Final Minutes

16. Solar Keymark Network Meeting
March 11th – 12th, 2014; Las Palmas de Gran Canaria, Spain

Item 1: Opening of the meeting

Gonzalo Piernavieja director R&D&Innovations welcomed the participants on behalf of ITC (Instituto Tecnológico de Canarias) and gave a short presentation about ITC.

Harald Drück, chairman of the Solar Keymark Network, opened the meeting and welcomed the participants as well as the numerous guests. He thanked Gonzalo Piernavieja for his presentation as well as Pilar Navarro Rivero and Salvador Suárez from ITC for hosting the meeting. Furthermore he thanked Jan Erik Nielsen as the Secretary of the Solar Keymark Network, for the excellent preparation of the meeting.

Pilar Navarro Rivero gave some practical information related to the breaks and the informal dinner planned for the evening.

Harald Drück gave a short explanation about the Solar Keymark Network. The main task of the SK-Network is to agree on uniform procedures between the different institutions (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 Solar Keymark Network (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 11th, 2014, 10:00 hrs till Wednesday March 12th, 2014, 12:15 hrs at the premises of ITC in Las Palmas de Gran Canaria.

The first invitation including the first draft agenda (Document SKN_N0229R0) of the meeting was sent out by email from Jan Erik Nielsen dated January 17th, 2014.
Item 2: Introduction of participants

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

As a result of the large number and broad spectrum of participants present the voting preconditions according to clause 4.2 of the Solar Keymark Network internal regulations (Document SKN_N0102R) are fulfilled.

Since this meeting was the first meeting that was also additionally transmitted via internet Harald Drück asked the persons following the meeting via Internet to send an email to Pedro Dias and to confirm their virtual presence and to mention their name and institution.

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

Item 3: Approval of the agenda

Following the first draft agenda (Document SKN_N0229R0) send out on January 17th, 2014, 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 “16th Solar Keymark Network meeting – revised final draft agenda version R3” document SKN_N0229R3 dated 06/03/14 and send out on March 6th, 2014.

This version of the agenda was presented and discussed. Two proposals for additional topics were proposed and included under item 39 (any other business).

Based on a request of Christian Stadler, Harald Drück asked if there were objections postponing item 13 (tendering procedures based on Solar Keymark) to the second day of the meeting, since Christian Stadler would only be present at that time. Since there were no objections, it was agreed to do this – without changing the numbering of the items of the agenda.

It was agreed that the final agenda resulting from these changes would be the basis for the 16th Solar Keymark Network meeting. This final agenda is as document SKN_N0229R4 available via www.solarkeymark.org.

Item 4: Comments and final approval of the minutes of the 15. SKN meeting

Harald Drück mentioned that the minutes of the 15th Solar Keymark Network meeting (File: SKN_N0227R0.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.

The minutes were sent out by email dated October 7th, 2014 by Jan Erik Nielsen.

Within the 30 days following the send out of the minutes the following comments were received:

From: Rosik Henry [mailto:hrosik@itc.zlin.cz]
Sent: 07 October 2013 17:13
To: Jan Erik Nielsen  
Subject: RE: SKN Meeting minutes  

Only one small technical remark, Jan Erik – the reference in Item 12 does not work properly.

Rgds  
---henry

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**Action:** The reference will be corrected as follows:  
.... the obligatory members (see clause 2.1.1) shall participate....

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Hi Harald,

Please find below some comments on the SKN meetings.

**Item 9**  
As mentioned at the meeting, the document presented was not elaborated by the WG but by the Chair in cooperation with the circle of the Certification Bodies. I suggest that the minutes are changed accordingly.

**Action:** Change Text from  
“The document SKN_N0193R1 elaborated by the WG, as distributed shortly before the 14th Solar Keymark Network meeting, was presented at that meeting by Sören Scholz.”  
to  
“The document SKN_N0193R1, elaborated by Sören Scholz in cooperation with the circle of the Certification Bodies and distributed shortly before the 14th Solar Keymark Network meeting, was presented at that meeting by Sören Scholz.

**Item 18**  
Typo - Jan Erik’s name is not complete.

**Action:** Name completed

**Item 25**  
Typo - 2nd line “March 2103”

**Action:** Word “Mach” changed to “March”

**Item 27**  
The Directive is called Energy Performance of Buildings Directive (EPBD)

Item 28 (HD: should be 29)
Typo - 2nd line “from the company)
Action: Word “form” changed to “from”

Item 28
Typo - last line ‘convenership’
Action: “convenor ship” changed to “convenership”

Kind Regards,
Pedro

Due to the changes mentioned above the document SKN_N0227R1 results as the revised version of the minutes. Harald Drück asked for approval of this version as the minutes.
The final minutes of the 15th Solar Keymark Network meeting (Document SKN_N0227R1) were unanimously finally approved by the participants present.

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

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

The 17th SKN meeting (autumn 2014 meeting) is scheduled for
   September 30th, 13:00 hrs to October 1st, 14:00 hrs, 2014 (end of day one at 19:00 hrs)
at Brussels, Belgium at the premises of CEN, provided the costs related to this are moderate.
Note: The next CEN TC 312 meeting is scheduled for October 2nd, 2014

The 18th SKN meeting (spring 2015 meeting) is scheduled for
   March 10th, 13:00 hrs to March 11th, 14:00 hrs, 2015 (end of day one at 19:00 hrs)
and will take place in Rome based on an invitation of Vinod Kumar Sharma from ENEA.

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 at Wels, Austria based on an invitation of Harald Dehner from ASiC.

Item 6: New Absorber coatings to be considered as equivalent

No new absorber coatings to be considered as equivalent were presented for this meeting.
Item 7: New Glazing to be considered as equivalent

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

Item 8: Inclusion of unglazed collectors in SK data sheets

The topic could not be discussed since Peter Kovacs was not present and since it was not exactly clear what was his intention to put this topic on the agenda.

Ulrich Fritzsche mentioned that the performance test results out of steady state method for unglazed solar collectors cannot be entered in the present version of the Solar Keymark data sheets and that this has to be solved in the near future.

Item 9: Renewable Heat Incentive (RHI) scheme in Great Britain

Harald Drück welcomed Jacob Andersen from DECC (Department of Energy & Climate Change) and Alex Stuart from Ofgem from the UK and mentioned that he was very happy that they attended the Solar Keymark Network meeting in order to intensify the cooperation between RHI and Solar Keymark.

Jacob Andersen explained the Renewable Heat Incentive (RHI) approach by means of the presentation included as Annex B1.

Alex Stuart explained the UK Domestic Renewable Heat Incentive by means of the presentation included as Annex B2.

Some questions were asked by the participants and answered by Jacob Andersen and Alex Stuart.

One of the main results was that products with MCS and SK certification are considered as equivalent, but this does not mean that all SK certified collectors are automatically eligible for RHI. Furthermore the installation / installers also require MCS certification.

Possibilities related to the exchange of data between MCS and Solar Keymark was discussed. There was a general consensus that it is preferable to establish one database for joint use instead of managing two separate databases.

Item 10: Status for incoming Solar Keymark fees 2014

The fees to be paid as for 01/01/14 are in total 269,340 €; Last year the amount was 267,670 €.

At present the situation is as follows:

<table>
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<th>Certifier</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
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</tr>
<tr>
<td>30/01/2014</td>
<td>ICIM</td>
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</tr>
<tr>
<td>30/01/2014</td>
<td>IMQ</td>
<td>50.00</td>
</tr>
</tbody>
</table>
Item 11: Recommendation for SCF project applications (5th call)

Jan Erik Nielsen and Harald Drück reported about the evaluation of the proposals handed in based on the 5th Call and the meeting related to their evaluation that took place February 4th, 2014 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 5th SCF call.

The results of this evaluation including a proposal of projects recommended as agreed on as a result of the SCF steering group meeting in Brussels for funding are listed in document SKN_N0230R1.

This document SKN_N0230R1 was presented by Jan Erik Nielsen and shortly discussed. During the discussion the wish was expressed by some participants to receive more detailed information why their proposal was not recommended for funding even if the points resulting from the evaluation are in the range of the threshold for funding.

Harald Drück mentioned that this comment will be considered for the next SCF evaluation round and that more specific comments will be provided in case of not accepted proposals. After a short discussion the following decision was made:

Decision M16.D1 – Funding of proposals from the 5th SCF call

The proposals recommend by the Solar Certification Fund Steering Group for funding as described in document SKN_N0230R1 are accepted and the corresponding activities will be funded.

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

Item 12: Election of industry representative for SCF steering group

Harald Drück mentioned that according to the Solar Certification Fund Working Rules (Document SCF_N001) the SCF steering group should have two representatives from ESTIF. In previous times this has been Teun Bokhoven as Chairman of the ESTIF Standardisation and Certification working group and Pedro Dias, representing the ESTIF secretariat. Since now Christian Stadler is Chairman of the ESTESC (European Solar Thermal Energy Standardisation & Certification Working Group) and since he was already in the SCF steering group as industry representative, one industry representative seat is now vacant.

Harald Drück asked for interested industry representatives and Oscar Mogro from BDR Thermea (Baxi Calefaccion) was proposed and elected without any negative votes and abstentions. Harald Drück welcomed Oscar Mogro as new SCF steering group member.
**Item 13: Tendering processes for solar thermal collectors and projects**

Harald Drück reported about a discussion that took place within the “Experience Exchange Circle of the German speaking Test Laboratories for Solar Thermal Systems and Components” (EK-TSuB – Prüflaboratorien) and that resulted in the proposal mentioned in the agenda as a basis for a decision by the Solar Keymark Network.

Furthermore he welcomed Stefan Abrecht for the company „Solar-Experience GmbH”. On behalf of Ritter Energie- und Umwelttechnik and Ritter-XL solar Stefan Abrecht explained the motivation as well as the ideas and stagey behind this initiative.

The topic was intensively discussed and finally the following decision was made:

**Decision M16.D2 – Recommendations of the Solar Keymark Network related to tendering processes for solar thermal collectors and projects**

The Solar Keymark Network recommends that the following aspects should be the technical basis for national and international tendering processes for solar-thermal projects:

1. Only solar-thermal collectors certified by Solar Keymark or by other adequate certification schemes such as SRCC or IAPMO can be used. Handing in the corresponding certificates and data sheets shall be requested.

2. As thermal performance criterion a calculated annual collector or system output shall be used.

   Note 1: One appropriate tool for the calculation of the annual collector output for solar thermal collectors is the freely available Solar Keymark calculation tool “ScenoCalc” (http://www.sp.se/en/index/services/solar/ScenoCalc/Sidor/default.aspx)

   Note 2: For large scale systems the IEA SHC Task 45 factsheet “annual performance guarantees for output of large collector fields” is available via:


This decision was taken with 0 negative votes and 2 abstentions.

**Item 14: Changes of Solar Keymark data sheets due to ISO 9806:2013**

Harald Drück reported about the fact that the new ISO 9806:2013 replacing the EN 12975-2:2006 is using the gross area as reference area instead of the aperture area as it was the case for the EN 12975-2:2006.

Furthermore he reported about a discussion that took place within the “Experience Exchange Circle of the German speaking Test Laboratories for Solar Thermal Systems and Components” (EK-TSuB – Prüflaboratorien) that resulted in the proposal mentioned in the agenda as a basis for a resolution by the Solar Keymark Network.

The topic was discussed intensively. In this context Ralf Köbbeman-Rengers mentioned that the already existing ERP (Energy related products) documents require the use of the aperture area. Furthermore Pedro Dias mentioned a letter from Tommy Williamson from Kingspan
also questioning the sense of the use of the gross area as reference area especially with regard to the disadvantages resulting from this for vacuum tubular collectors.

As a result of an intensive discussion it was decided to postpone a decision related to a change of the data sheets in a way to provide the collector performance figures based on aperture and gross area until it is definitively clear what area is finally used in the ERP documents. Hence this topic will be discussed at the autumn SKN meeting again.

In order to strengthen the relevance of the use of the gross area the following decision was made:

**Decision M16.D3 – Collector Gross area to be used in ERP documents**

The Solar Keymark Network got aware of the fact that the collector gross area might not be used in the latest version of the ERP (ERP: Energy Related Products) documents. As in the latest version of ISO 9806:2013 only the collector gross area will be determined and used as reference area the Solar Keymark Network strongly requests to use the collector gross area in the context of the ERP documents.

Note: This Decision should be communicated to the European Commission by the Solar Keymark Network.

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

**Item 15: Approval of ScEnOCalc updates by SKN**

Harald Drück mentioned that during the last meeting of the “Experience Exchange Circle of the German speaking Test Laboratories for Solar Thermal Systems and Components” (EK-TSuB – Prüflaboratorien) a discussion took place about the fact that different results were obtained with different versions of ScEnOCalc. Since some of these results were quite doubtful it was questioned if the current regulation requiring to use always the latest version of ScEnOCalc available via the Solar Keymark website is appropriate.

As a result of this discussion the proposal mentioned in the agenda as a basis for a resolution by the Solar Keymark Network arose.

This proposal was discussed and finally the following resolution was made:

**Resolution M16.R1 – Approval of ScEnOCalc updates by SKN**

Each new version of ScEnOCalc shall be approved by the SKN before it becomes official. As a basis for this approval a document describing the major changes compared to previous approved versions as well as the validation performed with the latest version shall be provided.

*This resolution was taken with 0 negative votes and 0 abstentions.*
Item 16: Approval and exclusion of test labs by SKN

Harald Drück reported about a discussion during the last meeting of the “Experience Exchange Circle of the German speaking Test Laboratories for Solar Thermal Systems and Components” (EK-TSuB – Prüflaboratorien) related to the poor quality of the work performed by some test labs and the difficulties to stop or improve their activities. Since such unqualified activities can ruin the whole reputation of the Solar Keymark it was considered as essential to establish a mechanism to try to prevent such labs from issuing tests reports for Solar Keymark certification within a relative short time.

As a result of this discussion the proposal mentioned in the agenda as a basis for a resolution by the Solar Keymark Network arose.

This proposal was discussed and modified and finally the following decision was made:

Decision M16.D4 – Recommendation to certifiers for reconsidering agreements with specific test labs and inspectors

In special cases, e.g. if the result of the work performed is of unacceptable poor quality, the Solar Keymark Network can recommend to the certifiers to reconsider their agreements with specific test labs and inspectors.

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

Furthermore it was decided to establish a working group for the elaboration of a proposal how to deal with complains. The working group consists of the following persons:

Sören Scholz (Chair): Stephan Fischer, Carsten Lampe, Vinod Kumar Sharma, Korbinian Kramer, Alberto García de Jalón, Giovanni Bellenda, Jaime Fernandez Gonzalez-Granda, Henry Rosik, Maria João Carvalho

The task of the working group is to elaborate a proposal for a procedure how to deal with complains as a basis for a decision / resolution at the next Solar Keymark network meeting.

Item 17: Improvements for organization and funding of SKN activities

Jaime Fernandez Gonzalez-Granda explained his thoughts related to a funding of SKN working groups on the basis of the text in the agenda.

In general this initiative was appreciated and Jaime Fernandez Gonzalez-Granda was requested to prepare for the next SKN meeting a simple procedure on how this can be done as a basis for a decision or resolution respectively.

Item 18: Transition from old EN 12975-1&2 to new EN 12975-1 and new EN ISO 9806:2013

Based on the input of Jaime Fernandez Gonzalez-Granda in the agenda the topic was intensively discussed. During this discussion it became clear that the subject is extremely complex and that it is not possible to elaborate now a proposal for a resolution specifying the details of the transition period.
Hence it was agreed to establish a working group to elaborate procedures for the transition from the old EN 12975-1&2 to new EN 12975-1 and new EN ISO 9806:2013 until April 1st, 2014. The working group is consisting of the following persons:

Jaime Fernandez Gonzalez-Granda (Chair), Sören Scholz, Stephan Fischer, Korbinian Kramber, Stefan Mehnert, Vinod Kumar Sharma, Ozan Türk, Daniele Bernacchioni, Alberto García de Jalón, Martin Perrson, Susanne Hansson, Pilar Navarro, João Santos, Maria João Carvalho, Ulrich Fritzsche, Franck Cheutin,

In the context of transition from EN 12975-2:2006 to EN ISO 9806:2013 João Santos gave the presentation attached as Annex C.

As a result of the presentation it was agreed that the decisions mentioned by João Santos in his presentation have to be definitively reconsidered. This activity will be performed within the above mentioned working group established for the elaboration of procedures for the transition from old EN 12975-1&2 to new EN 12975-1 and new EN ISO 9806:2013.

Furthermore it was agreed that the decision list should be periodically reviewed by the SKN Chairman and Secretary prior to the SKN meetings.

**Item 19: Proposal for a resolution related to new versions of Annex A and Annex E**

Jaime Fernandez Gonzalez-Granda presented the new versions of the two Annexes mentioned above as well as the background related to their elaboration.

Note: According to clause 3.2 of the Solar Keymark Internal Regulations (Document SKN_N0102R8) all proposals for resolutions shall be send to SKN secretariat at least 3 weeks before the meeting. This was not the case for this topic.

Since the documents were not delivered in due time Harald Drück asked if there were any objections if a resolution related to this topic was made anyway. As there were no objections it was agreed to proceed with this topic towards a resolution.

After a short discussion and some questions and answers the following resolution was made.


The Solar Keymark scheme rules shall be modified by the new version of Annex E “Factory production control requirements” as described in document SKN_N0235R0 with the changes included by Jaime Fernandez Gonzalez-Granda resulting in document SKN_N0106_AnnexE_R1.

*This resolution was taken unanimous with 0 negative votes and 2 abstentions.*

Related to the documents for the new version of Annex A a relative lengthy discussion took place and as a result there was the impression that the subject is too complex to be decided now. One main reason for this was the fact that the documents were made available in too short time before the meeting. Hence it was agreed that Jaime Fernandez Gonzalez-Granda will prepare a final draft version of the documents and send this out to the Solar Keymark Network for commenting. Based on the comments he will elaborate a final version as a basis for a resolution to be made at the next Solar Keymark Network meeting.
Some Certification Bodies present ask if it is possible to use the proposed new version of annex A1 during a trial period until the next SKN meeting of October. It is agreed that this is possible and Jaime Fernandez Gonzalez-Granda will send out a revised version to the group. Using this inspection template shows evidence that all the requirements of Annex E are being evaluated since they are reflected on the check list. Using the actual version of Annex A1 it is hard to assure that the inspector is evaluating all aspects of Annex E.

**Item 20: Discussion on update of Annex G “Solar Keymark certificates and sub licences for other brands, product names and sellers”**

At the 15th SKN meeting the Solar Keymark scheme rules were extended by an Annex G “Solar KEYMARK certificates and sub-licenses for other brands, product names, and sellers” as described in document SKN_N0193R3.

As there was the wish to modify the document a working group consisting of the following persons was established:

Pedro Dias (Chair), Sören Scholz, Jaime Fernandez Gonzalez-Granda, Ralf Köbbemann-Rengers, Allard Slomp, François-Xavier Ball, Hans Peter Weiss, João Santos, Jan Erik Nielsen and Eileen Prado as new member for the 16. meeting onwards.

Pedro Dias presented the subject including proposals for modification by means of the presentation attached as Annex D and asked for feedback in order to elaborate a final proposal for a resolution at the next SKN meeting.

The feedback determined by mean of informal indicative voting was in the direction of the elaborated proposal presented by Pedro Dias.

The working group shall, based on the presented content, elaborate a proposal for a decision at the next Solar Keymark Network meeting.

**Item 21: Proposal for more specified requirements for changing the certification body**

The subject was discussed but considered to be too complex to make a resolution now. Hence it was agreed to deal with this topic within the certification bodies working group (chaired by Sören Scholz) with Eileen Prado and Korbinian Kramer as additional participants.

The working group shall elaborate a proposal for a resolution to be made at the next SKN meeting.
**Item 22: Proposal for „Selection and submission of samples in case of extension of product range by manufacturer“**

Sören Scholz presented document SKN_N0232R0 entitled “Proposal for Selection and submission of samples in case of extension of product range by manufacturer“ proposed to be included as paragraph 4.1.2 in the Solar Keymark scheme rules.

The document was discussed but no resolution was made because several open points were identified and also due to the fact that the proposed procedure is not in line with the general Solar Keymark scheme rules.

It was recommended to Sören Scholz that in case the subject is of high relevance for him, he should come up with a proposal for a decision / resolution at the next Solar Keymark network meeting.

**Item 23: Definition of classes and info material to manufacturers related to EN ISO 9806:2013**

Jan Erik Nielsen presented on behalf of Peter Kovacs the document SKN_N0233R0 entitled “Definition of classes and info material to manufacturers related to EN ISO 9806” prepared by Peter Kovacs, Stephan Fischer and Jan Erik Nielsen in the frame of the SCF financed project Classmate.

The initiative was appreciated and the document was discussed considering also the comments and remarks already stated in the agenda.

Finally it was agreed that the document should be revised taking into account the comments and a final version shall be prepared as a basis for a resolution to be made at the next SKN meeting.

**Item 24: Solar Certification Fund Projects – General status report**

By means of the presentation attached as Annex E, Pedro Dias gave first 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.

He also reported about the improvements already performed related to the management of the SCF projects as well as ideas for further improvements.

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 25: Global certification**

Jan Erik Nielsen gave a short presentation about the current status and the latest developments related to global certification. Furthermore he mentioned that the subject of “global certification” will be dealt in much more details in the meeting of the Global Solar Certification Network and the IEA Task 43 (Solar rating and certification) scheduled directly after the meeting of the Solar Keymark Network for March 12th and 13th, 2014.

Jan Erik Nielsen presented the topic and the general ideas and structure by means of the following presentation attached as Annex F.

Jaime Fernandez Gonzalez-Granda reported about the elaboration a Global Solar Network Scheme rules by means of the presentation attached as annex G.

Harald Drück mentioned that at present also the Global Solar Certification Network Working Rules are under development. A second draft version was prepared last week and will be discussed in the Global Solar Certification Network meeting in the afternoon.

**Item 26: Changes in SKN meetings regarding Global Certification**

Jaime Fernandez Gonzalez-Granda presented his ideas related to this topic based on his input to the agenda.

The specific points were shortly disused and it was common consensus that wherever possible synergy effects between the Solar Keymark Network meetings and the Global Solar Certification Network meetings should be used. Furthermore it was agreed to try to limit the meeting time to two days.

**Item 27: Example of a completely correct and “nice” Solar Keymark data sheet for solar collectors**

Based on an activity already stated at the 12th SKN meeting to improve the quality of the work performed by test laboratories, certification bodies and inspectors a working group as establish.

In the meanwhile the composition of the originally formed working group was slightly modified and consisted at the last meeting of the following persons:

Andreas Bohren (Chair), Stephan Fischer, Uli Fritzscbe, Sören Scholz, Daniana Theis, Jef Profke, Vinod Shama, Stefan Mehnert, Henry Rosik, Stamatios Babalis, Julien Heintz, Alberto Garcia, Franz Helmlinger, Jaime Fernandez Gonzalez-Granda, Carsten Lampe, Harald Dehner, Achim Sadenwater, Mark Witt, Malte Kottwitz and from the 15th meeting on also Jan Erik Nielsen

At the 15th SKN meeting the working group was asked to elaborate and example of a completely correct, nice looking Solar Keymark data sheet for solar collectors.

Andreas Bohren mentioned that due to the changes required in the near future as a result of the adoption of EN ISO 9806:2013 the group did not prepare an example of a “nice” data sheet yet.

It was agreed that this should be done until the next meeting for flat plate collectors and vacuum tube collectors.
Additional there was a discussion about the development of a **fundamental new database** that can also be used for the generation of data sheets. In this context, it was decided to establish a working group consisting of the following persons:

Jan Erik Nielsen (chair), Sören Scholz, Stephan Fischer, Korbinian Kramer, Henry Rossik, Pilar Navarro, Pedro Dias, Martin Perrson, Andreas Bohren, Ulrich Fritzsche, Stefan Mehnert

The task of the working group is to formulate requirements and a general strategy on how these requirements can be implemented to be presented at the next Solar Keymark network meeting.

**Item 28: Presentation of a draft data sheet for products of the EN 12977 series**

Jan Erik Nielsen presented the following draft data sheets:

- **System data sheet (EN12976 & EN 12977):**
  Document N0106_AnnexB2_R3.2-system-draft.xlsx

- **Annex B3: Store data sheet (EN 12977-3 & -4):**
  Document: SKN_N0106_AnnexB3_R0.2-store-draft.xlsx

- **Controller data sheet (EN 12977-5):**
  SKN_N0106_AnnexB4_R0.2-controller-draft.xlsx

After the presentation, a short discussion followed. It was agreed that Jan Erik Nielsen will send out the data sheet for commenting again. Based on the input, he will prepare a final version of the data sheets and make them available via www.solarkeymark.org.

**Item 29: Remarks on thermal performance test performed as a basis for Solar Keymark Certificates**

Stephan Fischer presented the following two examples showing incorrect test setups for the thermal performance testing of solar thermal collectors.

With regard to example 1, he pointed out that according to ISO 9806:2013, clause 21.6 collectors having non-opaque backsides need to be installed in front of a surface having low
reflectance ($\rho < 0.2$) to ensure that the performance is not influenced by radiation gains from the back side of the collector. For the collector shown in example 1 he estimates an overestimation of approx. 5 – 10% of the thermal performance due to gains from reflected irradiance from the back side.

The second example showed a concentrating collector receiving reflected radiation not only from the reflector but also from the adjacent ground and building. It was stressed that this also needs to be taken into account when evaluating the data or to be avoided not to influence the measurement.

The two negative examples were shortly discussed but no further action was taken.

**Item 30: Update on CE marking of Collectors related to CPR**

Note: The basis for CE marking of solar collectors is now the Construction Product Regulation (CPR); In previous times this document was called Construction Product Directive (CPD)

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

The fact that the final draft version of EN 12975-1 was not approved by the CEN consultant Mr. Salazar is creating an extremely unpleasant situation since this standard is urgently needed in the context of energy labelling and CE-marking.

Several options on how to deal with the current situation were discussed.

Stephan Fischer presented the latest news related to CE-marking of collectors by means of the following presentation.
One important aspect is that after the publication of the harmonised standard EN 12975-1 there will be a transition period of one year where collectors can be CE-marked. After the expiry of the transition period all collectors shall be CE-marked.

**Item 31: Information on Energy Labelling**

Jan Erik Nielsen mentioned that Gerard van Amerongen could not attend the meeting and submitted his excuses for this. The reason why Gerard van Amerongen is absent is the fact that he is attending a meeting of TC 228 in his role as liaison officer. Hence Jan Erik Nielsen showed the presentation attached as Annex H.

Following the proposal of Gerhard von Amerongen a Solar Keymark “reflection group”, named here, as usual, working group, consisting of the following persons was established:

Gerhard von Amerongen (Chair), Ralf Köbbeman-Rengers, Stephan Fischer, Korbinian Kramer, Lui González-Monroy, Oscar Mogro, Jaime Fernandez Gonzalez-Granda, Ulrich Fritzche, Andreas Bohren, Luca Votta, Sören Scholz, Pedro Dias, Christian Stadler, Harald Drück

The task of the working group is to look how synergy effects between the Solar Keymark and Ecodesign / Energy Labelling can be created with the intention to strengthen the relevance and position of Solar Keymark.

Furthermore Pedro Dias presented the proposal Label Pack+ from ESTIF and asked for the formal support of the project by the Solar Keymark Network. Harald Drück appreciated the proposal and expressed this support.
**Item 32: Current status of PVT testing**

Ulrich Fritzsche reported about the current status of PVT testing, the outstanding work that still has to be performed as well as the open points that have to be solved by means of the presentation attached as Annex J.

**Item 33: Report from the Solar Keymark Certification Bodies / Solar Keymark Inspection Working Group**

Sören Scholz informed about the fact that no reportable activities were carried out since the last meeting.

**Item 34: Information from CEN TC 312**

Since Panayis Konstantinidis being the new TC 312 chairman was not present no general information related to TC 312 was presented.

TC312 WG1: The most important news were already communicated in the context of item 30.

TC312 WG3: The most important news were already communicated in the context of item 31.

TC312 WG2: Vinod Kumar Sharma presented the following slides below.

With regard to WG 2 Maria João Carvalho mentioned that she did not receive the documents send out by Vinod Kumar Sharma. He expressed his astonishment about this and ensured to include her in his email distribution list.
Item 35: Information from CEN CCB
Harald Drück mentioned the request formulated by decision D1.M15 (Global certification – Solar Keymark) and asked about the reaction of CEN CCB related to this.

Jan Erik Nielsen told about an invitation he received from CEN CCB to attend a meeting related to global certification. During this meeting he got the impression that CEN CCB is in principle positive to change their rules in such a way that certification bodies all over the world have the possibility to grant Solar Keymark certificates. However, they requested a more specific proposal how to do this. Since the development of appropriate procedures is just under development within the Global Solar Certification Network the proposal was not submitted until now. This will be done when the appropriate documents from the Global Solar Certification Network are available.

Concerning the future outsourcing of KEYMARK administration there is a call for tender announced at: http://www.cen.eu/news/calls/Calls/Call_for_tender_CEN_Keymark.pdf.

Item 36: Presentation of selected SCF project results
Pedro Dias presented the selected SCF project results by means of the presentation attached as Annex J

Item 37: Project presentation "Strengthening Quality Infrastructure for Solar Energy in Maghreb"
Imed Landoulsi from the ANME (Agence Nationale pour la Maitrise de l’Energie), Tunisia presented the above mentioned project by the presentation attached as Annex K.
Harald Drück thanked Imed Landoulsi for his interesting presentation and appreciated the activity of PtB as an important instrument to provide the basis for Solar (Keymark) certification in the Maghreb region.

Item 38: Experience with the misuse of the Solar Keymark
No new cases to be reported.

Item 39: Any other business

Item 39.1: Testing of heat pipes mandatory from 1/2014 onwards
Ulrich Fritzsche mentioned that the testing of heat pipes being part of vacuum tube collectors is mandatory since the January 1st, 2014. The test procedure to be used is described in Annex F of the Solar Keymark Scheme rules.
Furthermore he mentioned that the heat pipe issue is a nice example on how SCF funded projects can contribute to the improvement of the quality of solar thermal collectors since the investigations related to this issue were initially performed within an SCF funded project and are now part of the tests requirements for Solar Keymark and soon also SRCC certification.
Item 39.2: National certification schemes for stores

Based on an ad-hoc survey initiated within the Solar Keymark network the day before Pedro Dias mentioned that he only received input concerning the situation in Spain. This is shown below.

Since the aspect of certification of stores is quite important in order to promote the testing of hot water and combistores according to EN 12977-3 and -4 and the certification of stores according to the Solar Keymark scheme rules it was agreed to investigate this topic in more detail.

The participants were requested to send information about their national certification schemes to Pedro Dias at latest by the end of March 2014. He will compile the information and distribute it to the SKN.

Item 40: Important national developments

No important national developments to be presented were mentioned.

Copy of Item 5: Date and place of next meetings – since next meetings are usually stated at the end of the minutes

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

The 17th SKN meeting (autumn 2014 meeting) is scheduled for

September 30th, 13:00 hrs to October 1st, 14:00 hrs, 2014 (end of day one at 18:00 hrs)
at Brussels, Belgium at the premises of CEN, provided the costs related to this are moderate.

Note: The next CEN TC 312 meeting is scheduled for October 2nd, 2014

The 18th SKN meeting (spring 2015 meeting) is scheduled for

March 10th, 13:00 hrs to March 11th, 14:00 hrs, 2015 (end of day one at 19:00 hrs)
and will take place in Rome based on an invitation of Vinod Kumar Sharma from ENEA.

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 at Wels, Austria based on an invitation of Harald Dehner from ASiC.

Item 41: 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 Pedro Dias for managing the Solar Certification Fund project and the financial issues of the Solar Keymark Network. Furthermore he thanked Pilar Navarro Rivero and Salvador Suárez from ITC for hosting the meeting.

The participants thanked Harald Drück for his excellent conduction of the meeting.

The meeting ended at 13:15 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 18th, 2014

**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

16th Meeting, Las Palmas de Gran Canaria, March 11th – 12th, 2014

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORGANISATION</th>
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<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>
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<tr>
<td>Harald Dehner</td>
<td>ASIC</td>
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<tr>
<td>Harald Drück</td>
<td>ITW</td>
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<tr>
<td>Jaime Fernandez Gonzalez-Granda</td>
<td>AENOR</td>
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<td>Jan Erik Nielsen</td>
<td>Solar Key Int.</td>
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<td>João Santos</td>
<td>CERTIF</td>
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<td>Katharina Meyer</td>
<td>DIN CERTCO</td>
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<td>Korbinian Kramer</td>
<td>Fraunhofer ISE</td>
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<td>Maria João Carvalho</td>
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<td>Ozan Türk</td>
<td>SPF</td>
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<tr>
<td>Pedro Dias</td>
<td>ESTIF</td>
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<tr>
<td>Ralf Köbbemann-Rengers</td>
<td>Bosch / BDH</td>
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<td>Sören Scholz</td>
<td>DIN CERTCO GmbH</td>
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<td>Stefan Mehnert</td>
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<td>Stephan Fischer</td>
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<tr>
<td>Susanne Hansson</td>
<td>SP Technical Research Institute of Sweden</td>
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<tr>
<td>Ulrich Fritzsche</td>
<td>TÜV Rheinland Energie und Umwelt GmbH</td>
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<td>Vinod Kumar Sharma</td>
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<td>Christian Stadler</td>
<td>General Solar Systems GmbH</td>
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<td>Peter Markart</td>
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<td>Beijing Solar Energy Research Center</td>
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<tr>
<td>Xiaowen Zhou</td>
<td>Beijing Tsinghua Solar Ltd.</td>
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<td>Tao He</td>
<td>China Academy of Building</td>
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<td>Min Wang</td>
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<td>Emmanuel Leger</td>
<td>Centre d’essais BELENOS</td>
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<tr>
<td>Sophie Bocquillon</td>
<td>EUROVENT CERTITA</td>
</tr>
<tr>
<td>Name</td>
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<td>Carsten Lampe</td>
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<td>Giovanni Bellenda</td>
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<td>Giacobbe Braccio</td>
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<td>Massimiliano Florio</td>
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<td>Luca Votta</td>
<td>Kiwa Italia SpA</td>
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<td>Maria Rodrigues</td>
<td>ADENE</td>
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<td>Jana Levicka</td>
<td>TSU Piestany</td>
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<td>Oscar Mogro</td>
<td>BDR Thermea (Baxi Calefaccion)</td>
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<td>Pilar Navarro</td>
<td>Technological Institute of canary</td>
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<td>Luis González-Monroy</td>
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<td>Martin Persson</td>
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<td>Imed Landoulsi</td>
<td>Agence Nationale pour la Maitrise</td>
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<td>DECC</td>
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<td>Alex Stuart</td>
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<td>Les Nelson</td>
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<td>Eileen Prado</td>
<td>SRCC</td>
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**Participants electronically present**

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<th>Name</th>
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<tr>
<td>Jim Huggins</td>
<td>Solar Rating &amp; Certification Corp. (USA)</td>
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<tr>
<td>George Roditis</td>
<td>Applied Energy Laboratory (AEIab) (CY)</td>
</tr>
<tr>
<td>Stamatios Babalis</td>
<td>National Center for Scientific Research &quot;DEMOKRITOS&quot; (GR)</td>
</tr>
<tr>
<td>Ken Guthrie</td>
<td>Sustainable Energy Transformation (AU)</td>
</tr>
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Annex B1
Renewable Heat Incentive (RHI)

Renewable Heat Incentive
Options and opportunities for industry

Renewable Heat Incentive
- EU Renewable Energy Directive's 2020 target for renewables
- Prepare for mass rollout of renewable heat in 2020s and beyond
- A world-first policy to incentivise the uptake of renewable heating systems like biomass boilers and solar thermal in all sectors
- Non-domestic scheme was launched in November 2011
- Domestic scheme will launch Spring 2014
- Strong growth expected in 14/15, with 15/16 having overall RHI budget of £430m

Which scheme is right for me?

<table>
<thead>
<tr>
<th>Domestic</th>
<th>Non-domestic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eligibility</td>
<td>Property must be a single domestic dwelling - Social/private landlords and self builders</td>
</tr>
<tr>
<td>Payment period</td>
<td>Payments made over 7 years, based on heat produced over 20 years</td>
</tr>
<tr>
<td>Measuring stage</td>
<td>Deemed renewable heat output (potentially with credits for second homes)</td>
</tr>
<tr>
<td>Tariff setting</td>
<td>Compensates for additional costs of installing renewable heat technologies compared to conventional heating technologies</td>
</tr>
</tbody>
</table>

Is the domestic RHI for me?

- Available for households onand off the gas grid – those without mains gas have the most potential to save on fuel bills and decrease carbon emissions

Domestic RHI: For those intending to apply
- Only the owner of an eligible heating system can apply. Requirements are:
  - Energy efficiency measures (Clean Deal Assessment and loft and cavity wall insulation)
  - Radiator heating system must be MCS certified (products be MCS or SE certified)
  - Heat pump or biomass system installed on or after 19th July 2009
  - Any part of the heating system must be new – not used before commissioning date
  - If system installed on or after launch date, must apply within 12 months of commissioning
  - Public grants deducted before RHI payments over 7 years

Solar Thermal opportunities
Presented at 19th Solar Keymark Network meeting, Gran Canaria
Jacqui Andersen 11 March 2014
Summary

- Domestic RHI is finally ready to go!
- Should generate a lot of interest from homeowners

- DECC estimates around 18,000 solar thermal installations could be supported in the first year of the RHI and more the following year

- Represents great opportunity for development of solar thermal industry in Great Britain

Thank you!

jacob.andresen@decc.gsi.gov.uk
Annex B2
UK Domestic Renewable Heat Incentive

The Renewable Heat Incentive (RHI)
- The Renewable Heat Incentive has two parts:
  - The non-domestic scheme launched in 2011
  - The domestic scheme to be launched Spring 2014
- Ofgem’s role as administrator of the RHI is to:
  - Publish guidance materials
  - Receive and assess applications
  - Make payments to successful applicants
  - Ensure ongoing compliance with scheme rules

Domestic Renewable Heat Incentive (DRHI)
- For the domestic scheme there are ‘rules’ that the...
  - Person must meet
  - Property must meet
  - Installation must meet
  - And the product that has been installed must meet
- These are set out in government regulations.

The Application Form

Certificates the customer needs
- Energy Performance Certificate (EPC)
- Green Deal Advice Report (GDAR)
- Microgeneration Certification Scheme (MCS) Installation Certificate
The clever bit...

Eligibility – Product (Heating System)
- One of the eligible technology types.
- The product must be MCS certified (or equivalent, i.e., Solar Keymark).
- But not all MCS/Solar Keymark products eligible, e.g.,
  - Heating must be via water (no air-to-air heat pumps)
  - Only electrically driven heat pumps
- Air Quality Certificate needed for new biomass installation
- Installed on or after 15 July 2009

Solar Collectors
- Product characteristics that define eligibility of solar collectors.
  - Must be either a flat plate or evacuated tube collector.
  - Must not generate electricity, no PV-T.
  - Must have been tested to a specific standard as named in the regulations...

Solar Collector Standards
The standards listed in the Regulations for solar thermal plants are:

MCS certified product list

Product data from MCS

- Source: MCS/Solar Keymark product fields
- Data quality: Incomplete or incorrect data.
- Note: The table lists the necessary information for MCS/Solar Keymark certification.

- Heating system type
- Product name
- Description
- Model
- Manufacturer
- Certification number
- Status
- Additional information
- Country of origin
- Input
Sources of data/evidence
- Test Certificates
- Test reports
- Test laboratories
- Certification Bodies
- Online resources – Solar Keymark/Certification Body databases
  - http://solarkey.db/solarkeymarkidata/apiCollectorCertificateTable.aspx
  - http://research.cen.eu/keymark/
  - http://www.dinaco.to.com/search/companies_with_product<low>
  - www.produktidentenbank.gest.at

Test Reports

Test Certificates

Databases

Creating the Product Eligibility List
Product Eligibility List

<table>
<thead>
<tr>
<th>Product Type</th>
<th>Name</th>
<th>Eligible</th>
<th>Not Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar Thermal</td>
<td>SolarWatt Hybrid</td>
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<td>No</td>
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<td>Honeycomb</td>
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<tr>
<td>Biogas</td>
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<td>No</td>
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<tr>
<td>Renewable</td>
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<td>No</td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Solar Keymark</td>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Not Eligible</td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Data for Solar Keymark collectors

Out of 2,135 products — including historical products:
- 1,580 are eligible
- 202 need some minor detail to become eligible
- 17 are not eligible
- 38 might not be eligible because of older test standards or might be PV-T
- 293 are missing the required information to define eligibility.

We need your help to make this work...
- In the short term:
  - We need the help of Solar Keymark and Solar Keymark certification bodies to close the gaps
  - Help keep the list accurate and up to date
- In the long term:
  - Work together to expand the Solar Keymark database of certified solar thermal collector to make product data more accessible, consistent and useful for installers and customers.

Thank you very much
- You can find more information on [www.ofgem.gov.uk](http://www.ofgem.gov.uk)
Annex C
Transition from EN 12975-2:2006 to EN ISO 9806:2013

Decision D6.M3
Mechanical Load Tests of Tubular Collectors
- “The experts present decided that the negative pressure test of the collector according to 5.9.2 of EN 12975-2:2006, does not have to be performed on tubular collectors due to the following reason:
  The negative pressure test is intended to assess the extent to which the fixings between the collector cover and collector box are able to resist uplift forces caused by the wind.
  This is not relevant for tubular collectors.”

Decision D8.M10
Pre-ageing of Solar Collector Test Samples
- “The experts present decided that before performing a rain penetration test, the solar thermal product should be pre-aged to at least the following extent, by using either possibility 1 or possibility 2.”
  - Possibility 1: Expose the product at least for 15 valid days (according to the validity criteria of EN 12975 – Clause 5.4.).”
- “Possibility 2: Two stagnation tests using a solar simulator providing at least 850 W/m² and 10 °C ambient temperature, with a duration of irradiance of at least 4 hours. In between this two stagnation tests, the collector has to reach approximately ambient temperature”.
  - “Exposure to outdoor conditions for at least 15 days, not requiring any boundary conditions to be fulfilled.”
CERTIF – Associação para a Certificação

**Decision D6.M11**

SK Certification of Concentrating and Tracking Collectors

- “SK certification is possible, since they are explicitly mentioned in the scope of EN 12975-1 and 2.”
- “The reliability testing of concentrating and tracking collectors shall be performed as described at present in the latest version of Annex P entitled “Reliability testing of concentrating and tracking collectors” of FpEN 12975-2.”

CERTIF – Associação para a Certificação

**Recommendation:**

- Decision D6.M3 - Withdraw;
- Decision D8.M10 – Review, clarifying that the pre-ageing should be performed when the collector has been subject to modification;

CERTIF – Associação para a Certificação

Maintenance of the SKN List of Decisions:

- Periodical review of the list?
- Need for a policy/procedure?
- Who should be responsible? (SKN Secretariat? Set up a Working Group?)
- Re-evaluation, review and withdrawal of decisions?

CERTIF – Associação para a Certificação

Thank you for your attention

João Santos (CERTIF)
with the collaboration of Maria João Cavado (LNEC/LES)
Lisbon, Portugal, March 7th 2014
Annex D
Certificates for different brands

Current text
- The first family of certified collectors or first family of systems is considered a main type. After the first certificate is granted for a collector or a system, the rest of certificates granted for collectors or for systems are all considered subtypes.
- In a case where a manufacturer already has a certified collector and wishes to certify a new family of collectors and this new family will have many different trademarks, there are two options:
  - All trademarks are listed into one certificate. It is considered as a subtype and the fee to be paid is the “subtype fee”
  - Each trademark has its own certificate. Each certificate will have a different number and each trademark is considered as a subtype. The fee for each certificate is the “subtype fee”

Certification of different brands
- Discussion ground:
  - Simplify process
    - Smooth the creation of new brands
    - Clarify procedures
    - Reduce bureaucracy
  - Ensure quality assurance
    - Provide different certificate numbers
    - Facilitate surveillance of SK certificates
  - Reduce certification costs for manufacturers
    - Not jeopardising SKN funds
Next steps

- Draft proposal
  - Presentation for discussion at SKN Spring
  - Editing Annex C and Annex G
- Final proposal
  - Review discussion inputs at SKN
  - Present timely proposal for changes
  - Fees:
    - propose soft solution — small difference between subtypes in 2015
    - Revise in 2016 based on number of ST A and STB
Annex E
Solar Certification Fund – General Status Report

Solar Keymark Network meeting
16th meeting
11-12 March 2014
ITC - Spain

Solar Certification Fund

- 50 projects supported so far
  - Closed: 25
  - Reporting: 8
  - Deferred: 1
  - On-going: 15
  - Cancelled: 1

- 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

Solar Certification Fund

- Closed projects
  - Report and deliverables approved by the SCF Steering Group
  - Balance payment done or being prepared
    - Invoices requested or payment in progress
  - Deferred projects
    - Projects that are on-hold
    - Waiting for one of the conditions for the project to occur (external)
  - Cancelled projects
    - One case insar - 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 also be 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

Closed projects (since September 2013)

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<tr>
<th>Reference</th>
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<th>End Date</th>
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### On-going

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**Solar Certification Fund**

- New improvements
  - Reducing time for evaluation
  - Improve final report form
  - More straight forward for evaluation
- Simplification and integration of forms
  - Application & project summary
  - Interim & final report
  - Indication of publishable deliverables

### Project deliverables list

- Currently only SKN
- To be made public
  - Previous projects
    - Ad-hoc authorisation
  - New projects
    - Included in reporting forms

### Solar Keymark Network meeting

16th meeting
11-12 March 2014
ITC - Spain
Annex F
Global Solar Certification – General Approach

What is Global Solar Certification (GSC)?
- Global Solar Certification is a third-party certification of solar collectors tested according to ISO 9001.
- Certification bodies are accredited/certified bodies.
- Testing is done by accredited/test labs.
- Certification bodies participating in Global Solar Certification shall acknowledge testing and inspection done by other participating certification bodies and their test labs and inspectors.
- When the certification body is running a regional/local certification scheme, this scheme shall be associated with the Global Solar Certification scheme.
- Differences between regional/local schemes shall be documented and accepted by the GSC.

Concept of Global Solar Certification (GSC)
- Global Solar Certification creates a transparent and auditable certification process.
- Certification bodies are accredited/certified bodies.
- Testing is done by accredited/test labs.
- Certification bodies participating in Global Solar Certification shall acknowledge testing and inspection done by other participating certification bodies and their test labs and inspectors.
- When the certification body is running a regional/local certification scheme, this scheme shall be associated with the Global Solar Certification scheme.
- Differences between regional/local schemes shall be documented and accepted by the GSC.

Global Solar Certification - from Industry Point of View
- Global Solar Certification makes it possible for manufacturers to utilise existing local certification schemes under the Global Solar Certification framework.

Members in Network and Board
- Global Solar Certification Board (GSCB):
  - Global Solar Certification Approval Committee
  - Member Committee
  - Industry Representatives

Structure of Network
- Global Solar Certification Network:
  - Member Committees:
    - Asian Member Committee
    - European Member Committee
    - Latin American Member Committee
  - Global Solar Certification Board (GSCB):
    - Approval Committee
    - Member Committee
    - Industry Representatives

Global Solar Certification Approval Committee
- Members:
  - Manufacturers
  - Test Laboratories
  - Industry Associations

Global Solar Certification Member Committee
- Members:
  - Manufacturers
  - Test Laboratories
  - Industry Associations

Industry Representatives
- Members:
  - Manufacturers
  - Test Laboratories
  - Industry Associations
Annex G
Global Solar Certification – Scheme rules

1. Share the working method
2. Share the development of ideas
3. Share conclusions

THE WORKING METHOD

- 5 web meetings from November to March
- Members of SCF project
- Sharing the workload: same agenda at every meeting:

| Task/Decision | Working group responsible for preparing draft for
|---------------|--------------------------------------------------|
| Standards/Task | Working group responsible for preparing draft for
| Joint/Mailbox | Working group responsible for preparing draft for
| Automation | Working group responsible for preparing draft for
| Certification | Working group responsible for preparing draft for
| Equipment | Working group responsible for preparing draft for
| Law | Working group responsible for preparing draft for

THE DEVELOPMENT OF IDEAS

- A documented comparison of CBs’ schemes with Global Scheme
- A need for a Board with an infrastructure for full time Secretary and standing working groups
- An alliance or coalition between industry, laboratories and certification bodies

CONCLUSIONS

DRAFT versions of two main documents presented and approved at ESC meeting of 2016-09-13:

- Global Solar Certification Scheme Rules
- Global Solar Certification Mutual Recognition Rules Among Certification Bodies and requirements for involved bodies
### CALENDAR FOR NEXT 6 MONTHS

**Continuous work by members using methodology of web meetings every month to develop final documents for approval at GSC meeting (send 15 by July):**

<table>
<thead>
<tr>
<th>Leader</th>
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<tr>
<td>Jaime Fernández</td>
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<td>Soeren (Jaime and Stephan)</td>
<td>Annex A: Product Requirements (using Annex A.3 of SK rules)</td>
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<tr>
<td>Susanne Hansen</td>
<td>Annex Template of certificate</td>
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<td>Jim Huggins</td>
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<td>Soeren Scholz</td>
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<td>Stephan Fischer</td>
<td>Annex C: Requirements and procedure for peer assessment for testing laboratories</td>
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<td>Les Nielsen</td>
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<tr>
<td>Soeren Scholz</td>
<td>Annex D: Peer Assessment Report</td>
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### CALENDAR FOR NEXT 6 MONTHS

Web meetings are set for the following dates:

- 26 April 16:00
- 27 May 16:00
- 23 June 16:00
Annex H

Ecodesign & Energy Labelling

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**Ecodesign / energy labelling - update -**

Gerard van Amerongen  
vAConsult (The Netherlands)  
Las Palmas 2014 03 11

---

**vAConsult**

SCF 4C16a-Ecodes-12  
- Ecodesign implementation -

- Activities:
  - Drafting of the document and technical report
  - First trial with workshop (Frankfurt)

- Results:
  - No final results

- Issues:
  - Unexpected extra public enquiry on transitional documents
    - Results expected in march an needed to complete the document and start with the workshop

---

**Ecodesign and energy labelling - Solar Keymark -**

- General remark:
  - No third party testing required!
  - No certified products required!

- Test institutes:
  - Testing according to harmonized standards
  - Clients:
    - Industry (for the labels)
    - Member states (verification market surveillance purposes)

---

**vAConsult**

SCF 4C16a-Ecodes-12  
- Ecodesign implementation -

- Activities:
  - Drafting Ecodesign documents (manual)
  - First trial with workshop (Frankfurt)

- Results:
  - Draft manual (with templates and all instructions needed)

- Remarks:
  - Unexpected extra public enquiry on transitional documents
    - Daily in the project. The last info is needed.
    - New version expected end of march

- September 2013: publication of the regulations
  - into force September 2015

- December 2013: Extra consultation on latest version of transitional documents (that is: the methods)
  - ESTIF commented. Main issue:
    - Water heaters and combi heaters
      - rising to the efficiency of the backup heater
        - Proposal submitted

- Next phase: harmonization of standards to replace the transitional document.
  - 12975, 12976, 12977-3, 12977-4 and 15316-4-3

---

**vAConsult**

Ecodesign and energy labelling  
- Solar Keymark -

- General remarks on Solar Keymark:
  - SK and trade barriers:
    - Still valid: Ecodesign is limited to energy performance
  - Accurate and reliable results are needed for success
    - Certified product data is added value
    - An important challenge is to make the documentation available
      - Accurate and reliable data
      - See example "combination heater"
Ecodesign and energy labelling - Solar Keymark -
• Suggestions for future Solar Keymark involvement:
  - Distribution of reliable and accurate data
  - Support to data distribution schemes and as such force those systems to use accurate and reliable data
  - Publication of technical data in formats fitted to the technical documentation formats
  - Create a Solar Keymark label on certified energy labels
    - Safe guarding the data, calculations and the reliability
    - Communicate the added value of SK (other quality aspects)
  - Implement a cooperation model with other certifications to promote the use of good data and procedures
• Start a “reflection group” on how Ecodesign can make SK stronger
  - I am available for contributions

Proposal from ESTIF
• Labelpack A+ (Project proposal for H2020)
  - Facilitate the exchange of product fiches and a calculation tool for all actors in the supply chain in the form of an online application
  - Provide guidelines, as well as standardized answers to clarify the responsibility of each actor in the supply chain. (Focus on installers and SMEs)
  - Provide tailor-made information for end consumers, which will either be directly accessible by them, or used by dealers to explain the significance and added value of the “package label”

Last sheet
I am very sorry not being present at your meeting
Next time I will be there!
Any questions can be addressed to vaconsult@vaconsult.net
Gerard van Amerongen

Proposal from ESTIF
• Partners:
  - Solar thermal and heating industry associations
  - Energy agencies and/or public authorities in charge of the implementation and/or market surveillance of energy labelling
  - Installers’ organisation in charge of training and/or certifications and preferable specialised in RES
  - Organisations and/or NGO in charge of promotion of EE to consumers
  - IT specialist

Water heater - Package label -

[Diagram showing the flow of product from supplier to installer to dealer to consumer]
Proposal from ESTIF

- Cooperation with SKN
  - link with the Solar Keymark and the SK database
  - improving the added value of the SK licences as well as
    the added value of the online application
  - SK in activities of promotion education towards
    consumers, installers and industry players

- What is requested:
  - Formal support/endorsement of the project by SKN
  - SK cooperation with the project
    - Expertise
    - Database
Annex I

Current status of PVT

Current status – Solar Keymark experiences

- First PVT-collector were tested and certified according to new SKN-scheme rules
- Integral design solution tested (direct laminated PVT)
- Complete IEC 61215 and 61730 test by external PV lab
- "uncovered" PVT without critical stagnation temperature
- Certificate issued by DINCERTCO

Open Points (for "uncovered" PVT's):
- Integration uncoordinated steady state results in data sheet
- Harmonized way for performance result visualization
- Which figures beside the thermal performance shall be given?

New wording for "uncovered" or "unglazed" needed

- Neither "uncovered" nor "unglazed" is really applicable for typical PVT
- Better something like "Collector without front side insulation" (one for the best suggestion)
- As the absorber (cell) is not in direct long wave exchange with the cold sky, results may be based on global and not net irradiation like e.g. for "real" uncovered pool heater
- Testing as covered collectors will reflect in electrical over estimation
- Strong wind dependency shall be taken into account!

Solar Keymark Data Sheet – open questions

- Integration of electrical output on page 1 and/or page 2?
- Electrical output based on own measurements or manufacturer information (labels)?
- If measured, how to deal with the different electrical performance classes of one PV-laminate?
- Should we only integrate the resulting cell temperature?
- If we give electrical performance figures, they will always be lower than STC-values (lead to discussions)
- If we compare to Nominal Operating Cell Temperature NOCT, result in conflict with irradiation level (1000/800 W/m²)

Manually "filled" data sheet

Visualization of thermal test results
**Determination of Equivalent Cell Temperature ECT as the link between electrical and thermal loop**

- The equivalent cell temperature ECT (IEC 60904-2) can be easily detected simultaneously with the thermal performance characterization.

\[
\text{ECT} = \frac{25 - \frac{T_{cell}}{K_{Reference}}} {1 - \frac{T_{cell}}{K_{Reference}}}
\]

- ECT is the only relevant value for determination of electrical output in addition to the values out of STC measurements.
- The measurement of the open circuit voltage Voc and the STC values are sufficient to determine the actual cell temperature.
- To fill the "weak point" in the existing PVT models, the relation between cell and fluid temperature as well as wind speed must be considered.
- Under consideration of ECT, the wide range of PVT's with high to low thermal conductivity could be covered.
- Clear responsibilities for electrical and thermal experts are given. The electrical measurement for the ST experts is limited to Voc.

**Reporting of PV related results:**

- Cell test parameter values for "Steady State"

**Visualization of thermal performance and equivalent cell temperature**

- Clear visualization of cell temperature dependency on:
  - Fluid temperature
  - Wind speed
  - Independent from absolute temperature ranges
  - Clear system boundaries for ST and PV
  - Only minor additional electrical characterization
  - No need for new test procedures
  - Indoor and outdoor applicable
  - Highest reproducibility with indoor testing

**Remaining work for overall performance visualization**

- Wind speed dependency consideration?
- Cell temperature distribution and influence on electrical performance and ECT
- ECT applicable for collectors with inhomogeneous temperature distribution?
- Validation of a general equation for ECT behavior
- Integration of ECT behavior into simulation tools

**Reliability and safety of PVT-Collectors**

- Safety aspects more critical due to the combination of water and electricity
- Thermal stagnation (worst case temperature, T=100°C is possible)
- A standardized way for determination of critical stagnation temperatures shall be defined
- The Equivalent Cell temperature may also be a proper value for a "standardized stagnation temperature"
- Beside additional criteria for higher temperatures, a clear re-testing guideline for low temperature application shall be adapted
Reliability and safety of PVT-Collectors

- Challenge for thermal components: accelerated aging test from PV qualification (climatic tests)
- Thermal Shock for PV Cells by Cold water (seems to be uncritical for uncovered PVT)
- Electroluminescence measurements for quality control
- PV-laminates used for PVT application are mostly certified as PV-module but will be modified to a new PVT product with the risk of losing its certification
- Most PV-modules are not specially designed for PVT application

Outlook on PVT module qualification

- German (DIN) project for PVT test procedure evaluation did start in 2013
- Validation of test procedure until mid of 2014 (realistic for uncovered PVT)
- Steady state and QD will be considered
- Presentation of test procedure as draft for standardization work
- Technical specification in 2015 possible
- Integral PVT tests also now possible
  - according to PV and ST standards
  - Additional combined tests
- SKN WG-PVT will restart this summer

Thank you for your attention!
Annex J
Presentation of selected SCF project results

**Reports on SCF projects**
Gerard van Amerongen
vAConsult (The Netherlands)
Las Palmas 2014 03 11

**vAConsult**

**a short apology**
- At the same time as the SKNG meeting, a meeting of TC228 is being held.
- This is the most important meeting of the previous period
- The drafts of all the revised standards on EPBD will be finalized (including our EN15316-4-3) for public enquiry
- I am representing you in this matter and I am responsible for the EN15316-4-3.
- That is reason I have to skip your meeting.

**vAConsult**

**Contents**
- Running project by vAConsult:
  - SCF 4C12 LiasTC164-12
  - SCF 4C12-LiasTC371-12 (+ Jan Erik)
  - SCF 4C12-LiasTC228-12 (+ Jan Erik)
  - SCF 4C17-ENmandate-12
  - SCF 4C16a-Ecodes-12 (+ ESTIF)

**vAConsult**

**SCF 4C12 LiasTC164-12 - Drinking water**
- Activities:
  - 26/09/2013: report TC16 (Freiburg)
  - 16/10/2013: report TC164, WG2 (Bonn)
  - 28/11/2013: report ESTESC (ESTIF, Berlin)
  - 11/03/2013: report SKNG (as Palmas)
- Results:
  - Legionella report and CoP has been accepted for further development to a CEN-TR by:
    • TC164, WG2 and TC312 (new common work group)
    • Preparations at TC164 WG2 on revision EN 806-1 and -2
      • (Solar standards reference to these standards)

**vAConsult**

**4C12-LiasTC371-12 - Energy Performance of Building project group**
- Activities:
  - Work on umbrella for revision of standards
    • CEN mandate 480 (EPBD)
    • Relevant for solar thermal: TC228 standards
  - Meetings commonly together with TC228 WG2
  - See 4C12-LiasTC228-12
- Results:
  - Added to the solar thermal relevance of “umbrella”

**vAConsult**

**SCF 4C12-LiasTC228-12 - Heating systems in buildings**
- Activities:
  - Development of standards (CEN mandate 480, EPBD)
    • Solar relevant: EN15316-4-3
  - Participation in Coordination group and Work group 4
    • Four meeting within the contract period
  - Building on acceptance in solar thermal community
- Results:
  - Final proposal EN15316-4-3 for public enquiry
    • Revised method B (Eodesign) and new hourly method
    • Solar PV is now integrated
    • Future: harmonization (mandate 495, Eodesign)
New Hourly method

- EN 15316-4-3, method 3:
  - Added: hourly method collector & collector loop
- New standard on performance storage systems.
  - Modelling three options solar thermal:

vAConsult

SCF 4C17-CENmandate-12
- CEN mandate 495 Ecodesign -

- Activities:
  - Attending two workshops Ecodesign coordination group
  - Drafting a workplan for the TC312 work groups
  - Reporting to TC312, ESTIF [ESTESC] and SKNG
- Results:
  - Workplan for work groups
  - Experts involvement in revision of standards (SCF proposal 2013).

vAConsult

SCF 4C16a-Ecodes-12
- Ecodesign implementation -

- Activities:
  - Drafting of the document and technical report
  - First trial with a workshop (Frankfurt)
- Results:
  - No final results
- Issues:
  - Unexpected extra public enquiry on transitional documents
  - Results expected in March, an needed to complete the document and start with the workshop

vAConsult

SCF 4C16a-Ecodes-12
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  - First trial with workshop (Frankfurt)
- Results:
  - Draft manual (with templates and all instructions needed)
- Remarks:
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  - Daily in the project. The last info is needed.
  - New version expected end of March

Last sheet

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Next time I will be there!
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vacconsult@vacconsult.net
Gerard van Amerongen

I wish you a productive meeting.
Annex K
Project presentation
Strengthening Quality Infrastructure for Solar Energy in Maghreb

Overview

- August 2012 – July 2016
- Budget 2 Mio EUR
- 25 partners
- Central topic: Solar water heaters
- Objective: Consolidation of the quality infrastructure productive capacity for thermal solar energy (equipment and training) and the implementation of a network across the region.

Four axes to develop

- Laboratories and standardization: improvement of conformity assessment & skills development within the national institutes for standardization and in the testing laboratories
- Metrology: improvement of metrological traceability
- Education: support to universities and research institutions
- Networking: awareness and education campaigns on the quality infrastructure theme & development of regional networks

Status of the project (1)

Axe 1 "laboratories & standardization"

Carried out activities:
- Delivery of equipment, training in Agilent Vee, study trip, training in ISO 17025
- Roundtable on solar thermal standards, participation in TC180
- Training remains to achieve after the delivery of the equipment (in progress)
- Outstanding:
  - Monitoring of labels development: Return of essential information about the development in international labeling / regional / national in connection with solar thermal, in order to clarify the guidelines to be followed for the work on standards.

Status of the project (2)

Axe 2 "metrology"

Each country in the Maghreb will get support to be able to offer calibration services for the following instruments:
- Tunisia: wind speed (anemometers)
- Algeria: solar radiation (pyranometers)
- Morocco: flow rate (flow meters)

Status of the project (3)

Axe 3 "universities"

Development of a Blended Learning course on quality infrastructure for solar energy for university lecturers
- Starting date: December 2014 (E-learning of six months with two seminars and one training module)
**Status of the project(4)**

- **Axe 4 “networking”**

  The foundations of inter-country cooperation have been laid mainly in terms of formalization of contacts and communication of information (edition of a newsletter, etc.).

  Actions, borne by partners (information meetings in countries, awareness-raising campaigns) are still to be discussed according to the needs at the national level.

  Establishment of a collaborative platform, especially for archiving and sharing of documentation.

  

Contact: lea.zappenfeld@ptb.de
All publications available on: [http://www.ptb.de/o5](http://www.ptb.de/o5)