



## Minutes

### 3. Solar Keymark Network Meeting

#### Item 1: Opening of the meeting

The chairman of the Solar Keymark Network, Harald Drück opened the meeting and welcomed the participants. He 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 and manufacturers) working according to the Solar Keymark scheme rules.

The meeting took place on Tuesday, October 2<sup>nd</sup>, 2007 from 9.10 till 12:50 hrs at arsenal research, Austria, Room ??

The invitation and the agenda of the meeting was sent out by email dated September 25<sup>th</sup>, 2007. The version of the agenda named "1. Draft Agenda" (File: SK\_NW\_AG3A 25/09/2007) was accepted by the participants with changes concerning the inclusion of several additional items. The final agenda that was agreed on at the beginning of the meeting is included as Annex B.

Furthermore the minutes of the 2<sup>nd</sup> Solar Keymark Network meeting (File: SK\_NW\_MIN2A.PDF 18/02/2007 sent out by email dated February 20<sup>th</sup>, 2006) were approved without any changes.

#### Item 2: Introduction of participants

The participants were asked to introduce themselves. The list of participants is attached as Annex A.

#### Item 3: Presentation of the Solar Keymark II Project

A short presentation about the Solar Keymark II project is given by Jan Erik Nielsen. For further information see: [www.solarkeymark.org](http://www.solarkeymark.org)

#### Item 4: Procedures for using existing tests for Solar Keymark certification

Jan Erik Nielsen mentioned that from the industry there is a strong wish to be able to use existing tests for Solar Keymark certification.

After a discussion it was agreed that the procedure for doing this shall be in line with the Solar Keymark scheme rules.

It was realised during the discussion that it is possible to use test reports as a basis for Solar Keymark certification if they are less than two years old and if the test report is issued based on the latest version of the corresponding standard.

Furthermore the other Solar Keymark relevant criteria such as the factory production control and the picking of the sample have to be fulfilled.

### **Item 5: Procedures for changing the certification body**

Jan Erik Nielsen explained that in some cases it can be convenient for a manufacturer to change the certification body and ask for certification by using already existing test reports.

Reasons for this wish from the manufacturer can e. g. be if

- a certification body in his own country is empowered
- another certification body is cheaper / gives better service

With regard to this the following decision was made:

#### **Decision – related to “Procedures for changing the certification body ”**

The experts present agreed on the following:

- It shall be possible for a licensee to obtain a new license from another certification body without re-testing and re-inspection
- Old license shall be withdrawn when new one is issued
- Change of license should be done within 3 months after the request
- The test report(s) and the inspection report(s) have to be provided to the “new” certifier
- The test institute that issued the test reports has to be accepted by the “new” certifier

*This decision was taken unanimously.*

### **Item 6: Draft Solar Keymark scheme rules for solar hot water stores**

Jan Erik Nielsen mentioned that EN 12977-3 ”Thermal solar systems and components – Custom built systems – Part 3: Performance testing for solar water heater stores” is expected to be approved during the first half of 2008. In principle it will then be possible to Keymark solar hot water tanks.

Draft scheme rules are available at:

<http://www.estif.org/solarkeymark/skii-scheme-rules.php>

Furthermore Jan Erik Nielsen mentioned that ”Flexible” tank testing/certification (few tests - > certification of whole range of ”same” tanks in different sizes) is possible due to procedures given in prEN 12977-3 Annex E ”Determination of store parameters by means of ”up-scaling” and ”down-scaling”

### **Item 7: Flexible Solar Keymark certification**

Related to this Jan Erik Nielsen presented the following approach:

The idea is to include flexible methods for sub-type certification in the existing scheme rules for Solar Keymark.

Two methods are proposed to be included:

**Extrapolation/interpolation method:** Sub-type certification based on EN12976 testing of a small number of systems and interpolation of performance results to the whole range of systems – the development of this procedure is on the way

**Calculation method:** Sub-type certification based on EN12976 testing of 1 (or 2) typical system(s) and calculation of the whole range of systems according to CEN/TS 12977-2 using

data for Keymarked collectors and stores (and data for controllers tested according to CEN/TS12977-5)

### **Decision – related to “ Flexible Solar Keymark certification ”**

The experts present decided that in principle both approaches (“extrapolation/interpolation method” and “calculation method” – see above) should be included in a revised version of the Solar Keymark scheme rules.

*This decision was taken unanimously.*

### **Item 8: Test reference years**

With regard to the performance prediction according to EN 12976 it is essential that all labs use the same weather data. In order to ensure this a common procedure was agreed on during the 1<sup>st</sup> Solar Keymark Network Meeting in June 2006.

#### **Weather data:**

It was agreed that with regard to the weather data for specific countries the persons listed below will act as a contact point. On request these persons shall supply weather data that are not protected with any copyright.

Sweden:	Johan Björkman (SP)
Germany:	Henner Kerskes (ITW)
Denmark:	Jan Erik Nielsen (SolarKey)
Spain:	Pilar Navarro Rivero (ITC)
Austria:	Josef Buchinger (arsenal)
Greece:	Emmanouil Mathioulakis, Giorgos Panaras (Demokritos)
Italy:	Giacobbe Braccio (ENEA)
Poland:	Marian Gryciuk (ECBREC)
Portugal:	Maria Carvalho (INETI)
France:	Dominique Caccavelli (CSTB)
Switzerland:	Andreas Bohren (SPF) offered additionally at this meeting to investigate if SPF could also contribute

Note: In comparison to the last meeting the weather data for Poland were now deleted from the list above since it looks like Marian Gryciuk is not longer working at ECBREC (his email address is not valid any more)

Furthermore it was agreed that the persons should send the check-sum figures (procedure for calculation of check-sum figures see minutes of 1<sup>st</sup> meeting in June 2006 ) for *their* weather data to Harald Drück until the end of August 2006.

Up to now (October 2007) only the check-sum figures for the following weather data have been sent to Harald Drück.

<b>Austria</b> <b>Location Vienna</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	448	0	662919
diffuse radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	730	0	444514
ambient temperature [°C]	31.5	-9.7	94327.2
wind speed (optional) [m/s]	13.4	0,0	27141.6
<i>Contact: Josef Buchinger (email: Josef.Buchinger@arsenal.ac.at)</i>			

<b>Austria</b> <b>Location Graz</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	463	0	659403
diffuse radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	806	0	483336
ambient temperature [°C]	29.0	-14.8	71201.3
wind speed (optional) [m/s]	14.9	0,0	13159.5
<i>Contact: Josef Buchinger (email: Josef.Buchinger@arsenal.ac.at)</i>			

<b>Greece</b> <b>Location Athens</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	805	0	896210
diffuse radiation on 45° tilt angle) [W/m <sup>2</sup> ]	456	0	822104
ambient temperature [°C]	36.9	1.7	161979
wind speed (optional) [m/s]	19.7	0.0	40218
<i>Contact: Giorgos Panaras (email: petpan@mail.ntua.gr)</i>			

<b>Portugal</b> <b>Location Porto</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	943.6	0	1010849.6
diffuse radiation on 45° tilt angle) [W/m <sup>2</sup> ]	423.9	0	586284.6
ambient temperature [°C]	32.9	-0.3	119676.7
wind speed (optional) [m/s]	-	-	-
<i>Contact: Maria Carvalho (email: mjoao.carvalho@ineti.pt)</i>			

<b>Portugal Location Lisboa</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	946.8	0	1130822.2
diffuse radiation on 45° tilt angle) [W/m <sup>2</sup> ]	421.5	0	582399.5
ambient temperature [°C]	35.4	1.7	144875.8
wind speed (optional) [m/s]	-	-	-
<i>Contact: Maria Carvalho (email: mjoao.carvalho@ineti.pt)</i>			

<b>Portugal Location Faro</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	961.5	0	1394718.7
diffuse radiation on 45° tilt angle) [W/m <sup>2</sup> ]	393.0	0	510632.9
ambient temperature [°C]	36.2	3.4	153112.3
wind speed (optional) [m/s]	-	-	-
<i>Contact: Maria Carvalho (email: mjoao.carvalho@ineti.pt)</i>			

<b>Germany Location Würzburg</b>	maximum value	minimum value	sum over the year
direct radiation (on 45° tilt angle) [W/m <sup>2</sup> ]	763	0	667215.1
diffuse radiation on 45° tilt angle) [W/m <sup>2</sup> ]	383	0	562373,1
ambient temperature [°C]	32.6	-16.9	78744.7
wind speed (optional) [m/s]	23	0,0	26824.7
<i>Contact: Henner Kerskes (email: kerskes@itw.uni-stuttgart.de)</i>			

Harald Drück pointed out the importance of this activity and reminded the participants to send him the check-sum figures for their weather data.

**New deadline: November 30<sup>th</sup>, 2007.**

## **Item 9: Revision of standard series CEN/TS 12977 and Solar Keymark**

Harald Drück mentioned that the revised standard series CEN/TS 12977 will consist of the following parts:

CEN/TS 12977-1:

Thermal solar systems and components - Custom built systems - Part 1: General requirements for solar water heaters and combisystems

CEN/TS 12977-2:

Thermal solar systems and components - Custom built systems – Part 2 Test methods for solar water heaters and combisystems

EN 12977-3:

Thermal solar systems and components - Custom built systems - Part 3: Performance test methods for solar water heater stores

CEN/TS 12977-4:

Thermal solar systems and components - Custom built systems - Part 4: Performance test methods for solar combistores

CEN/TS 12977-5:

Thermal solar systems and components - Custom built systems - Part 5: Performance test methods for control equipment

It is expected that during the next meeting of TC 312 on October 15<sup>th</sup>. and 16<sup>th</sup> the procedure for the formal vote will be launched. Furthermore it is expected that, in case of a positive result, the standards will be implemented at earliest by the middle of 2008.

Jan Erik Nielsen tried to convince the CCB (CEN certification board) during a meeting held on February 13<sup>th</sup>, 2007 to allow Solar Keymark certification directly based on the CEN/TS standards mentioned above. CCB carried out a vote related to this which lead unfortunately to a negative result.

In order to allow for Solar Keymark certification based on the 12977 series Jan Erik Nielsen proposed to ask CEN TC 312 at the next meeting for upgrading the standard series 12977 to real EN standards. This upgrade should be the next step after the CEN/TS standards were issued.

The expert present agreed unanimously to this proposal.

### **Item 10: Solar Keymark Certificates – harmonisation of information content**

Sören Scholz from DIN CERTCO did send out by email dated March 27<sup>th</sup>, 2007 the currently used version of the Solar Keymark data sheets for collectors and factory made systems. Based on this he received comments from ITC, INETI and EKTSUB (Experience Exchange Circle of the German speaking solar test labs).

Based on this input he will prepare a modified version of the datasheets and send this out for comments in order to agree on a final version of the datasheets at latest by the end of this year.

It was agreed that the data sheets shall be available from the certification body and will be published on the Solar Keymark Website. This requirement will be included in the revised version of the Solar Keymark scheme rules.

With regard to already existing data sheets it was decided that this data sheets need not to be revised or updated as long as the product is not changed.

#### **Timing:**

Sending out modified version by Sören Scholz: October 31<sup>st</sup> 2007

Deadline for comments: November 15<sup>th</sup>, 2007

Final version from Sören Scholz

to the Solar Keymark Network and to Jan Erik Nielsen: December 1<sup>st</sup>, 2007.

**Item 11: Made in**

In the standards EN 12975 and EN 12976 it is required that the identification plate of the collector or system respectively shall contain the information where the product is made (made in:). There was the question to what this information has to refer (e. g. name of a country or name of a continent).

Related to this the following decision was made:

**Decision – related to “made in”**

The experts present decided that the information related to “made in” can refer to whatever is considered as appropriate by the one who is putting on the label.

Furthermore it was decided that the information to “made in” on the product identification plate should be made optional during the next revision of the standard.

*This decision was taken unanimously.*

**Item 12: Performing of Solar Keymark tests by manufacturers**

A manufacturer questioned if it is possible to perform tests that are the basis for Solar Keymark certification on his own test facility if this test facility is validated (but not accredited) by an accredited test lab.

**Decision – related to “ Performing of Solar Keymark tests by manufacturers ”**

The experts present decided that this is not possible due to the existing Solar Keymark scheme rules.

Remark: It would only be possible if the test facility of the manufacturer is accredited.

Furthermore the test sample has to be picked from the current production by an independent inspector.

*This decision was taken unanimously.*

**Item 13: Solar Keymark factory inspection check list**

During the Solar Keymark Project meeting on October 1<sup>st</sup>, 2007 at Vienna it was agreed on a common factory inspection check list. In a next step this common factory inspection check list has to pass the documentation check of the certifiers.

After this is successfully done, the check list (and future updates) will be available on the Solar Keymark website. Furthermore it was decided to include the check list as an informal Annex in the Solar Keymark scheme rules.

**Item 14: Solar Keymark certification of ICS Systems**

In the Solar Keymark scheme rules it is specified that the Solar Keymark certification of factory made systems requires that the collector is tested according to EN 12975.

Taking into account the fact that integrated collector storage systems (ICS systems) are excluded from EN 12975 this results in principle in the fact that ICS systems cannot be Solar Keymark certified.

The exclusion of ICS Systems from the scope of EN 12975 is due to the reason that the performance test methods described in EN 12975 are not applicable to ICS systems. With

regard to Solar Keymark certification of ICS systems this is not relevant, since the tests according to EN 12975 required for Solar Keymark certification of systems are only related to durability and reliability testing of solar collectors and not to the determination of the thermal performance.

**Decision – related to “ Solar Keymark certification of ICS Systems ”**

Taking the aspects mentioned above into account the experts present decided that a Solar Keymark certification of ICS systems is possible.

*This decision was taken unanimously.*

**Item 15: Solar Keymark certification in Italy**

Concerning the acceptance of Solar Keymark certificates in Italy as a basis for a tax refund there were some irritations during the last days. As it looks at present, the problem that is based on a wrong wording in a law, seems to be solved in the near future. An important role in the activities related to solving the problem played Assolterm (with Sergio d’Alessandris as President and Riccardo Battisti as managing director).

**Item 16: Mechanical load tests of tubular collectors**

**Decision – related to “ Mechanical load tests of tubular collectors ”**

The experts present decided that the “negative pressure test of the collector” according to 5.9.2 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.

Concerning the mechanical load tests of tubular collectors with and without external reflectors it was decided that action must be taken during the next revision of EN 12975.

It was decided that there shall be a remark on the Solar Keymark certificate in case the negative pressure test was not performed as long as the pressure test is still mandatory according to the standard.

In order to exchange the experience related to performing the positive pressure tests it was agreed that the labs performing such tests should describe their procedure and mail it to the Solar Keymark Network until November 9<sup>th</sup>, 2007.

*This decision was taken unanimously.*

**Item 17: Misuse of Solar Keymark**

In case of misuse of the Solar Keymark (e.g. putting the Solar Keymark label on a collector that is not certified and does also not appear in the list under [www.solarkeymark.org](http://www.solarkeymark.org) ) the certification body refereed for issuing the Solar Keymark should be contacted. In case that there is no reference to a certification body an appropriate certification body should be contacted.

In case that the problem can not solved in this way, Mr. Hoang Liauw (email: [hoang.Liauw@cen.eu](mailto:hoang.Liauw@cen.eu)) form CEN should be contacted and CEN will take legal action.



**Item 18: Any other business**

With regard to “6.1 special test” in the Solar Keymark Scheme rules Stephan Fischer questioned the threshold criteria of the 90 % with respect to the integral of the instantaneous efficiency.

After a short discussion it was decided that this topic should be discussed again after the results of the round robin collector tests are available.

**Item 19: Future of the Solar Keymark Network**

The activities of the Solar Keymark Network are partly financed from the Solar Keymark II project. This project will end by the end of 2007.

The experts present expressed their wish to continue the Solar Keymark Network and to have a meeting at least once a year.

At present Jan Erik Nielsen is searching for sources for financing the activities of the Solar Keymark Network. Hoang Liauw promised to investigate if a partly financing via CEN is possible. Sören Scholz will ask DIN for financing.

**Item 20: Date and place of next meeting**

In case that financing for the activities of the Solar Keymark Network can be acquired it is intended to have the next meeting

**September 29<sup>th</sup> –30<sup>th</sup>, 2008 at Brussels  
(Start on 29<sup>th</sup>, not before 14:00 hrs)**

**Item 21: End of meeting**

Harald Drück thanked the participants for attending the meeting and for their constructive contributions. He closed the meeting at 12:50 hrs.

The minutes were prepared by Harald Drück (Chairman of the Solar Keymark Network) Stuttgart, October 07<sup>th</sup>, 2007.

As agreed during the meeting this minutes will be considered as approved if there are now objections that are send by email to Harald Drück within 3 weeks after sending out the minutes.

The reason for choosing this procedure for the approval of the minutes is due to the fact that no date for a next Solar Keymark meeting was fixed due to a lack of financing the activity.


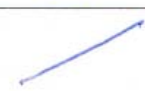
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

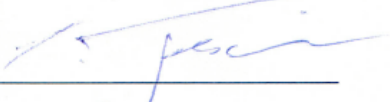

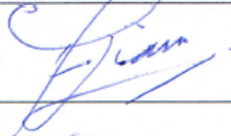

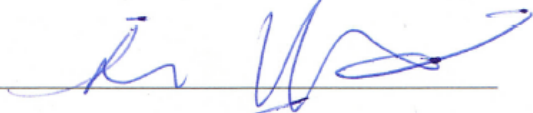
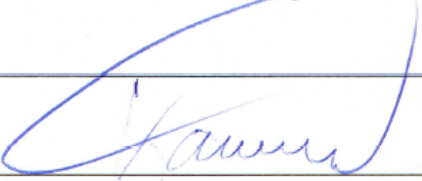





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## Annex A: List of participants

### SOLAR KEYMARK NETWORK

3<sup>rd</sup> MEETING, VIENNA OCTOBER 2<sup>ND</sup> 2007

NAME	ORGANISATION	SIGNATURE
Vincenzo Delacqua	ICIM (Italy)	
Premoli Pierluigi	ICIM (Italy)	
Josef Buchinger	arsenal (Austria)	
Pilar Navarro Rivero	ITC (Spain)	
Jan Erik Nielsen	SolarKey (Denmark)	
Andreas Bohren	SPF (Switzerland)	
Bouزيد Khebchache	CSTB (France)	
Yamina Saheb	CSTB	
Maria Carvalho	INETI (Portugal)	
Sören Scholz	DINCERTCO (Germany)	
Vinod Sharma	ENEA (Italy)	
Tomas Hruska	SZU Engineering Test Institute (Czech)	

Michal Manhalter	SZU Engineering Test Institute (Czech)	
Borivoj Sourek	SOLab Technical University Prag (Czech)	
Tomas Matuska	SOLab Technical University Prag (Czech)	
Joao Nascimento	CERTIF (Portugal)	
Stephan Fischer	ITW (Germany)	
Harald Drück	ITW (Germany)	
Liauw Hoang	CEN	
Sebastian Laipple	SPF	
Åsa Wahlström	SP (Sweden)	
Ulrik Pettersson	SP (Sweden)	
Korbinian Kramer	ISE (Germany)	
Stefan Mehnert	ISE (Germany)	
Alberto Garcia de Jalon	Cener (Spain)	
Francois Durier	CETIAT (France)	
Giorgos Panaras	ELOT* (Greece) / DEMOKRIZOS (GREECE)	
Marian Gryciuk	ECBREC/CLN (Poland)	

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## Annex B: Final agenda

# Solar Keymark Network

Experience exchange circle of test labs and certifiers  
working according to the Solar Keymark scheme rules



### 3. Solar Keymark Network Meeting

Tuesday, October 2<sup>nd</sup>, 2007 09:00 - 12:15 hrs

Meeting Room W301, 3rd Floor, arsenal research, Giefinggasse 2, A-1210 Vienna

#### Final Agenda

Item	Content
1	Opening of the meeting
2	Introduction of participants
3	Short presentation of the Solar Keymark II Project Jan Erik Nielsen, SolarKey Int., ESTIF consultant
4	Procedures for using existing tests for Solar Keymark certification <i>In case a new test that is in line with the SK scheme rules is available</i>
5	Procedures for changing the certification body
6	Draft Solar Keymark scheme rules for solar hot water stores See also: <a href="http://www.estif.org/solarkeymark/skii-scheme-rules.php">http://www.estif.org/solarkeymark/skii-scheme-rules.php</a>
7	Flexible Solar Keymark certification See also: <a href="http://www.estif.org/solarkeymark/skii-scheme-rules.php">http://www.estif.org/solarkeymark/skii-scheme-rules.php</a>
8	Test reference years for performance prediction acc. to EN 12976 <i>How to ensure that all labs use the same data?</i>
9	Revision of standard CEN/TS 12977 and Solar Keymark
10	Solar Keymark Certificates – harmonisation of information content
11	Made in: <i>name of any country or name of a continent (e.g. Europe).</i>
12	Performing of Solar Keymark tests by manufacturers <i>Test are performed on test facility validated by an accredited lab</i>
13	Solar Keymark factory inspection check list <i>Agreement on a common check list</i>
14	Solar Keymark certification of ICS – <i>Is this formally possible?</i>
15	Solar Keymark certification in Italy
16	Mechanical load tests of ETC collectors
17	Misuse of Solar Keymark
18	Any other business
19	Future of the Solar Keymark Network
20	Date and place of next meeting
21	End of meeting