foster competition between the manufacturers in the development of circulator pumps which consume less energy.
- The agreement is an initiative open to all circulator pump manufacturers willing to join this voluntary scheme.
- The labelling scheme is controlled by a committee consisting of signatories and representatives from Europump, who regulates the participants ensuring they adhere to the agreement. A representative of the European Commission is also invited to participate in the committee. Non-compliance will lead to sanctions. Serious non-compliance may lead to a company being excluded from the labelling scheme. Furthermore consumer associations are able to keep control just as the case is with other energy labelled products.

Sun at work?

It’s up to you!
Annex D
ScenoCalc – Additions and updates / new data sheet

SS calculations for unglazed collectors in ScenoCalc
- New table for power output presentation (SS-un glazed)
- ISO 9806:2013 reference: Table A.8 — Collector power output record

<table>
<thead>
<tr>
<th>Collector type</th>
<th>Power output</th>
<th>Temperature</th>
<th>Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 1</td>
<td>5 kW</td>
<td>100°C</td>
<td>0.5</td>
</tr>
<tr>
<td>Example 2</td>
<td>7 kW</td>
<td>110°C</td>
<td>0.6</td>
</tr>
</tbody>
</table>

New harmonized collector data sheet (Annex B.1)
- Features
  - New collector standard reference – ISO 9806/2013
  - Data corruption calculations
  - Energy labelling calculations

New harmonized collector data sheet
New harmonized collector data sheet

- Features
  - Droop area reference, $A_D$
  - New and improved interface and colour scheme
  - Illustration of different tracking options (page 2)

Acknowledgements

- Stephan Fischer
- Ulrich Fritzche
- Andreas Bohne
- Jan Erik Nielsen

Thank you for your attention!
Annex E
AirCow-CAO calculation for solar air heating collectors

Why is there a need to handle SAHC special?
- Strong mass flow dependence of the efficiency
- Leakage rate has an enormous influence on the usable power output
- Very different technical variants

-> How to calculate in a way that is fair and transparent and defined well enough for multi-party use

Mass flow dependend efficiency model for solar air heating collectors
- Efficiency curve
- Efficiency surface

More details on the "science" part
- Considered are a SAHC field, a system flow resistance, and a ventilator efficiency
- Modelling is implemented in the excel file "AirCow"
- Currently NOT applicable for open to ambient ONLY collectors, because of lack of modelling

How does it work?

AirCow® Solar Air Heating Collector Field Calculator and Optimizer for single Working Points:
- Takes into account only information which is available after a testing according to EN ISO 9806:2013
- Computes the individual mass flow of each SAHC
- Calculates a single point of boundary conditions which is representative and comparable
- Determines parameters $\eta_1$, $a_1$, $a_2$ of an efficiency curve for direct use in SCoNCalc
- Easy use: enter SAHC model parameters, press button, read out $\eta_1$, $a_1$, $a_2$

First glance on the proposed procedure/tool:

-> AirCow excel
Annex F
Global solar certification

Part 1: New Concept but still: Global Solar Certification Network

Introduction to the Global Solar Certification Network

Method changed:
- One-Global Solar Certification Scheme—One-Global Mark
- Use existing certification schemes with mutual recognition of test reports and inspection reports

Framework/organisation:
- Global Solar Certification Network (GSCN) - working under the GSCN
  - Working Rules
  - Certification bodies (CB)
  - Test labs (TL)
  - Inspectors/inspection bodies (IB)
  - Industry representatives (IR)

Global Solar Certification Network meeting, 12th March 2015, Rome
Annex G
Energy labelling and liaisons to CEN TC 128 and CEN TC 371

Update (33)
Ecodesign & energy label

Gerard van Amerongen
vAConsult

Introduction

- A comprehensive document on Ecodesign and energy label
  - Focused on solar thermal
- Consisting of two parts:
  - Part 1: overview of the regulations
    - and how to get the best label class
  - Part 2: Procedures of the regulation
    - with excel tools as templates and for automation
- A state of the art interpretation of the regulations

Part 1 – Overview -

- Introduction to the regulations
  - Difference Ecodesign and energy label, scope, ...
- The distinctive labels
  - The many labels explained
- The stakeholders
  - Suppliers, dealers, test institutes, CEN and certification
- Optimize the label class
  - Rules of thumb
- Future developments
  - What can be expected in near future

Part 2 – Details -

- Known issues
  - An extensive list with proposals to overcome
    - Workshop 01.12.2014 (Brussels) and 11.02.2015 (Brussels)
- Elements that make up the (solar) labels
  - Information needed, including tests
  - Flow chart on procedure
  - Technical document
  - Product fiche
- Additional information

Tools available:
- 4x Excel workbook
- SOLCAL method
CEN Mandate 495 (SCF 5C2.1)

HARMONIZATION ACTIVITIES

Goal
- Formally lay down the methods in standards
  - From “transition document” to standards
- After harmonization the standard is ‘Law’
- Goals:
  - Describe the methods of the ErP in standards
  - Add missing parts
  - Add an AnnexZA
    - Section standard <-> section ErP
  - Support from vAConsult and ITW

Harmonization
- EN 12975-1
  - Product families & gross / aperture area
- EN 12976-1 & 2
  - Product families (DST method only)
  - Non solar water heating efficiency & conformity load profiles
    - References: load profiles, climate
- EN 12977-3 (6 & 4)
  - Product families
- EN 15316-4-3
  - Load profiles and climate
  - Non solar water heating efficiency
  - Improved SOLCAL

Related to TC 312 (SCF 5C2.4, 4.3, 4.4 and SCF 5C12c)

LIAISON POSITIONS

TC 164 (SCF 5C4.2)
- TC 164 – Water supply
  - WG 2: Internal systems and components
    - CEN-EN 806 – series (referenced in solar standards: e.g. Legionella)
- Current activities:
  - Preparation revision 806-1 and 2
  - Legionella!
- Task: input on this issue from the Legionella report

TC 371 (SCF 5C4.4)
- Project Committee - Energy Performance of Building project group
- Main goal:
  - Establish framework joining the EPBD standards
  - EN 15603 Energy performance of buildings - Overarching standard EPB
- Status:
  - Rejected (07.10.2014)
    - 15 yes, 3 No, 15 abstained (weighted, below 71%)
  - Minor revisions and next formal vote (01.11.2015)
- Important: determination of EP of whole building
**TC 228 (SCF 5C4.3)**
- Heating systems and water based cooling systems in buildings
  - WG4: Calculation methods and system performance and evaluation
    - prEN 15316-4-3, method 1, 2 and 3 on solar thermal
- Status
  - Public enquiry closed recently
  - Process comments

**prEN 15316-4-3**
- Three solar thermal methods:
  1. Monthly / annual method, using system test data
     - Input data according EN 12976-2 (e.g. DST)
     - Editorial changes: common output → heat needed from backup
  2. Monthly method, using component test data ("T-chart")
     - Input data according to EN 12976-2 and EN 12977-3/4
     - Editorial changes: some major changes
  3. Hourly method, using component test data
     - Input data according to EN 12975-1
     - Collector loop only?
     - New method
     - Three solar PV methods added

**prEN 15316-4-3, method 2**
- Main changes:
  - Full support for integrated backup heating
  - Main output from \( Q_{\text{backup}} \) to \( Q_{\text{Keymark}} \)
  - Storage heat losses are taken into account
  - Correction factor introduced (\( f_{\text{cor}} \))
  - Compensation storage heat losses
  - Can be used otherwise also
  - Added: temperature level space heating
  - (almost) in compliance with Ecodesign/energy labelling (EC/CA)
- Output should be the same (on average), but
  - effect of heat losses and temperature space heating

**prEN 15316-4-3, method 3**
- Hourly method in combi with prEN 15316-5

**Evaluation (SCF 4C12c)**
- Tools:
  - To assist evaluation in inquiry phase
  - Excel applications:
    - Method 2, monthly method
    - Method 3, combining prEN 15316-4-3 and prEN 15316-5
- Evaluation of prEN 15316-5 (storage)
  - Standard is not finished
  - Comments for improvement added
    - CEN format and test proposals
  - Hourly method is of great importance for solar thermal
Annex H
Liaison to IEC TC 117

ISO/TC 180 Liaison Report from IEC/TC 117
Solar thermal electric plants

Stephan Fischer
Institute for Thermodynamics and Thermal Engineering (ITW)
Research and Testing Centre for Thermol Solar Systems (ITW)
University of Stuttgart
Paffenwaldring 10, 70569 Stuttgart, Germany
Email: fischer@itw.uni-stuttgart.de
Website: www.itw.uni-stuttgart.de

SCOPE
To prepare international standards for systems of Solar Thermal Electric (STE) plants for the conversion of solar thermal energy into electrical energy and for all the elements (including all sub-systems and components) in the entire STE energy system.

The standards would cover all of the different types of systems in the STE field, as follows:
- Parabolic trough
- Solar tower
- Linear Fresnel
- Dish
- Thermal storage

Problem
The standardization work within IEC/TC 117 interferes with the standardization work being done in ISO/TC180 and CEN/TC312 respectively.

This leads to different test standards for same products e.g. parabolic trough collectors.

SCOPE 2/2
The standards would define terminology, design and installation requirements, performance measurement techniques and test methods, safety requirements, "power quality" issues for each of the above systems.

The standards would also address issues of connectivity and interoperability with the power grid related to connections, bidirectional communicates and centralized control (Smart Grid) and environmental aspects.

TC 117 officers

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<td>Siemens AG Energy Sector</td>
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<td>Mr. Eduardo Garcia Iglesias (ES)</td>
<td>PROTERMO SOLAR</td>
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MEMBERSHIP STATUS

Participating countries: 11
Observing countries: 12

Participating countries:
- China
- France
- Germany
- Israel
- Italy
- Japan
- Portugal
- Spain
- Sweden
- Switzerland
- USA

Observing countries:
- Australia
- Austria
- Brazil
- Canada
- Czech Republic
- Denmark
- Iran
- Republic of Korea
- Mexico
- Poland
- South Africa
- United Kingdom

STRUCTURE 1/3

The TC 117 currently has 2 subcommittees with in total 3 active working groups

Project Teams
PT 62862-1-1 Terminology: To draft a Technical Specification on Solar Thermal Electric Plants – Terminology
  Project Leader: Dr. Eduardo Zarza Moya (Spain)

PT 62862-1-2 Procedure for generating a representative solar year: To draft a Technical Specification on the Procedure for generating a representative solar year
  Project Leader: Dr. Loureis Ramirez Santigosa (Spain)

STRUCTURE 2/3

Ad-Hoc Groups

AHG 1 General subjects: To develop IEC deliverables regarding common aspects for the different STIE technologies such as Terminology, Safety requirements, Typical Meteorological Year (TMY) definition, as well as their relevant schedule
  Project Leader: Mr. Chris Fleeckiger (USA)

AHG 2 Systems and components: To develop the necessary IEC deliverables to qualify the components of the different technologies as well as the parameters for the operational monitoring of the plants and the relevant acceptance tests
  Project Leader: Mr. Eduardo Garcia Iglesias (Spain)

STRUCTURE 3/3

AHG 3 Energy Storage: To develop the necessary IEC deliverables for characterizing the thermal energy storage focusing on the whole system and on the specific components
  Project Leader: Dr. Matthias-Grommel (GER)

LIAISONS

Internal IEC Liaison:
TC-120 Electrical Energy Storage (EES) Systems
TC 5 Gas Turbines
TC 82 Solar photovoltaic energy systems

Liaison ISO:
TC 180 Solar energy
TC 492 Gas turbines

MEETINGS

Meetings:
Madrid, Spain, 7th – 8th March 2012
Tel Aviv, Israel, 30th October – 1st November 2012
Northbrook, USA, 19th – 20th November 2013
Tokyo, Japan, 14th – 15th November 2014

Next meeting:
October 2015, location pending

Work items

117/27/NP
Future IEC 6xxx TS Ed.1: Solar Thermal Electric Plants – Terminology
(approved, CD 2014-10, TS 2015-10)

117/28/NP
Future IEC 6xxx TS Ed.1: Procedure for generating a representative solar year
(approved, CD 2014-11, TS 2015-11)

117/31/NP
Solar thermal electric plants - Part 3-2: Systems and components. General requirements and test methods for parabolic trough collectors (proposed IEC 62862-3-2)
(closing date for voting: 2014-11-07, CD 2015-04, IS 2016-12)

117/32/NP
Solar thermal electric plants - Part 3-3: Systems and components - General requirements and test methods for solar receivers (proposed IEC 62862-3-3)
(closing date for voting: 2014-11-07, CD 2015-02, IS 2016-12)
**Work items**

117/34/NP  
Thermal energy storage for concentrated solar - General characterization (proposed IEC TS 62862-2-1)  
(closing date for voting: 2014-12-19, CD 2015-12, IS 2017-07)

117/41/NP  
Solar thermal electric plants - Part 5-2: Systems and components - General requirements and test methods for linear Fresnel collectors (Proposed IEC 62862-5-2)  
(closing date for voting: 2015-03-06, CD 2015-08, IS 2017-03)

**Actions taken since last SKN meeting**

- ISO/TC 180 wrote a letter to IEC/TC 117  
  - with the request to leave the standardization in solar thermal products to ISO/TC 180  
  - with the request to withdraw their WI  
  - and invited the IEC/TC 117 expert to work within the framework of ISO/TC 180

- No official answer received up to now

- Bilateral discussions between Maria João Carvalho, Korbinian Kramer, Stephan Fischer (ISO/TC180) and Fabienne Sallaberry, Werner Piatzer, Eckhard Lüpfert (IEC/TC117)

**Next steps?**

- Ken Guthrie will contact the new chairman (Werner Piatzer)  
- Joined TC180/TC117 meeting?  
- Invitation of IEC/TC117 experts to CEN/TC 312 WG1 meetings  
- ....

**Thank you...**
Annex I
Liaison to CEN TC 128

Liaison Report on TC 128 (incl. TC 254) for TC 312 and ESTESC

What do companies have to do?
Solar energy systems for roofs: Requirements for structural connections to solar panels

SUMMARY
a) Type of solar panel: Thermal or photovoltaic solar panels which comply with the mechanical resistance requirements of EN12975 (solar thermal collectors) or EN61215 (solar PV panels).
b) Determine the loads and load combinations: self-weight of the solar panels and relevant imposed wind and snow actions.
c) Determine the design loads for the solar panels: multiply each of the loads by their respective partial factor γG or γQ for the ultimate limit state, and separately for the serviceability limit state.
d) Identify one or more combinations of most unfavourable design loads which act together at the same time, for the ultimate and serviceability limit states. Modify the loads by applying one or more load combination factor ψ for two or more variable loads which act at the same time.

e) Determine the structural resistance of the connections between the solar panels and the roof structure in accordance with calculation methods of one or more of the following standards: EN1992 to EN1998, and EN1999 for the ultimate and serviceability limit states. For the serviceability limit state, specify the maximum deformation limiting the function of the connection; or where the structural resistance cannot be determined by calculation methods, determine the resistance by serviceability and ultimate load tests.
f) Verify the design by confirming that the factored structural resistance is not less than the critical combinations of factored actions for both limit states.

Overview on calculations and tests for different schemes and purpose from the >>Mechtest project<<

http://www.mechtest.de

Thank you for your attention!

Join the >>KoST Project<<, to get your products tested and optimized!

Fraunhofer-Institut für Solare Energiesysteme ISE
Dr. Korbinian Kramer
www.ise.fraunhofer.de
www.kollektortest.de
www.mechtest.de
Annex J
SCF Projects – General status report

Solar Certification Fund

- 579,845 EUR (approx.) allocated to projects
  - 1st call: 145,950 EUR
  - 2nd call: 79,910 EUR
  - 3rd call: 170,565 EUR
  - 4th call: 183,420 EUR
  - 5th call: 179,900 EUR

Solar Certification Fund

- 68 projects approved so far:
  - Closed: 39
  - 1st call: 9
  - Reporting: 9
  - 2nd call: 7
  - On-going: 14
  - 3rd call: 18
  - Contracting: 2
  - 4th call: 16
  - Deferred: 2
  - 5th call: 18
  - Cancelled: 2

Solar Certification Fund

- Closed projects
  - Report and deliverables approved by the SCF Steering Group
  - Balance payment done or being prepared

- Deferred projects
  - Projects that are on-hold
    - Waiting for one of the conditions for the project to occur (external)

- Cancelled projects
  - One case instore - request from contractor
  - Possible also by SG decision in extreme cases

Solar Certification Fund

- On-going projects
  - Projects that are being executed
  - Periodic reports available (for the majority) at the Disc. Board
  - Deliverables (or drafts) may be also available at the Disc. Board

- Reporting projects
  - Projects that have concluded their work
  - Pending approval, because:
    - Reports (or deliverables) are to be provided (uploaded at DB)
    - Secretariat is preparing evaluation files
    - Evaluators are assessing report and deliverables
    - Evaluators requested additional clarification or work