Solar Keymark Network

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

Final Minutes

12. Solar Keymark Network Meeting
March 20th – 21st, 2012; Berlin, Germany

Item 1: Opening of the meeting

The chairman of the Solar Keymark Network (SNK), Harald Drück, opened the meeting and welcomed the participants. He thanked Sören Scholz from DIN CERTCO 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.

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.R3)

The meeting took place from Tuesday, March 20th, 2012, 13:05 hrs till Wednesday Mach 21st, 2012, 13:30 hrs at the premises of DIN in Berlin.

The first invitation including the first draft agenda of the meeting was sent out by email from Jan Erik Nielsen dated January 18th,2012.

Item 2: Introduction of participants

The participants introduced themselves and mentioned their nominating organisation or institution respectively. The list of participants that attended the meeting is attached as Annex A.

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_N0102R3) are fulfilled.

Item 3: Approval of the agenda

Following the first draft agenda send out on January 18th, 2012 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 “12th Solar Keymark Network meeting - Agenda, rev 3” document SKN_N0182R6 version 19/03/12.

The draft agenda was shortly discussed and small modifications were made.

The final agenda including the small modifications is available via the Solar Keymark website as document number SKN_N0182R7.

Item 4: Comments and final approval of the minutes of the 11. meeting

Harald Drück mentioned that the minutes of the 11th Solar Keymark Network meeting (File: SKN_N0181R0.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 10th, 2011 by Jan Erik Nielsen.

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

Comment 1 (from K. Lampadarios, ELOT):

Fra: K. Lampadarios [mailto:ksl@elot.gr]
Sendt: 14. oktober 2011 11:41
Til: Jan Erik Nielsen
Cc: 'IOANNIS ALEXIOU'; 'Emmanouil Mathioulakis'; 'Stamatis Babalis'; gkm@elot.gr; Vassilios Belessiotis; ctravasaros@primelasertech.gr;
Emne: RE: SKN - Final minutes of 10th meeting - draft minutes of 1th meeting (and some nice photos!)

Dear Jan Erik,
By the email below, we received the draft minutes of the 11th SKN meeting.
In item 34.2: Short overview on national markets, F.Y.R.O.M is mentioned as “Macedonia”.
As this issue is of great importance for Greece, please note that according to the current decisions of United Nations and of EU parliament, as well as clearly mentioned in ISO 3166-1, this country has to be reported as F.Y.R.O.M. in any international or EU meeting, as well as in CEN and CENELEC.
This also applies to the badges or name signs of any relevant meeting.
Although we consider that this issue was unintentional, we are looking forward to the prompt correction of the draft minutes and to the application of the correct practice in future SKN meetings.
Thank you in advance for your actions.
Sincerely,
Κώστας Λαμπαδάριος / Kostas Lampadarios

Action: In the minutes of the 11th Solar Keymark Network meeting (File: SKN_N0181R0.pdf) “Macedonia” will be changed to F.Y.R.O.M.

Comment 2 (from Aleksandar D. Prodanov, Hydromet, F.Y.R.O.M.):

Von: Aleksandar D. Prodanov [mailto:aprodanov@meteo.gov.mk]
Gesendet: Montag, 31. Oktober 2011 15:48
An: drueck@itw.uni-stuttgart.de; jen@planenergi.dk
Betreff: Re: SKN - Final minutes of 10th meeting - draft minutes of 1th meeting (and some nice photos!)

Dear Harald and Jan

In **Item 34.2**: Short overview on national markets for Macedonia should be: Macedonia: Now there are no subsidies. When government was giving subsidies SK was not required. Some of the manufacturers have SK because they sell in Europe.

In **Item 5**: Date & place of next Solar Keymark Network (SKN) meetings write In place for 13-th SKN meeting stand
„…October 10th 13:00 hrs to October 21th 14:00 hrs (end of day one at 19:00 hrs)…“ Instead „October 21-th“ should be „October 11-th“.

In **Item 25**: Solar Certification Fund -2-nd Call write
„..Harald Drück mentioned the following extract of an email he received from Costas Travasaros on Oct. 5, 2001 which could unfortunately not attend the meeting due to a strike in Greece:…“
Instead „Oct. 5, 2001“ should be „Oct. 5, 2011“

Best regards,
Aleksandar

Actions: - Change in Item 34.2 sentence “SK is not required for subsidies” to “Since there are at present no subsidies for solar thermal, SK is not required for subsidies”
- Change in Item 5 “October 21th “ to “October 11th”
- Change in Item 25 “Oct. 5, 2001“ to “ Oct. 5, 2011”

Due to the changes mentioned above the document SKN_N0181R1 results as the revised version of the minutes. Harald Drück asked for final approval of this version of the minutes.

The minutes of the 11th Solar Keymark Network meeting File: SKN_N0181R1 were unanimously finally approved by the participants present.

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

Item 5: Comments on Solar Keymark Network decision list

Maria João Carvalho asked for a correction of the way D5.M7 is on the decision list.

Presently it includes only as follows
Decision D5.M7 – Solar Keymark Certification of PV/T collectors
The participants present decided that Solar Keymark Certification of PV/T collectors as a solar thermal product is possible provided the measurements of the thermal performance are performed with and without electricity production. For the electrical load applied for the electricity production a MPP Tracker shall be used. In the Solar Keymark data sheet the thermal performance with and without electricity production shall be presented (see note below).

But it makes no reference to note below. This note is in the Minutes of Meeting 7 and is important to be included in the decision list because it refers to what values shall be reported in the Data Sheet for PV/T collectors

The input from Maria João Carvalho was discussed and since it was an obvious error not to include the note in the decision mentioned in the decision list, this error will be corrected by modifying the decision list accordingly.

Item 6: Date & place of next Solar Keymark Network (SKN) meetings

The **13th SKN meeting** (autumn 2012 meeting) is scheduled for

September 5th 13:00 hrs to September 6th 14:00 hrs (end of day one at 19:00 hrs)

at Madrid at the premises of AENOR based of an invitation from Jaime Fernandez Gonzalez-Granda.

Note: **Workshop on Global Certification** on September 5th, 2012 from 9:00 hrs to 12:00 hrs

The **14th SKN meeting** (spring 2013 meeting) is scheduled for

March 12th to March 13th 2013 (two days) (end of day one at 19:00 hrs)

at the premises of SII headquarters at Tel Aviv, Israel based on an invitation from Reuven Godali.

The **15th SKN meeting** (autumn 2013 meeting) is scheduled for

September 24th 13:00 hrs to September 25th 14:00 hrs (end of day one at 19:00 hrs)

at Boras, Sweden (provided the spring 2013 meeting is not held there)

Item 6:Introducing resolutions in the relevant documents

Jan Erik Nielsen presented the proposal described in the agenda (Document SKN_N0182R7) for introducing resolutions in the relevant documents such as e.g. the Solar Keymark scheme rules.

The main approach is that in addition to “decisions” now also “resolutions” will be made. Resolutions will be directly integrated in the relevant documents of the Solar Keymark Network (SKN).

The proposal was explained. Finally the following decision was made.

Decision D1.M12 – Introduction of Resolutions

Decisions concerning changes in:

- SKN Internal Regulations
- SKN Draft Specific Scheme Rules
- SKN Specific Scheme Rules Annexes

are from now on named resolutions.

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

Jan Erik Nielsen presented the proposal for the concept of the resolutions related to document SKN_N0102.R4 section 3.

After a short discussion, in which Sören Scholz mentioned the relevance of checking if other documents are effected, the following resolution was made

Resolution R1.M12 – Revision of SKN Internal Regulations with regard to “resolutions”

Document SKN_N0102R4 is revised in the following way. The resulting document is SKN_N0102R5 and will be published within two weeks.

3 Meetings

3.1 Preparation of meetings

SKN meetings are convened by the SKN secretariat on behalf of the SKN chairman.

Meeting documents should preferably be sent out by electronic means.

Deadlines for circulation of the main documents (invitation to the meeting and the first draft agenda) for SKN meetings shall be made available 1 month before the meeting by SKN secretariat.

Input to the draft agenda (proposals for decisions/resolutions or any item to be added) should be sent to SKN secretariat at least 3 weeks before the meeting. Final draft agenda shall be circulated at least 2 weeks before the meeting by SKN secretariat.

3.2 Resolutions

Decisions concerning changes in:

- ❑ SKN Internal Regulations
- ❑ SKN Draft Specific Scheme Rules
- ❑ SKN Specific Scheme Rules Annexes

are named resolutions(from March 2012 onwards)

All proposals for resolutions shall be attached a proposal for how to include / implement the resolution in the related document, i.e. a revised document showing tracked changes. Proposals for resolutions can be made simply giving a reference to the revised document with the changes implemented.

All proposals for resolutions shall be send to SKN secretariat at least 3 weeks before the meeting.

Proposed revisions of SK Specific Scheme Rules should be finally approved by CCB.

3.3 Meeting reporting

The minutes shall be a proper record of all decisions and resolutions of the meeting.

All resolutions are reported in the SKN meeting minutes and shall be marked:
“Resolution Rx.My -Title”, with x = number of resolution, y = number of meeting, Title = the title of the resolution.
The related document shall be revised according to agreed proposal and should be published within two weeks.

The draft minutes of the meeting shall be circulated not later than 4 weeks afterwards.

The minutes will be considered as approved if there are no significant comments sent ~~out~~ to the SKN Chairman within 30 days after having been sent out. Final approval of the minutes will be done formally at the following SKN meeting.

A list of all principle decisions of the SKN - which are not resolutions according to 3.2 - will be made available via the SKN Decision list in the public assessable area of www.solarkeymark.org.

The approved minutes of the meetings will be made available in the restricted area of www.solarkeymark.org

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

Item 8:Revision of SK scheme rules related to publication of accreditation certificates on Solar Keymark website

Jan Erik Nielsen presented the proposal for a resolution conc. the revision of the SKN Internal Regulations implemented in the document SKN_N0102.R4 section 2.1.1.

After a discussion and some minor changes the following resolution was made.

Resolution R2.M12 – Publication of accreditation certificates on Solar Keymark website

Document SKN_N0102.R6 (shall be published) with the following changes indicated in document SKN_N0102.R5 within the next two weeks:

2.1.1 Obligatory members

Representatives from the following groups shall participate as a member in the SKN:

- empowered certification bodies
- accredited testing laboratories and inspection bodies
- SKN chairman
- SKN secretariat
- Representative of European dedicated solar thermal industry associations (e.g. ESTIF)

The number of participants from the above mentioned institutions attending the SKN meetings should not exceed two representatives per individual institution.

Accreditation certificates for certification bodies and test labs shall be published at the Solar Keymark website. Alternatively a link to a website on that the accreditation certificate is directly available can be used.
Note: In this context “directly” means by “one click” and e.g. not via a search engine.

This resolution was taken with 1 negative vote and 5 abstentions.

Item 9: SK scheme rules - further development

The version of the Solar Keymark Scheme rules in force at present is document SKN_N0106.R15.

According to this document Solar Keymark certification of PV/T collectors is not possible.

Korbinian Kramer tried to propose a solution related to Solar Keymarking of PV/T collectors and presented in this context a few papers (Document SKN_N0184R0 and SKN_N0184R0).

Furthermore Korbinian Kramer gave a presentation about testing of PV/T testing and especially a comparison between testing of PV modules and solar thermal collectors. This presentation is attached as Annex B.

An intensive discussion about the aspects related to PV/T collectors, especially also with regard to the aspects of CE marking took place.

Since the discussion showed that the subject is quite complex it was not possible to elaborate during this meeting a consensus. Hence a working group consisting of the following persons was established.

Uli Fritsche (Chair), Joakim Bynström, Sören Scholz, Korbinian Kramer, Marco Trionfetti, Giovanni Bellenda. Carsten Lampe, Joao Santos.

The task of this working group is to elaborate a modified version of the Solar Keymark scheme rules including Solar Keymarking of PV/T collectors as a basis for a resolution at the next Solar Keymark Network meeting.

With regard to the inclusion of custom built systems according to EN 12977 Jan Erik Nielsen presented document SKN_N0192R6. The document was discussed and some changes were performed. The resulting document from the discussion is SKN_N0192R7.

Resolution R3.M11 – Update of Solar Keymark scheme rules

The Solar Keymark scheme rules resulting from the changes indicated in SKN_N0192R7 are accepted and shall be included in document SKN0106.R16 (draft specific scheme rules) together with other agreed changes.

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

Item 10: New Absorber coatings to be considered as equivalent

No new absorber coatings to be considered as equivalent were presented at the meeting.

Item 11: New Glazing to be considered as equivalent

No new glazing to be considered as equivalent were presented at the meeting.

Item 12: Exchangeability of absorbers in FPCs except absorber coating

Already at the 11th SKN meeting a (modified) working group consisting of the following persons was created to elaborate a proposal for a decision at the next SKN meeting.

Franz Helminger (chair), Ulrich Fritzsche, Christian Stadler, Carsten Lampe, Ralf Köbbemann-Rengers, Maria João Carvalho, Hans-Peter Weiss, Martin Meingassner, Sören Scholz, Andreas Bohren,

The working group elaborated the documents SKN_N0186R0 with a proposal for a decision and SKN_N0187R0 with examples of absorbers to be considered as equivalent.

After a short discussion the following resolution was made:

Resolution R4.M12 – Exchangeability of absorbers in FPCs except absorber coating

Flat plate collectors with modified absorbers can be generally considered as the same subtype (same collector family) just if 4, 5, 6, 7 and 8 of Table 1 (see bewlow) are modified and if:

- The determined power curve does not differ by more than 2% points at the temperature differences of 0 K and 50 K.
- In the case of a modification of header pipes (clause 7 in Table 1) the exception described in remark 1 shall be taken into account.
- In the case of a modification of the nominal distance between absorber pipes (clause 8 in Table 1) the exception described in remark 2 shall be taken into account.

Collectors with equal absorbers according to the requirements above can just be sold as the same subtype for 1 year.

If the requirement above is not fulfilled or if the collectors with unequal absorbers should be sold in parallel for more than 1 year, separate certificates shall be issued.

It is recommended to do the performance measurement as a comparative measurement of a collector as originally certified and a collector with the modified absorber.

In the case of existing collector families (e.g. different length and height) the smallest and biggest size need to be taken into account. If the requirement above is not fulfilled for every tested size, separate certificates shall be issued.

If there are different interpretations possible within a certification procedure, the certification bodies have to ensure a harmonized certification decision according to the Solar KEYMARK Network Internal Regulations, clause 5.

Rules for testing

	Shall be tested according to 12975-2 on “new” absorber design							
	6. Thermal performance	**Determination of the effective thermal capacity and time constant**	**5.2 Internal pressure tests for absorbers**	**5.3 High-temperature resistance test**	**5.4 Exposure test**	**5.6 Internal thermal shock test**	**5.7 Rain penetration test**	**5.11 Final inspection**
1. Material of absorber sheet	**X**	**X**		**X**	**X**	**X**		**X**
2. Material of pipes	**X**	**X**	**X**	**X**	**X**	**X**		**X**
3. Design of absorber plate								
a. Absorber fins to fullplate absorber	**X**	**X**		**X**	**X**	**X**		**X**
b. fullplate absorber to absorber fins	**X**	**X**		**X**	**X**	**X**		**X**
4. Nominal thickness of absorber sheet	**X**	**X**				**X**		**X**
5. Type of connection of absorber sheet and absorber pipes	**X**		**X**	**X**	**X**	**X**		**X**
6. Absorber pipes (nominal diameters, nominal thickness)	**X**	**X**	**X**	**X**	**X**	**X**		**X**
7. Header pipes (nominal diameters, nominal thickness)	**X**[1]	**X**	**X**	**X**	**X**	**X**	**X**	**X**
8. Nominal distance between absorber pipes	**X**[2]	**X**[2]	**X**[2]					

Table 1: List of changes on absorbers of FPC except coating

“Footnotes” form Table

1 If diameter is changed for “one step” no additional performance test is necessary. “One step” means changes from one listed outer diameter to the next listed larger or smaller outer diameter. The listed diameters are:

12 mm	15 mm	18 mm	22 mm	28 mm	32 mm

2 Retesting is required if the nominal spacing between adjacent absorber pipes is changed by more than ±5%.

Limitations and remarks

- Just absorbers made of copper or aluminium are covered.
- The certification of upright and horizontal format is not covered.
- The proposal shows possible modifications where an agreement was found, other possible modifications are not covered.
- Each not listed modification need to be checked with test labs and certification bodies.
- FPCs with absorbers with different flow schemes (U-harp, Z-harp and meander) cannot be considered in one collector family. Testing shall be done according EN 12975-1 Annex C.
- If more than one modification is intended (after some time or at new certification process) always the combination of listed tests according to Table 1 is needed.
- The measurement of pressure drop is not included, because of informative status in EN 12975:2006
- The measurement of the IAM needs not to be done.
- All tests need to be done successfully by a Solar KEYMARK recognized test lab and reported in test reports.
- For custom built collectors it is essential to use different sizes of header pipes within a collector (clause 7 of Table 1). For this kind of collector this clause is not relevant.
- The measurement of the stagnation temperature is necessary in combination with the High-temperature resistance test.

Document SKN_N0106.R15 (Specific scheme rules) will be revised accordingly within two weeks into SKN0106.R16 (draft specific scheme rules) together with other agreed changes.

This resolution was taken with 0 negative votes and 8 abstentions.

Item 13: Equivalent absorber coatings: Proposal for modification of D3.M10

Francis Kliem presented document SKN_N0194R0 describing the approach as well as the limits of the procedure documented in D3.M10.

After a short discussion the following resolution was made:

Note: Changes compared to D3.M10 are printed in red.

Resolution R5.M12 – Procedure for considering selective absorber coatings as equivalent

The experts present decided to apply the following procedure in order to consider different coatings as equivalent:

Different coatings are considered as equivalent provided that

1. They are applied on the same substrate (e.g. copper, aluminium)

and

2. The specific test procedure described below has been passed successfully

and

3. The equality is accepted by the Solar Keymark Network

Procedure

If a coating is to be considered equivalent to other coatings then the following tests shall be passed and requirements shall be fulfilled:

1. Two identical collectors (apart from the absorber coating) are compared to verify the equality of the two coatings. The absorbers of the two collectors must be made of the same material and must have the same thickness. One of the collectors is coated with one of the reference coatings. The other collector is coated with the new coating.
2. The durability and reliability tests according to EN 12975-2 (being relevant with regard to the absorber, thus 5.3 High Temperature Resistance, 5.4 Exposure and 5.6 Internal Shock) for the collector with the new coating performed by an EN12975 accredited test lab are successfully passed.
3. The power curves determined by an accredited test lab for the two collectors with different coatings shall not differ by more than 2% - points at a temperature difference of 0 K and not more than 2% - points at a temperature difference of 50 K

   The absorptance and emittance of the different coatings under question shall have - according to the specifications of the manufacturer - equivalent optical properties (alpha1 = alpha2 ± 1%point at most, epsilon1 = epsilon2 ± 1%point at most) and the same range of the production variability, e.g. 0.95 ± 2%.
4. For selective absorber coatings on metal a IEA SHC Task X test shall be performed successfully
5. The interchangeability is accepted by the Solar Keymark Network

The equivalency of the absorber coating can be challenged anytime. In this case the absorber has to be sampled by an accredited third party or by the test lab. The costs for the whole procedure are fully carried by the challenger. Upon presentation of tests that suggest none-equivalency of an absorber coating, the SKN is obliged to request the re-evaluation of an absorber coating the latest until the forthcoming SKN meeting. The absorber has to be sampled by a third party.

This resolution replaces decision D3.M10 – Procedure for considering selective absorber coatings as equivalent.

Document SKN_N0106.R15 (Specific scheme rules) will be revised accordingly into SKN0106.R16 (draft specific scheme rules) together with other agreed changes within two weeks.

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

Item 14: Brand names / OEM /OBL

At the 11th Solar Keymark Network meeting the topic related to different brand names in Solar Keymark certificates was intensively discussed but not finally solved. Due to this a working group consisting of the following persons was established:

Sören Scholz (Chair), Ralf Köbbemann-Rengers, Christian Stadler, Pedro Dias, Costas Travasaros, François-Xavier Ball, Vincenzo Delacqua, Jaime Fernandez Gonzalez-Granda.

The group of certification bodies elaborated document SKN_N0193R0. The document was presented by Sören Scholz and discussed.

The effort related to the elaboration of the document was in general appreciated by the Solar Keymark Network. Since the document covers a relative broad spectrum of aspects it was not felt appropriate to make a decision directly referring to this document.

Hence the working group was asked to prepare for the next meeting a proposal for a modified version of the Solar Keymark Specific Scheme Rules taking into account the relevant aspects related to “brand names / OEM / OBL”. Furthermore this document should provide clarification concerning the changes related to licence fees to be paid to CCB and SKN resulting from the potential changes e.g. related to type and subtype definitions. This cost estimation should be elaborated for different scenarios (e.g. small and large manufacturer)

Based on this document a vote will be performed.

In order to take into account as many open questions as possible these questions should be sent to Sören Scholz at latest until April 15, 2012.

Note: OEM Original Equipment Manufacturer
OBL Original Brand Labelling

Item 15: Database – only listing of products in combination with data sheets

Jan Erik Nielsen proposed to list only products in the Solar Keymark database of which the data sheets are available. This is already required according to the SK scheme rules.

Decision D2.M12 – Only listing of products in combination with data sheets in the SK database

In the future only products will be listed in the Solar Keymark database of which the data sheets are available. Already listed products without data sheets will be deleted from June 30, 2012 onwards.

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

Item 16: List of documents required by certification bodies

Following the discussion at the 9th SKN meeting Costas Travasaros prepared document SKN_N0165R0 entitled “ List of documents Required by Certification Bodies”

The document should already have been discussed at the 11th SKN meeting, but since Costas Travasaros could unfortunately not attend the meeting due to a strike in Greece it was decided to postpone this topic to the 12th SKN meeting. Since Costas Travasaros was not present, the topic was postponed again and it is intended to be discussed it at the 13th SKN meeting.

Item 17: Publication of accreditation certificates on Solar Keymark website

This topic was already dealt with under item 8

Item 18: Solar Certification Fund – 3rd Call

Jan Erik Nielsen and Harald Drück reported about the evaluation of the proposals handed in based on the 3rd Call and the telephone conference that took place on March 1st, 2012 for the discussion of the evaluation results.
The results of this evaluation including a proposal of projects recommended as agreed on during the telephone conference for funding are listed in document SKN_N0183R1.

This document SKN_N0183R1was presented by Jan Erik Nielsen.

After a short discussion the following decision was made:

Decision D3.M12 – Funding of proposals from the 3rd SCF call

The proposals recommend by the Solar Certification Fund Steering Group for funding as described in document SKN_N0183R1 are accepted and the corresponding activities will be funded.

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

Item 19: Election of the SKN Chairman

Before the election started the present chairman Harald Drück handed over the conveying of the meeting to Pedro Dias and left the room. The election was performed by Pedro Dias.

Harald Drück was elected as the SKN chairman with 0 negative votes and 0 abstentions.

Item 20: Election of SCF evaluator

The position previously occupied by Rob Meesters as a SCF evaluator from the category “industry” is vacant.

Christian Stadler was elected with 0 negative votes and 0 abstentions

Item 21: Establishment of a Working Group for internal checks

In order to improve the quality of the work performed by test laboratories, certification bodies and inspectors it might be helpful to perform internal checks or audits of this organisations.

It was found appropriate to focus on test labs as a first step.

In order to elaborate procedures and material for internal checks of **test labs** a working group consisting of the following persons was established:

Andreas Bohren (Chair), Stephan Fischer, Uli Fritzsche, Sören Scholz, Danjana Theis, Jef Profke, Vinod Shama, Stefan Mehnert, Henry Rosik, Stamatios Babalis, Julien Heintz,

The task of the group is to elaborate strategies and material for internal checks or audits of test labs and present them at the next SKN meeting.

Andreas Bohren as the chair of this working group asked to **send “problems” such as wrong test reports or false certificates to him at latest by the end of March 2012**.

Item 22: Sanctions against absent representatives

Jan Erik reported about “Decision D12.M10 – Participation at Solar Keymark network meetings “. This decision is as follows:
In case of two absences in a row of bodies and representatives obliged to participate in the Solar Keymark network meetings a decision will be made related to require participation at the next meeting and sanctions if this is not the case.

Jan Erik Nielsen presented a list showing the presence of the different institutions and organisations obliged to participate in the Solar Keymark Network.

As critical the following organisation were identified:

INTA (ES) recognised by AENOR (ES)

ITC (ES) recognised by AENOR (ES)

Pa.L.Mer. (IT) recognised by ICIM (IT).

It was agreed to ask the certification bodies to contact “their” test labs and inspectors mentioned above and to oblige them to participate at the next meeting.

Item 23: Proposal of establishing a real technical database for Solar Keymark products

Jan Erik Nielsen reported about the following proposal of Roger Hackstock (Austria Solar):

Based on the data sheets in Excel format it is possible to make a database for the detailed technical parameters.
This is a request from subsidy authorities (e.g. Salzburg in Austria). There is an offer from Salzburg subsidy authority to make such database - but this requires access to Excel sheets - the offer includes making the technical data base accessible from the Solar Keymark web.

Note from Jan Erik Nielsen as the SKN secretary: We have already requirement in the Solar Keymark scheme rules that certification bodies shall provide Excel data sheets. We have no decision that Excel sheets shall be made public. To proceed we need a decision that Excel sheet shall be available for all or for selected bodies.

Furthermore Jan Erik Nielsen mentioned that it is in principle possible for everyone to make such data base using data from the pdf data sheets, but this requires quite substantial work to keep the data base updated this way.

The topic was discussed and in principle it is appreciated to base subsidies on Solar Keymark data. However, after the discussion the following decision was made:

Decision D4.M12 – Availability of SK data sheets as Excel-files

Solar Keymark data sheets will not be made generally available as Excel-files. Based on individual requests specific data can be made available after a corresponding decision by the Solar Keymark network. The cost related to this service can be charged from the one asking for the data or be financed by the SCF.

This decision was taken with 0 negative votes and 8 abstentions.

Item 24: Information related to CE-marking of solar collectors

Stephan Fischer reported on the basis of document SKN_N0191R0 (“reduced" version of EN 12975-1) about the most important aspects required for changing the standard in such a way that it can serve as a basis for CE-marking.

This are:
including the remarks of the CE-consultant Julio P. Salazar Mitchell

- deleting the rain penetration test for the interface between collector and roof as we discussed
- including annex ZC
- deleting everything that is not mentioned in the mandate
- including the exposure test (needs to be in there from Stephan Fischer’s point of view because we can argue this is proving the durability as it is required by the mandate)

A discussion about specific aspects took place and some questions were raised by the participants and answered by Stephan Fischer. Furthermore the importance of using the same wording in the standard and in its annexes was stressed.

According to Stephan Fischer the elaboration of the standard is nearly finished and the publication of the standard is expected around the middle of 2013

In addition Jan Erik Nielsen informed about **issues related to the Pressure Equipment Directive** by means of the presentation attached as annex C.

During the discussion it was agreed to try to keep all sizes of collectors (small and large ones) in one standard.

Besides the technical aspects mentioned in the presentation Jan Erik Nielsen mentioned that due to a lot of originally not planed actions for further activities of him in this field no budget is available any more. In order to find a smart solution for financing the required activities Pedro Dias proposed to extend the current SCF project 10-B-CE 2010-SWT related to this topic.

Hence the following decision was made:

Decision D5.M12 – Extension of SCF project 10-B-CE 2010-SWT

In order to perform the additional urgently needed activities related to CE marking of solar collectors it was decided to extend the budget of the above mentioned project form the current amount of € 12.900,- to a total amount of € 27.900,-. The project end date will be extended from 01.03.12 to 01.03.13

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

Item 25: Guide – Preparation of “physical inspection reports”

Stefan Mehnert presented document SKN_N0195R0 with a guide for the preparation of „physical inspection reports“ for Solar Thermal products according to the Solar Keymark scheme rules.

Harald Drück thanked Stefan Mehnert for the elaboration of the document. The document was discussed and some remarks related to the wording were made.

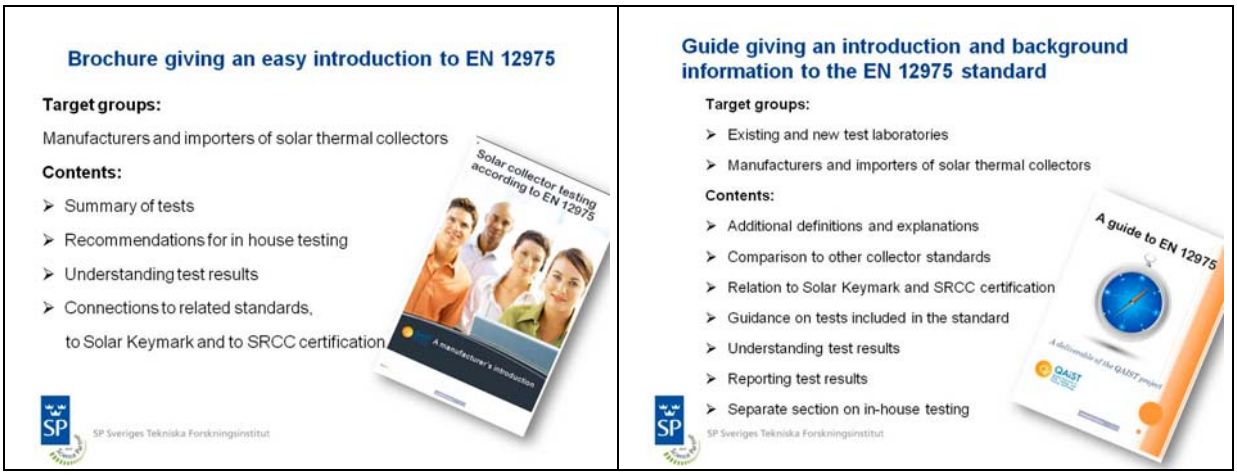
Finally it was agreed that **comments related to the document should be submitted to Stefan Mehnert until July 1st, 2012**. Based on this comments Stefan Mehnert will elaborate a revised version of the Guide for the preparation of “physical inspection reports” as a basis for a resolution during the next Solar Keymark Network Meeting.

In addition there are two other documents under preparation: Revised "Factory Inspection Report" and new "Guide to the Factory Inspection Report". This documents will be finished by Stephan Fischer until the end of June 2012 and will be circulated to the Solar Keymark Network at latest by July 1st, 2012.

Comments on these documents should be submitted to Stephan Fischer until August 1st, 2012.

Item 26: Info on guide to EN 12975 and EN 12976

Peter Kovacs informed about the guide to EN 12975 by means of the following presentation:



Ulrich Fritzsche presented the guide on EN 12976 by showing the document.

Item 27: Presentation about “Energy Output Calculator” and new SK data sheets

Stefan Mehnert informed about the above mentioned aspects by means of the presentation included as Annex D.

During the presentation several aspect were indicated that should be optimised. Jan Erik Nielsen and Peter Kovacs agreed to have a closer look to the points mentioned by Stefan Mehnert and to elaborate a revised version of the “Collector-Gain-Calculator”.

Decision D6.M12 – SCEnOCalc

The collector annual output calculation tool will from now on exclusively be named “Solar Collector Energy Output Calculator (SCEnOCalc)”

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

Item 28: Global certification

At the last Solar Keymark Network meeting a working group related to global certification of solar thermal products consisting of the following persons was established:

Jaime Fernandez Gonzalez-Granda.(chair), Mark Witt, Stephan Fischer, Jan Erik Nielsen, Harald Drück, François-Xavier Ball, Sören Scholz, Ralf Köbbemann-Rengers, Stefan Mehnert.

On January 20th, 2012 this working group had a first web meeting. The minutes of this meeting are available as document SKN_N0198R0. This document was presented by Jaime Fernandez Gonzalez-Granda.

Furthermore Ulrich Fritzsche showed the presentation related to collector certification across the world as annex E.

Furthermore the questions if it makes sense to invite overseas certification bodies for workshop in connection with next SKN meeting was discussed
It was agreed to perform in combination with the next Solar Keymark meting a **Workshop on Global Certification**. This Workshop will take place directly before the Solar Keymark Network meeting on September 5th, 2012 from 9:00 hrs to 12:00 hrs at Madrid.
The organisation of this workshop will be done by Jaime Fernandez Gonzalez-Granda with the assistance of Jan Erik Nielsen and Harald Drück

Item 29: Financial aspects

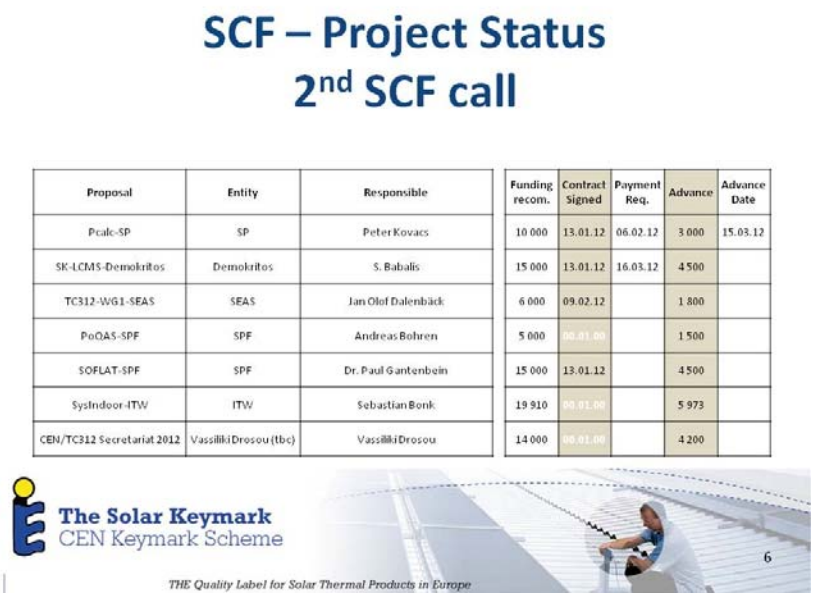
Pedro Dias informed about the financial aspects related to the Solar Keymark Network including the expected income and expenses by means of the presentation included as Annex F. After the presentation some questions were asked by some participants and answered by Pedro Dias.

Item 30: Solar Certification Fund - 1st Call – status report

Pedro Dias informed about the current status of the projects funded by the 1st SCF Call by means of the presentation included as Annex G. After the presentation some questions were asked by some participants and answered by Pedro Dias.

Item 31: Solar Certification Fund – 2nd Call – status report

Pedro Dias informed about the current status of the projects funded by the 2st SCF Call by showing the following slide



Proposal	Entity	Responsible	Funding recom.	Contract Signed	Payment Req.	Advance	Advance Date
Pcalc-SP	SP	Peter Kovacs	10 000	13.01.12	06.02.12	3 000	15.03.12
SK-LCMS-Demokritos	Demokritos	S. Babalis	15 000	13.01.12	16.03.12	4 500	
TC312-WG1-SEAS	SEAS	Jan Olof Dalenbäck	6 000	09.02.12		1 800	
PoOAS-SPF	SPF	Andreas Bohren	5 000	00.01.00		1 500	
SOFLAT-SPF	SPF	Dr. Paul Gantenbein	15 000	13.01.12		4 500	
SysIndoor-ITW	ITW	Sebastian Bonk	19 910	00.01.00		5 973	
CEN/TC312 Secretariat 2012	Vassiliki Drosou (tbc)	Vassiliki Drosou	14 000	00.01.00		4 200	

Item 32: Information on Energy Labelling

Since Gerard van Amerongen was not present Christian Stadler gave a report about the current status. The most relevant points are:

- In February he and his colleagues received the “very final” version of the relevant documents
- In general the interests of the solar thermal community are reflected in an appropriate way
- Main relevant parameters with regard to solar thermal are the collector performance and the heat losses (standing losses) of the store
- Installers perform labelling for system configurations

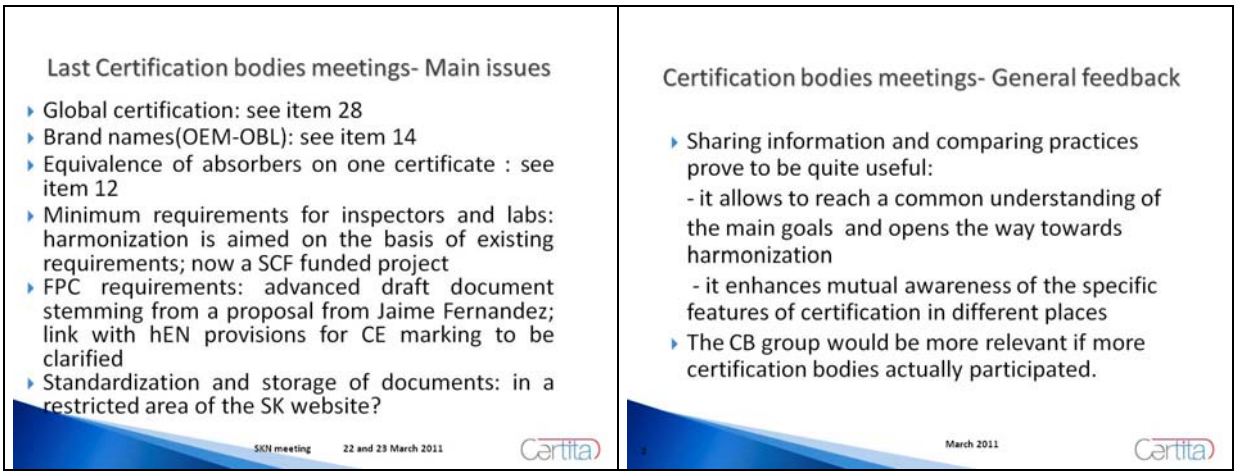
With regard to "Third party testing" Christian Stadler mentioned that the so-called "Module H" applied in the context of the Eco-Labelling procedure asks for a 3rd party testing. As it looks now, this is not the case for "Module B & M" related to conformity assessment of new products. The ESTIF workgroup on EcoDesign and EcoLabelling will investigate that further and come back with specific points.

Most relevant is a direct link between the data required for Eco-Labelling and Solar Keymark certification in order to avoid double testing.

It was agreed that Wolfgang Eisenmann will send the relevant Eco-Labelling documents to the certifiers in order to ask them about their opinion concerning the use of synergy effects with Solar Keymark certification.

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

Francois Xavier Ball reported about main outcomes of the meetings of the **“Solar Keymark certification bodies working group”** by showing the following two slides:



Sören Scholz reported about the latest developments in the **“Solar Keymark Inspection Working Group”**. Since the last Solar Keymark Network meeting no meeting of the “Solar Keymark Inspection Working Group” took place. The next meeting for inspectors will be held on September 5th, 2012 in the morning (directly before the next SKN meeting). In order to give the group a better structure it is intended to elect during this meeting a chairman.

Harald Drück mentioned this concerns that the meeting is in parallel to the Worshop on Global Certification (see ITEM 28). It was agreed that Sören Schloz will investigate if it is possible to have the meeting on September 6th, 2012 directly after the Solar Keymark Network meeting.

Item 34: Information from TC 312

Originally it was planed that Costas Travasaros as the chairman of TC 312 will present the latest news related to TC 312.

Since he was not present several persons mentioned specific relevant topics.

With regard to collectors Stephan Fischer mentioned that the European standard EN 12975-2 is merged with the international standard ISO 9806 -1, -2, -3 to EN ISO 9806 standard.

Furthermore EN 12975-3-1 related to absorber surface durability is under elaboration as a future new European standard. This Standard is planed to become a joined EN ISO Standard as well.

Under lead of ISO TC 180 WG3 (convening country China) the following two joined EN ISO Standards are drafted at present:
- Evacuated tube durability and performance
- Heat pipes for evacuated tubes - Durability and performance

According to Jan Erik Nielsen the complete EN 12977 series will be, according to the time schedule, published in April 2012. The availability of the EN 12977 series is one essential requirement for Solar Keymark certification of custom built systems.

Jan Erik Nielsen mentioned that the **next TC 312 meeting will take place on September 3rd and 4th, 2012 at Madrid.**

Item 35: Information from QAiST-Project

The Project QAiST (Quality assurance in solar thermal heating and cooling technology – keeping track with recent and upcoming developments) started officially on June 1st, 2009 and has a duration of 3 years. Project co-ordinator is Pedro Dias from ESTIF.

He presented the project by using the presentation attached as Annex H.

In addition to the general project presentation a “country report” was presented from Albania by Eddi Hido attached as annex I.

In addition a discussion about **installer certification** took place. In this context Pedro Dias told that according to the Renewables-Directive installer certification will be required related to “small scale renewalbes”. Furthermore Pedro Dias mentioned the QualiCert project in the context of this issue. See also: http://www.qualicert-project.eu/

It was agreed that the certifiers will investigate the subject of installer certification in more detail and present the results at the 13th Solar Keymark Network meeting.

Item 36: New Solar Keymark Website

Pedro Dias informed about the new Solar Keymark Website to be launched and presented it by means of the presentation attached as annex J.

The activity was very much appreciated by the Solar Keymark Network!

In order to provide information related to certification bodies and test labs in a uniform way an appropriate data form will be elaborated. A draft version of this data form will be distributed by Pedro Dias during the coming days.

Concerning comments for the further improvement of the new Solar Keymark Website and other issues related to Solar Keymark, members can write to skn@estif.org

Item 37: Information from CEN / CCB

Inga Schlüter informed about the position of CEN / CCB related to the following aspects:

Certification of PV/T collectors:
Since the relevant comments were already made in the context of the discussion related to PV/T collectors under item 9 this topic was not addressed any more by her.

CEN Keymark database:
The database will be assessed and improved. Among others a calculator for the licence fee will be implemented

Global Keymark:
CCB is waiting for a good proposal from the Solar Keymark Network.

Any other issues:
CEN will review the Keymark by a task force and thinks also about outsourcing the management of the Keymark.
With regard to the review Inga Schlüter asked to send comments related to the improvement of Solar Keymark certification to her.

Item 38: Experience with the misuse of the Solar Keymark

Sören Scholz reported that misuse is still a problem, especially in China.

If in the search engine www.alibaba.com the search topic “Solar Keymark” is entered, a lot of “Solar Keymark Certified” products from Chinese manufacturers can be found

Detailed information about misuse will be presented a the 13th Solar Keymark Network meeting.

Item 39: Any other business

Item 39.1: Promotion of Solar Keymark

Pedro Dias mentioned the ESTIF stand at the Intersolar trade fair at Munich in June where also Solar Keymark will be presented. He offered the possibility to use the ESTIF stand for personal meetings during the trade fair.

Furthermore he reported about the European Solar Days campaign and asked about a partnership between Solar Keymark and the European Solar Days. The participants agreed to this strategic partnership.

Additional Pedro Dias mentioned the idea of launching a newsletter twice a year, typically after the Solar Keymark Network meeting in order to report about the latest decisions and resolutions as well as about the most relevant developments.

Jaime Fernandez Gonzalez-Granda presented a Solar Keymark promotion / information concept based on videos placed in the Internet.

Item 40: Important national developments

Italy: Vinod Sharma informed about the latest developments in Italy by means of the presentation attached as annex K.

Sweden: Subsidies for solar thermal were stopped by the end of 2011.

Slovakia: Subsidies for solar thermal were stopped by the end of 2011.

Czech Republic: Subsidy programme “Green to Savings” stopped.

Copy of Item 6: Date and place of next meetings – since next meetings are usually stated at the end of the minutes

The **13th SKN meeting** (autumn 2012 meeting) is scheduled for

September 5th 13:00 hrs to September 6th 14:00 hrs (end of day one at 19:00 hrs)

at Madrid at the premises of AENOR based of an invitation from Jaime Fernandez Gonzalez-Granda.

Note: **Workshop on Global Certification** on September 5th, 2012 from 9:00 hrs to 12:00 hrs

The **14th SKN meeting** (spring 2013 meeting) is scheduled for

March 12th to March 13th 2013 (two days) (end of day one at 19:00 hrs)

at the premises of SII headquarters at Tel Aviv, Israel based on an invitation from Reuven Godali.

The **15th SKN meeting** (autumn 2013 meeting) is scheduled for

September 24th 13:00 hrs to September 25th 14:00 hrs (end of day one at 19:00 hrs)

at Boras, Sweden (provided the spring 2013 meeting is not held there)

Item 40: End of meeting

Harald Drück thanked the participants for attending the meeting and for their constructive discussions. He closed the meeting at 13:30 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 April 22th, 2012

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Email: **drueck@itw.uni-stuttgart.de**

Contact address Solar Keymark Secretariat:
Jan Erik Nielsen
PlanEnergi
Aggerup 1
4330 Hvalsoe, DK
Email: jen@planenergi.dk

Annex A: List of participants

12th Meeting, Berlin, March 20th & 21st, 2012

NAME	ORGANISATION
Achim Sadenwater	DIN CERTCO
Alexandar Prodanov	Solar Test Center in Skopje
Allard Slomp	KIWA
Andreas Bohren	SPF Solartechnik
Baud Qiu	Intertek Testing Services Shenzhen Ltd., Changzhou Branch
Carlo Vassella	SPF Solartechnik
Carsten Lampe	ISFH
Christian Stadler	General Solar Systems GmbH
Danjana Theis	IZES GmbH
Edmond Hido	Albania-EU Energy Efficiency Centre
Filippo Brivio	IMQ SpA
Francis Kliem	IFSH Hameln/Emmerthal
Francois Xavier Ball	CERTITA
Giovanni Bellenda	Eurofins / Modulo-Uno
Hanspeter Weiss	Ernst Schweizer AG/ Swissolar
Harald Drück	ITW
Henry Rosik	ITC Zlín
Inga Schlüter	DIN on behalf of CCB
Ioannis Alexiou	DQS Hellas
Jaime Fernandez Gonzalez-Granda	AENOR
Jan Erik Nielsen	Solar Key Int.
Jana Levická	TSU Piestany
Jeff Profke	Australien National Testing Laboratories
Joakim Byström	SIS/Absolicon Solar Concentrator AB
João Santos	CERTIF
Jorge Facao	LNEG
Julien Heintz	CETIAT
Korbinian Kramer	Fraunhofer ISE
Malte Kottwitz	TÜV Rheinland Shanghai
Marco Trionfetti	ICIM S.P.A.
Markus Alsbjer	SP Technical Research Institute of Sweden
Nguyen Coralie	CSTB
Patrick Hauser	Austria Solar (National industrial representative) TISUN
Patryk Hirszler	PIMOT

Pedro Dias	ESTIF
Peter Kovacs	SP Technical Research Institute of Sweden
Rainer Koch	GCS - Global Certification Services
Randy Tan	Intertek Testing Services Shenzhen Ltd., Changzhou Branch
Richard Horton	Solahart
Stamatios Babalis	NCSR “Demokritos”
Stefan Mehnert	Fraunhofer ISE
Stephan Fischer	ITW
Sören Scholz	DIN CERTCO
Thommy Williamson	Kingspan Renewables
Ulrich Fritzsche	TÜV Rheinland Energie und Umwelt GmbH
Vinod Kumar Sharma	ENEA
Wolfgang Eisenmann	Wagner / BSW
Xavier Olano	CENER

Annex B:
Presentation related to
Testing of PV/T collectors

Status of standardisation on PV/T collectors

TestLab
Solar Thermal Systems

Korbinian Kramer

Fraunhofer Institute for
Solar Energy Systems ISE

SKN Meeting, Berlin

www.collectortest.com

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Focused items:

- PV/T Collectors - technological variations
- Reference area – a lack of definition
- Testing procedures – how to bridge the gap
- Certification – consequences of (not) Keymarking

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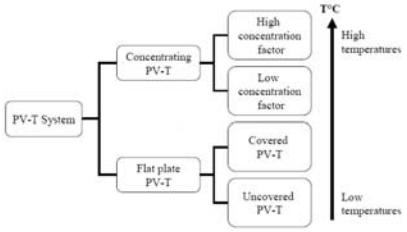
PV/T Collectors - technological variations



P. Dupeyrat et.al., MEASUREMENTS AND BENCHMARK OF PV-T COLLECTOR ACCORDING TO EN 12975 AND DEVELOPMENT OF A STANDARDIZED MEASUREMENT PROCEDURE, Proceedings of Eurosun 2010

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Reference area and more – a lack of definition

- No aperture area related efficiency values should be published based on the recent area definition for FPC under SKM
- Power output is okay and should be showed differentiated on heat and power, correlated with 3 m/s wind speed
- A clear and physicly right definition should be found, for :
  - What a PV/T collector is
  - How to present the results of the products to make a fair comparrison possible

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Testing procedures – how to bridge the gap

EN 12975-1:2006 European standard for solar thermal collector measurements		IEC 61215 Standard for PV module testing	
5.3.2	Internal pressure for absorber	10.1	Visual inspection
5.3.3	High temperature resistance	10.2	Electrical performance
5.3.4	Exposure	10.3	insulating stability against voltage
5.3.5	External thermal shock	10.4	Identification of temperature coefficient
5.3.6	Internal thermal shock	10.5	Identification of NOCT
5.3.7	Rain penetration	10.6	Performance at NOCT and STC
5.3.8	Mechanical load test	10.7	Performance at low irradiation
5.3.9	Thermal performance	10.8	Long-term test at outdoor conditions
5.3.10	Freeze resistance test	10.9	Hot-Spot test
Annex L Pressure drop		10.10	UV-Aging test
		10.11	Temperature cycling test
		10.12	Humidity heat test
		10.13	Humidity freezing test
		10.14	Strength test of connectors
		10.15	Creepage current test under wet conditions
		10.16	Mechanical strength
		10.17	Hail test
		10.18	Bypass diode test
		10.19**	Light-aging

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Certification – consequences of (not) Keymarking

Minimum Consensus for Keymarking:

- Require IEC 61730 declaration from manufacturer on the complete PV/T product, certificate tracing to an accredited test centre
- Run a full functional test sequence according to EN 12975
- Characterise the performance of the PV/T as decided in SKN D7M10

- Not Keymarking will leave the PV/T in an difficult market position, also it is maybe not subsidized anyway (as for example in Gremany)
- On basis of the EN 12975 testing no declaration against CE low voltage regulation can be proclaimed

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Thank you for your kind attention.

Korbinian Kramer
Head of TestLab Solar Thermal Systems

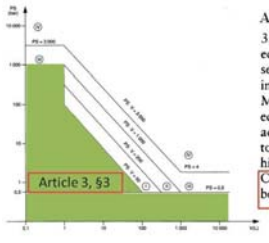
testlab-sts@ise.fraunhofer.de
www.collectortest.com
www.kollektortest.de

Annex C:
Information on Pressure Equipment Directive

No CE-marking of typical small modules:

Small size, low pressure, low temperature modules:

- no risk of over heating: design temperature > stagnation temperature
- intended use: T < 110 °C
- pressure-volume product: PS*V < 50 litre*bar



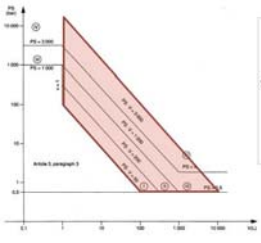
Article 3, §3

3. Pressure equipment and/or assemblies below or equal to the limits in sections 1.1, 1.2 and 1.3 and section 2 respectively must be designed and manufactured in accordance with the sound engineering practice of a Member State in order to ensure safe use. Pressure equipment and/or assemblies must be accompanied by adequate instructions for use and must bear markings to permit identification of the manufacturer or of his authorized representative established within the Community. Such equipment and/or assemblies must not bear the CE marking referred to in Article 15.

CE-marking of typical large modules:

Large size, low temperature modules:

- no risk of over heating: design temperature > stagnation temperature
- intended use: T < 110 °C
- pressure-volume product: PS*V ≥ 50 litre*bar



ANNEX II

CONFORMITY ASSESSMENT TABLES

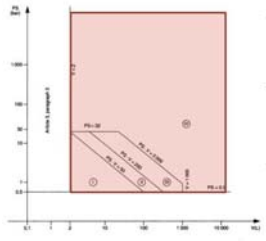
1. The references in the tables to categories of modules are the following:
   - I = Module A
   - II = Module A1, D1, E1
   - III = Modules B1 + D, B1 + F, B + E, B + C1, H
   - IV = Modules B + D, B + F, G, H1

I: Self declaration
II – IV: 3rd party testing & surveillance

CE-marking of typical concentrating tracking modules:

High temperature modules:

- risk of over heating: design temperature < stagnation temperature
- intended use: T > 110 °C



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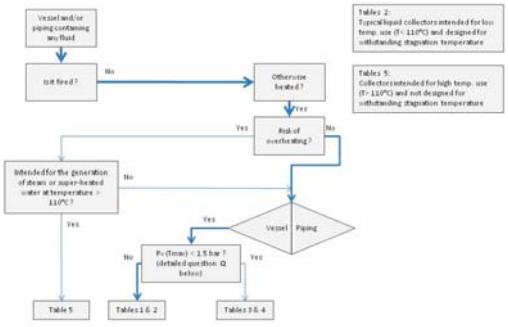
I: Self declaration
II – IV: 3rd party testing & surveillance

Table ZA — Correspondence between this European Standard and Directive 97/23/EC

Clause(s)/subclause(s) of this EN	Content	Section of Annex I of Directive 97/23/EC
4 and Annex F	Provision and consideration of appropriate material	2.2.3(b) 1st indent
6.3.3	Material ductility	4.1(a)
6.4 and Annex A	Prevention of brittle fracture	4.1(a)
6.5	Material documentation	4.3
6.2 and 6.3	Corrosion or other chemical attack including wear	2.6 and 2.7
6.4	To be designed for loading appropriate to its intended use	Annex I 2.2.1
6.7	Calculation pressure	2.2.3b 1st indent
6.9	Minimum material temperature	4.2 (a)
6.10	Calculation temperature	2.2.3b 2nd indent
6.10.3	Risk of overheating for heated pressure equipment	5
6.11	Joint coefficients	7.2
6.12 and Annex F	Design stress	2.2.3 a) and 4.2 a)
6.13.1 to 6.13.4	Access, inspection, venting, draining filling and discharge provision	2.4, 2.5 and 2.9
6.14	Method for design	2.2.3 a)
6.14.1 b) and Annex E	Experimental method	2.2.4
7.2	Material traceability	3.1.1
7.4, Annexes B and K	Permanent joint	3.1.2
7.5	Forming of pressure parts	3.1.1
7.6	Heat Treatment	3.1.4
8.7	Non destructing testing	3.1.3
8.9	Final inspection	3.2.1
8.9.4 and Annex C	Pressure test	3.2.2 and 7.4
8.10	Marking	3.3
8.11	Manufacturer instruction	3.4

All collectors

(most collectors are classified according to table 2)



Q: Does the vessel or piping contain liquid whose vapour pressure at the max allowable temperature is not more than 0.5 bar above normal atmospheric pressure ?

Annex D:
Information related to SCEnOCalc

FRAUNHOFER-INSTITUT FÜR SOLARE ENERGIESYSTEME ISE

Energy Output Calculator – open questions

Stefan Mehnert/Korbinian Kramer

Fraunhofer-Institut für
Solare Energiesysteme ISE

SKN-Meeting
Berlin, 21.03.2012

SKN_N0190R0

www.ise.fraunhofer.de

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TestLab Solar Thermal Systems

Editorial notes:

1. Wurzburg vs Würzburg
2. Asimuth vs Azimuth
3. uniform presentation of decimals within Data Sheet and Energy calculator
4. Stagnation temperature based on efficiency parameters
5. Pmean calculation within the SKM-Data-Sheet
6. Specification of Gtot within the SKM-Data-Sheet

Tracking modes:

1. Interpretation of tracking modes
2. Pictures for tracking modes
3. No tracking mode NS with tilt angle available
4. SKM-Data-Sheet vs Energy Output Calculator

Functionalities:

1. One Simulation, four locations
2. Pre-selection of "tilt angle" and "azimuth angle"
3. Interpolate function
4. Mirror function

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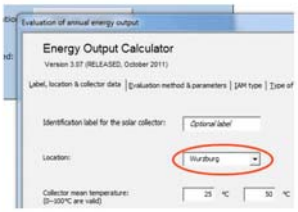
Editorial notes

1. Wurzburg vs Wuerzburg



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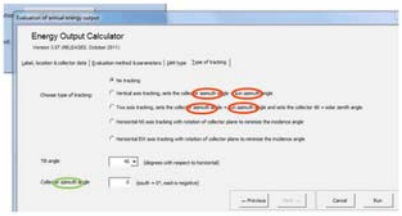
Editorial notes

2. Asimuth vs Azimuth



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Editorial notes

3. uniform presentation of decimals within Data Sheet and Energy calculator

Suggestion:

3 decimal places in a2

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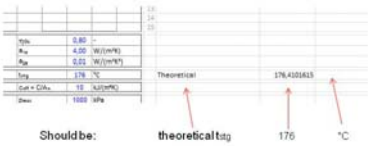
Editorial notes

4. Stagnation temperature based on efficiency parameters



Should be: theoretical t_{stg} 176 °C

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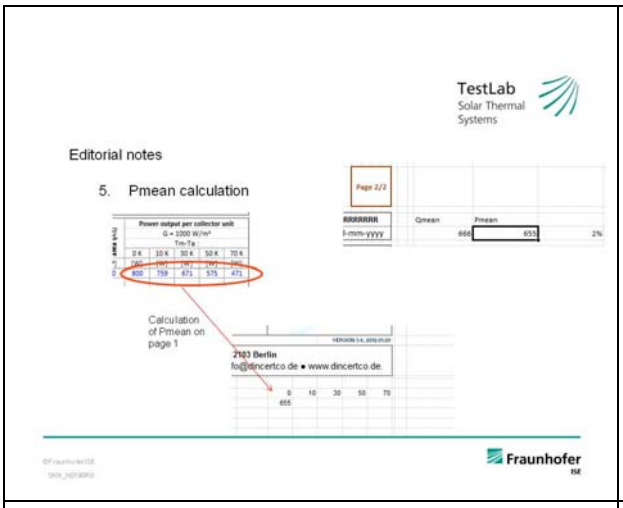
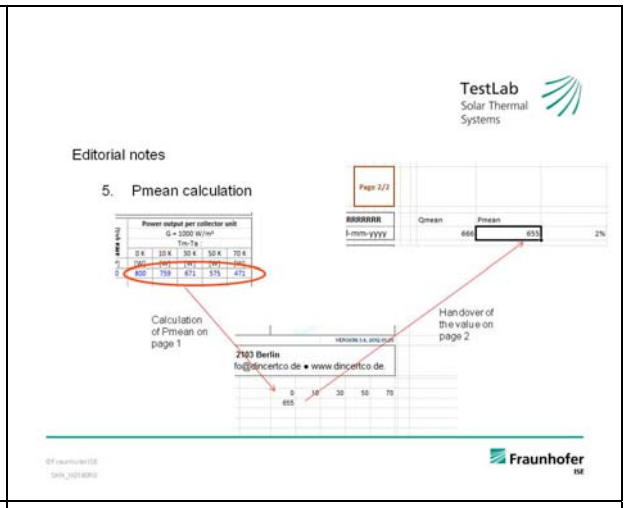
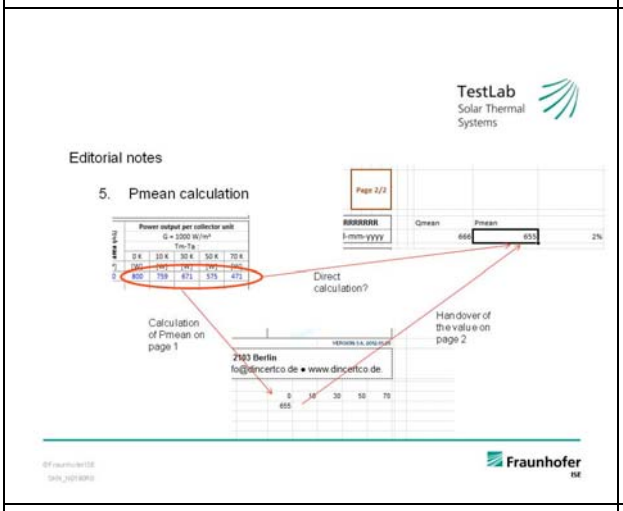
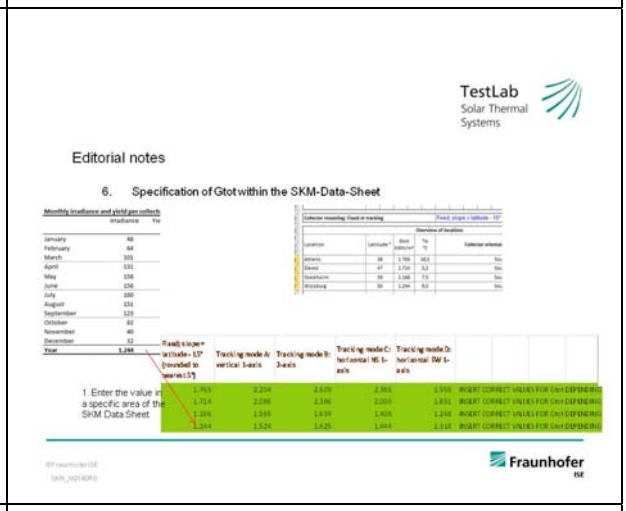
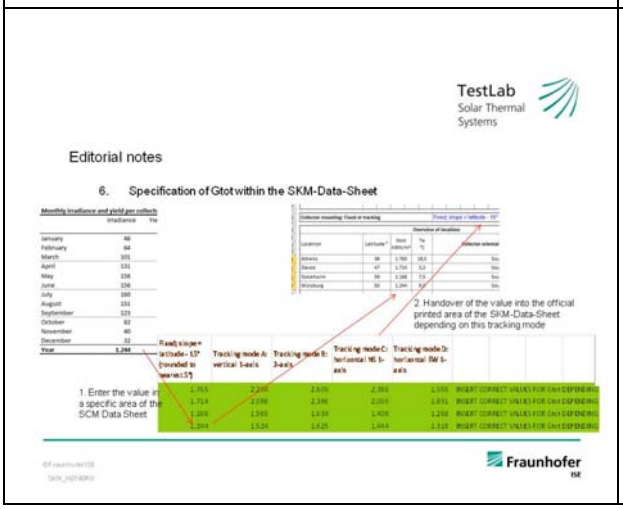
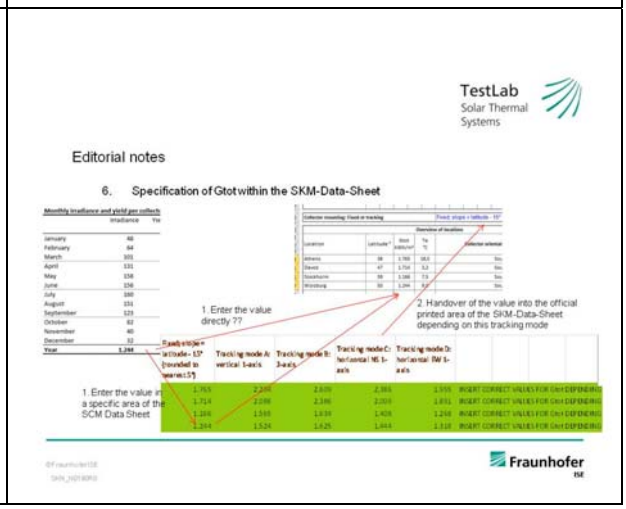

TestLab
Solar Thermal
Systems
Editorial notes
5. Pmean calculation
Calculation of Pmean on page 1
2103 Berlin
Fraunhofer ISE


TestLab
Solar Thermal
Systems
Editorial notes
5. Pmean calculation
Calculation of Pmean on page 1
Handover of the value on page 2
2103 Berlin
Fraunhofer ISE


TestLab
Solar Thermal
Systems
Editorial notes
5. Pmean calculation
Direct calculation?
Calculation of Pmean on page 1
Handover of the value on page 2
2103 Berlin
Fraunhofer ISE


TestLab
Solar Thermal
Systems
Editorial notes
6. Specification of Gtot within the SKM-Data-Sheet
Fraunhofer ISE


TestLab
Solar Thermal
Systems
Editorial notes
6. Specification of Gtot within the SKM-Data-Sheet
2. Handover of the value into the official printed area of the SKM-Data-Sheet depending on this tracking mode
Fraunhofer ISE


TestLab
Solar Thermal
Systems
Editorial notes
6. Specification of Gtot within the SKM-Data-Sheet
1. Enter the value directly ??
2. Handover of the value into the official printed area of the SKM-Data-Sheet depending on this tracking mode
Fraunhofer ISE

TestLab Solar Thermal Systems

Tracking modes

1. Interpretation of tracking modes

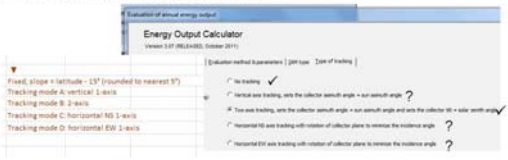
2. Pictures of the different modes would be very helpful to avoid misunderstandings!
3. There is no tracking mode for tilted NS tracking available

Fraunhofer ISE

TestLab Solar Thermal Systems

Tracking modes

4. SKM-Data-Sheet vs. Energy output calculator



-> description should be the same to avoid misunderstandings

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TestLab Solar Thermal Systems

Functionalities

1. One simulation, four locations

Currently, four simulations (Athens, Davos, Stockholm, Würzburg) are necessary to fulfill the input in the Data Sheet -> high effort

Suggestion:

Build up the tool in such a way that the results for the above mentioned locations are given by one simulation

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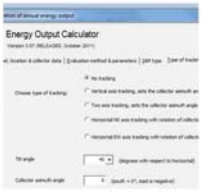
Functionalities

1. Pre-selection of "tilt angle" and "azimuth angle"

Currently, the tilt angle and the azimuth angle of the collector can be freely selected for each of the four locations -> High potential to produce different results for the same collector

Suggestions:

- set tilt angle = latitude to further harmonize the procedure
- Automation of the input of the tilt angle as a function of the location in order to avoid incorrect operation



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Functionalities

2. Interpolate -> no explanation given!
3. Mirror function -> when disable / enable ?

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TestLab Solar Thermal Systems

Additional comments from the German expert circle EK-TSuB

1. uniform wording / name of the Tool
   -> suggestion: "Collector Gain Calculator"
2. Saveability -> currently only the result of the calculation can be saved and not the collector parameters
3. Adaption of further / other IAM-Angles must be possible
4. Handover of all values from the / into the SKM-Data-Sheet
5. How to print a two-side pdf from a excel sheet?

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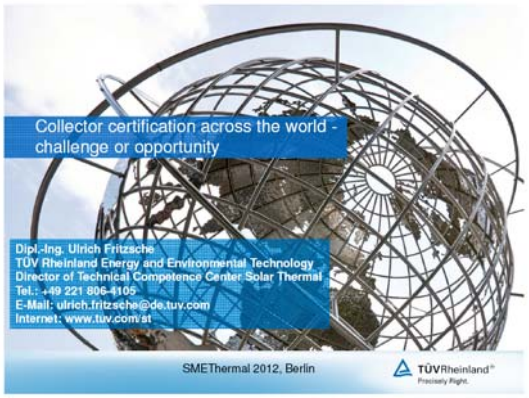
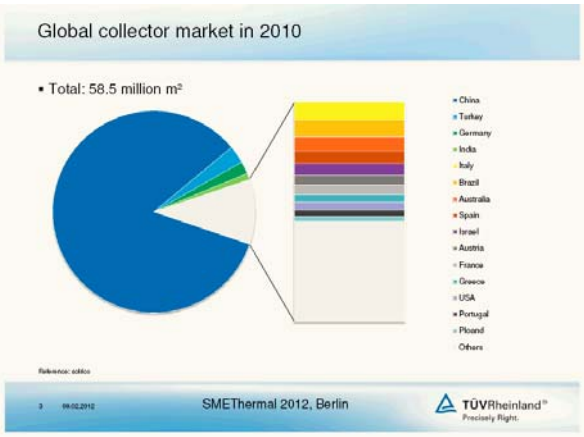
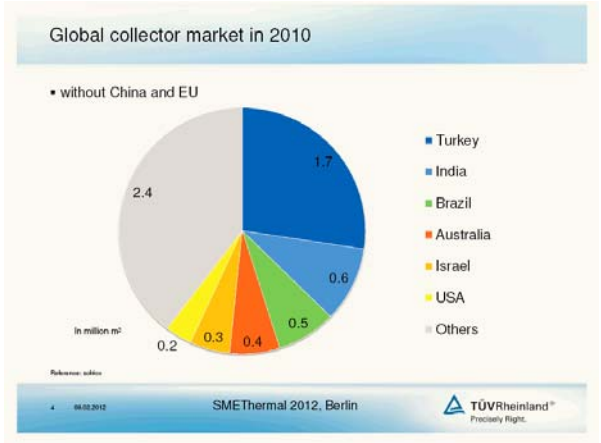
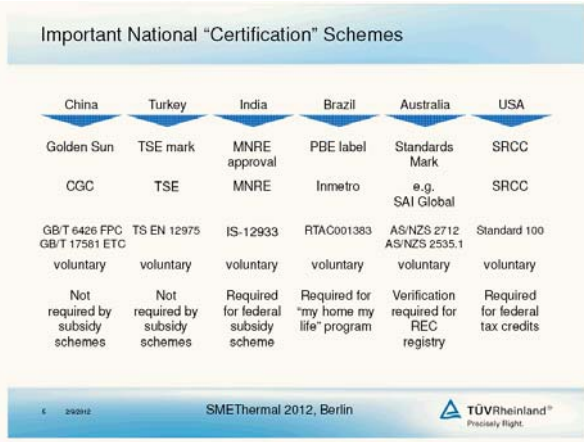
Annex E:
Presentation related collector certification across the world









National certification schemes - China

How to start the procedure?

- Applicants shall obtain the certification application form (QPG0101) from CGC
- Manufacturer have to send application form together with requested material documents to CGC (China General Certification center)
- CGC shall make the initial reviewing as well as the formal reviewing
- After the contract is signed, CGC will send notice to the test center and factory inspection experts
- Manufacturer can advise CGC which lab they want to test their products but CGC keep the authority to appoint the test lab (usually by region)
- Test requirements out of GB/6424-1997 and GB/T17581-2007 almost the same as EN 12975 (only irradiation and wind speed requirements differs)
- Testing must follow the test sequence strictly
- Solar Keymark test report is not accepted
- After final review, CGC will issue the Golden Sun certificate

National certification schemes - Turkey

- TSE label given by Turkish Standards Institution
- Voluntary "registration", not linked to subsidy schemes
- TSE is following TS EN 12975
- Thermal performance tests will be done in TSE related labs
- Reliability tests will be done at manufacturer laboratories and will be verified by TSE
- Testing and certification fee ca. 3.000 TRY (1.300 Euro)
- Turn around time for testing and certification ca. 2 months
- Solar Keymark won't be accepted
- Annually factory inspections by TSE auditors
- Performance test will be repeated every 2 years

National certification schemes - India

- No certification scheme for collectors available
- Subsidy scheme requires IS-12933 testing/ „certification“
- Several national test labs are authorized (Madurai Kamaraj University; Pune University; Sardar Patel Renewable Energy Research Institute (SPRERI); Devi Ahilya University; Indore and Solar Energy Centre, Gwalpahari)
- Certification fee is low (< 100,- Euro) testing fee: no information
- Turn around time 2.5.. 3 months
- Ca. 25 large scale manufacturer and 100 small players (subcontracted to large ones) actually listed
- For flat plate collectors, Bureau of Indian Standards IS-12933 is followed
- Solar Keymark won't be accepted

National certification schemes - India

How to start the procedure?

- Manufacturer have to apply for registration on approved list of suppliers at MNRE (Ministry of New and Renewable Energy)
- Registered manufacturer can send collector samples along with raw material samples (piece of copper fins and pipes, aluminum frame etc.) for „certification“
- Flat plate collector manufacturer should have BIS certification to apply to MNRE with a copy of certificate for getting listed as approved manufacturer
- For tube collectors, there are no standards available, but they are being framed
- IS-12933-5 compared with EN 12975-2:
  - Sequences are nearly similar to EN standard, but only steady state test
  - Static pressure test with two times max. operating pressure
  - Minimum Irradiation level for shock tests is only 700 W/m²
  - Impact test with steel ball (150 g) at 1 m height 3 times at each corner
  - Transmittance test for glass covers required

National certification schemes - Brazil

- Conformity evaluation program „PBE“ by „labeling“ covers solar thermal collectors among other things
- All kind of collectors that fits to „RAC – Regulamento de Avaliacao da Conformidade“ (INMETRO No 395/2008)
- Different standards mentioned like EN 12975-2; Ashrea 93 & 96; NBR10184; ASTM E 823-81 and FSEC-GP-5-80
- Currently a voluntary program without linked subsidy schemes, but required for governmental programs
- Government wants to make it mandatory
- No certification fees beside laboratory testing costs
- So far only Brazil laboratories accepted (GREEN/PUC, Minas/MG & IPT/SP)
- Solar Keymark or SRCC tests are not accepted

National certification schemes - Brazil

Currently Certification procedure:

- Process has started by request of the Brazilian manufacturer association
- The Brazilian government, through the INMETRO, has established the rules for the qualification resulting in the RAC
- Ranking and most reference numbers will continue to be based on gross area.

New certification rules:

- Rules are under review, ISO 9001 requirements will be added and almost all tests will follow NBR 15747-2 (essentially a translation of EN 12975-2)
- Under the new rules, manufacturer will have 2 ½ years time for getting ISO 9001 accreditation and collector tests done. They will have to go through full accreditation process, which is currently very slow and bureaucratic
- RAC download (only in Portuguese): http://www.inmetro.gov.br/legislacao/rtac/pdf/RTAC001383.pdf

National certification schemes – Australia and New Zealand

- Mandatory Renewable Energy Target in particular the Small-scale Renewable Energy Scheme requires AS/NZS 2712 testing for collectors
- Solar Keymark test reports according to EN 12975-2 will be accepted as a basic test.
- Test labs need to be accredited by an ILAC member (International Laboratory Accreditation Cooperation ; the scope must include AS/NZS 2712 and AS/NZS 2535.1)

- Additional requirement of AS/ NZS 2712:
  - 10 days stagnation test (12 hours per day) including a post stagnation performance test
  - Rain penetration test differs from current EN approach, but close to new EN/ISO draft
  - Impact resistance test either with 25.4 mm steel ball or 25 mm ice ball

National certification schemes – Australia and New Zealand

The way to get **Standardsmark** certification (e.g. by SAI-Global)

- First step is always applying to SAI Global (including first payment)
- After definition of products and standards, SAI-Global defines the test requirements for model range
- If there are pre existing reports (e.g. following EN 12975-2/ accredited test lab), this will be taken into account for the definition of required tests
- SAI-Global define tests and samples needed (selected by laboratory)
- SAI Global advice lab & client of test program
- Sample selection and submission to lab
- Conduct test program as advised
- Issue report to SAI-Global (direct!) and client
- Assessment of report, advise applicant, proceed with process of certification
- Final step: issuing of certificate!

National certification schemes - USA

- SRCC OG-100 for solar thermal collectors
- Required by state and local authorities
- Subsidy schemes mostly require SRCC certification
- Several labs in the USA (7), Europe (9), Asia (1) and Australia (1) accredited
- Certification fee is linked to sold m² collector area
- Turn around time 1... 3 months (for certification)
  There was a major improvement over the past three years!

- Nearly 900 glazed collectors are rated and certified (including different sizes within a collector family)
- SRCC Standard 100 is mainly following ISO 9806
- Testing must follow the test sequence strictly
- Solar Keymark won't be accepted

National certification schemes - USA

The way to get **SRCC** certification (by SRCC)

- First step should always be applying to SRCC
- After definition of products and standards, SRCC confirm the test requirements (Important, if for example the testing and operating flow deviate from the strict SRCC requirements)
- Test sample picking could be performed either according to Solar Keymark or SRCC requirements
- Test lab send the report to SRCC (direct!) and client
- Assessment of report, advise applicant, proceed with process of certification
- Final step: issuing of certificate!
- FAQ list for manufacturer available: http://www.solar-rating.org/faq/OG100_faqs.pdf

Within the first three years of SRCC Standard 100 testing, TÜV Rheinland had performed more than 70 collector tests for SRCC certification!

Conclusion

- Global certification is a challenge
- There are different certification bodies for each local market
- It is not possible to perform tests in only one laboratory
  (But TÜV Rheinland is always trying to enlarge their accreditation scope and certification body recognitions.)
- Standards for testing are not harmonized, but mainly following ISO 9806 and EN 12975
- More and more national subsidy schemes are linked to certification schemes
- Some national programs may be only open for local manufacturer
- Some countries have still testing bottle necks (like Brazil), others have overcome this problem (like USA)

Outlook: Global certification scheme

- First step: harmonized basic collector testing standard EN ISO 9806
  - Draft ready for public inquiry
  - Release of final EN ISO 9806 version within 2013
  - Classification for different climates important basis for worldwide standard
- Intermediate step: acceptance of EN ISO 9806 tests + local requirements
  - Good opportunity to cover the main markets
  - Additional tests for special local conditions still required
- Final step: a global quality mark, which covers a wide range of climate conditions
  - Harmonization of certification schemes and certification bodies
  - Harmonization of testing laboratory quality


TÜV Rheinland - Worldwide Presence
Solar Master Laboratories in Germany, Ancona/ Italy, Bangalore, Daya/Taiwan, Yokohama, Shanghai und Tempe/Arizona
490 locations in 61 countries.
SMEThermal 2012, Berlin
TÜVRheinland
Precisely Right.


TÜV Rheinland - Worldwide Presence
▪ TÜV Rheinland Energy and Environment GmbH Cologne, Germany: Solar Keymark, SRCC, AS/NZS, PV-module testing (Golden Sun PV), PV component testing
▪ TÜV Rheinland Energy and Environment GmbH Ancona, Italy: Outdoor test field for solar thermal and PV testing applications
▪ TÜV Rheinland PTL Tempe, Arizona: Solar Keymark, SRCC, Golden Sun (in preparation), PV-module and component testing
▪ TÜV Rheinland Shanghai: Solar Keymark, PV-module and component testing
▪ TÜV Rheinland India, Bangalore; TÜV Rheinland Taiwan and TÜV Rheinland Japan : PV-module and component testing
SMEThermal 2012, Berlin
TÜVRheinland
Precisely Right.


We are ready to face the next great challenge!
Thank you for your attention!
SMEThermal 2012, Berlin
TÜVRheinland
Precisely Right.

Annex F:
Financial aspects

Solar Keymark Network meeting

12th meeting
21-21 March 2012
DINCERTCO, Berlin

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SKN Finances 2011

Item	Description	Amount Committed	Amount Paid
PROJECTS			
1st Call		130.950	39.320
	2-A-Check 12976-Fraunhofer	15.000	4.500
	4-A-EN13203-3 solar-SWT	14.950	4.485
	7-A-Legio2010-vAConsult	27.150	8.145
	9-A-SK 12977-PlanEnergi	20.000	6.035
	10-B-CE 2010-SWT	12.900	3.870
	12-B-SK Update-SP	20.000	6.000
	13-C-AdminSFC2010-ESTIF	8.950	2.685
	14-C-GloboCert-PlanEnergi	5.000	1.500
	15-C-SK TC164:2010-vAConsult	7.000	2.100

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SKN Finances 2011

Item	Description	Amount Committed	Amount Paid
PROJECTS			
2nd Call		84.910	0
	Pcalc-SP	10.000	0
	SK-LCMS-Demokritos	15.000	0
	TC312-WG1-SEAS	6.000	0
	PoQAS-SPF	5.000	0
	SOFLAT-SPF	15.000	0
	SysIndoor-ITW	19.910	0
	CEN/TC312 Secretariat 2012	14.000	0

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SKN Finances 2011

Item	Description	Amount Budgeted	Amount Expenses
RUNNING COSTS			
2011		82.980	77.866
	SKN Chair	10.000	10.000
	SKN Technical Secretary	41.740	41.740
	SKN Admnistrative Secretariat	10.880	9.622
	Extra: Web+Brochure+News	20.360	16.504
	TOTAL RUNNING COSTS	82.980	77.866

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SKN Finances 2011

Item	Description	Amount Claimed	Amount Received
REVENUES			
2011		228.230	229.512
	DIN CERTCO	192.850	192.850
	CERTIF	20.880	20.880
	ICIM	8.410	8.410
	ELOT	3.480	3.480
	SP Sveriges	1.450	1.450
	Kiwa	580	580
	TSU	580	580
	Interests		1.282
	TOTAL REVENUES	228.230	229.512

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SKN Finances 2011

TOTAL PAYMENTS	117.186
TOTAL COMMITED TO PROJECTS	215.860
TOTAL INCOMES	229.512
AMOUNT AVAILABLE: 31/12/2010	90.360
Resources available for 2011	319.873
Resources allocated in 2011	293.726
AMOUNT AVAILABLE: 31/12/2011	26.147

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SKN Finances 2011

Bank account	
31/12/2010	90.360
Balance 2011	112.326
Pending Movements	(17.684)
31/12/2011	220.370

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SKN Budget 2012

Item	Description	Amount Committed
RUNNING COSTS		
2012		79.160
	SKN Chair	11.000
	SKN Technical Secretary	45.600
	SKN Administrative Secretariat	22.560
	TOTAL RUNNING COSTS	79.160

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SKN Budget 2012

REVENUES		
2012		248.530
	DIN CERTCO	211.410
	CERTIF	21.170
	ICIM	8.410
	SP Sveriges	3.770
	AENOR	1.740
	TSU	1.160
	ELOT	870
	Kiwa	580
	DQS Hellas	290
	Interests	0
	TOTAL REVENUES	248.530

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SKN Budget 2012

AMOUNT AVAILABLE (31/12/2011)	26.147
TOTAL EXPENDITURES	79.160
TOTAL INCOMES	248.530
AMOUNT AVAILABLE: 2012	195.517
3rd SCF CALL (max contribution)	176.565
PENDING COMMITMENTS (for information)	176.540
1st Call	130.950
2nd Call	84.910
Advances	-39.320

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Annex G:
Solar Certification Fund – 1st Call – status report

Solar Keymark Network meeting

12th meeting

DINCERTCO, Berlin

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SCF – Project Status
1st SCF call

Proposal	Entity	Responsible	Funding recom.	Advance	Advance Date	Report SKN Meeting
2-A-Check:12976-Fraunhofer	Fraunhofer ISE	Korbinian Kramer	15 000	4 500	22.07.11	15.03.12
4-A-EN13203-3 solar-SWT	SWT	Dipl.-Ing. D. Bestenlehner	14 950	4 500	31.08.11	20.03.12
7-A-Legio2010-vAConsult	vA Consul	Gerard van Amerongen	27 150	9 000	27.07.11	15.03.12
9-A-SK 12977-PlanEnergi	PlaEnergi	Jan Erik Nielsen	20 000	6 035	22.07.11	14.03.12
10-B-CE2010-SWT	SWT	Stephan Fischer	12 900	3 000	27.07.11	20.03.12
12-B-SK Update-SP	SP	Peter Kovacs	20 000	6 000	22.07.11	20.03.12
13-C-AdminSFC2010-ESTIF	ESTIF	Pedro Dias	8 950	2 160	22.07.11	20.03.12
14-C-GloboCert-PlanEnergi	PlaEnergi	Jan Erik Nielsen	5 000	1 500	21.06.11	14.03.12
15-C-SK TC164:2010-vAConsult	vA Consult	Gerard van Amerongen	7 000	2 100	27.07.11	15.03.12

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SCF project reporting
Status: [month] [year]

Acronym of project:	
Title of project:	

Project Start Date:		Project End Date:	
Report	Periodic / Final	Reporting period (up to):	[month] [year]

1. Overall progress

Please evaluate the evolution of the project so far, considering:

A)	Fulfilling initial objectives	*1 (will fail) –> 5 (will fully achieve)*	
B)	Complying with timeline	*1 (critical delay[1]) –> 5 (on schedule or ahead schedule)*	

1) In case of a critical delay, action shall be taken: revision of content, budget, duration or project termination.

Please provide a short explanation for the rating indicated above:

A)	
B)	

2. Main achievements towards goals and milestones

Please indicate main achievements of the project so far, in order of relevance:

a)	
b)	
c)	
d)	
e)	

3

3. Deliverables

Please indicate the progress regarding deliverables:

C)	Progress regarding deliverables	*1 (completed<25%) -> 5 (completed = 100%)*	

	Information about each deliverable	Due Date	Completed (%)	Delivery Date[2]
D1				
D2				
D3				
D4				
D5				

(2) Actual or foreseen delivery date

4. Deviations from initial plan

Please indicate main deviations and proposed corrective measures:

Done in [city], [country] at [date] Responsible: [Name + Surname]

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SCF – Project Status
1st SCF call

Proposal	Project Start	Project End	Fulfilling initial objectives	Complying with timeline	Progress regarding deliverables	Comments
2-A-Check:12976-Fraunhofer	04.07.11	30.11.11	5	4	5	Docs to be presented at 12 SKN meeting
4-A-EN13203-3 solar-SWT	20.07.2011	19.01.2012	5	2	3	Extension of the duration necessary - June 12
7-A-Legio2010-vAConsult	20.6.11	31.12.12	5	3	4	Final deliverable by Dec 12 - recommendations
9-A-SK 12977-PlanEnergi	01.04.11	31.03.12	4	4	5	None
10-B-CE2010-SWT	01.07.11	01.03.12	5	4	5	Additional funding may be required
12-B-SK Update-SP	14.11.11	30.05.12	4	3	4	None
13-C-AdminSFC2010-ESTIF	01.10.10	01.04.12	5	4	4	Final work required beyond initial forecast
14-C-GloboCert-PlanEnergi	01.04.11	30.06.12	5	4	4	None
15-C-SK TC164:2010-vAConsult	31.03.11	01.04.12	5	5	5	Project completed

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Annex H:
Presentation related to QAiST

QAiST
Quality Assurance in Solar Heating and Cooling Technology

Solar Keymark Network meeting

Berlin, Germany
20-21 March 2012

INTELLIGENT ENERGY EUROPE

Update

- Project closing in May 2012
- Final project meeting in April 2012

Work being finalised

- WP2: Solar thermal collectors
- WP3: Solar thermal systems
- WP4: Quality assurance of testing
- WP5: New areas for quality assurance systems

Work being finalised

WP2:
Solar thermal collectors

WP2: Solar thermal collectors

- **D 2.1 Performance of mid temperature collectors**

Deliverable	Detail of upcoming steps
Table of contents for summary report R2:1 on ETCs (focus on heatpipes)	Document being prepared for discussion and approval (inputs for partners and prrofreading)
Table of contents for summary report R2:2 on experiences from tests of concentrating and tracking collectors	Document being prepared for discussion and approval (inputs for partners and prrofreading)
Report R2:4 on collector component characterization (receiver, reflector, tracker...)	Document being prepared for discussion and approval

WP2: Solar thermal collectors

- **D 2.2 Durability of collectors and materials**

Deliverable	Detail of upcoming steps
Summary reports on : - rain penetration testing including experiences from application; -on exposure testing including performance testing; - on internal pressure test; - on pressure drop measurements; - on results of questionnaire and proposals for strengthened criteria; - on impact resistance test; - on absorber surface durability and characterization of glazings ; - on stagnation temperature;	Document being prepared for discussion and approval (inputs for partners and proofreading)

WP2: Solar thermal collectors

Deliverable	Detail of upcoming steps
D 2.3 Guide to EN 12975	Final inputs, proofreading, layout, design -Brochure manufacturers - Guide for Test Labs
D 2.4 Performance calculation tool	Finalize validation report Final checks of program, code and manual Final editing of program and summary report

Work being finalised

WP3:
Solar thermal systems

WP3: Solar thermal systems

Deliverable	Detail of upcoming steps
D3.2 Guide of Procedures for Reliability Tests of factory made systems	Document ready for discussion and approval
D3.3 Improved extrapolation procedure	Presentation of results of Round-robin of application of extrapolation methodology and how to integrate in D3.3 which has already version D3.3A and D3.3B
D3.4 Proposal for energy labeling of Factory Made systems	Document ready for discussion and approval
D3.5 Proposal for energy labeling of Custom built systems	Document ready for discussion and approval
D3.6 Proposal – Determination of Hot Water Confort of factory made systems	Document ready for discussion and approval
D3.7 Proposal – Determination of Hat Water Confort of custom build systems	Document being prepared for discussion and approval

Work being finalised

WP4:
Quality assurance of testing

WP4: Quality assurance of testing

- **D4.2 Report describing the results of the collector round robin test**
- **D4.3 Report describing the results of the system round robin test**

Task	Detail of upcoming steps
Reports describing the results of the collector round robin test	Being finalised by IfEP. Discussion and approval at project meeting
Analysis of results	1 day workshop before final meeting

Work being finalised

WP5: New areas for
quality assurance systems

WP 5: New areas for quality assurance systems

- **D5.1 Technical report on combined solar & heat pump systems with system overview and quality requirements**

Task	Detail of upcoming steps
TR 5.1.1: System overview in participating countries with a review of categorisation possibilities (with proposal)	Presentation and approval of the document.
TR 5.1.2: Standard review and evaluation	Presentation and approval of the document. Discussion on possibilities of accounting for SHP-systems in future within current solar standards.
TR 5.1.3: Definition of performance figures	Presentation and approval of the document.
TR 5.1.5: Report on testing procedures (developed and under development)	Presentation of the draft document.

QAiST

WP 5: New areas for quality assurance systems

- **D5.2: Technical report on the F&YC status and the framework for further technology development**

Task	Detail of upcoming steps
TR 5.2.1: Overview of available F&YC systems (marketed and under development)	Presentation of the document and approval.
TR 5.2.2: Framework and requirements for further development and implementation of F&YC in LSTS	Presentation of the status and discussion on schedule and work sharing until the end of project.

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WP 5: New areas for quality assurance systems

- **D5.3 Technical report on the requirements for durability and performance testing of solar cooling systems**

Taske	Detail of upcoming steps
TR 5.3.1: Collated and updated list of solar cooling installations in participating countries	Presentation of the document and decision on whether it should be passed on SHC Task 48.
TR 5.3.2: Report on durability issues, maintenance and cost	Presentation of the survey outcome.
TR 5.3.3: Review on testing procedures and quality standards	Presentation of the document and approval.
TR 5.3.4: Assessment of the possibility of incorporating solar cooling into EN 12977)	Presentation of the document and approval.

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Work being finalised

WP6&7:
Communication and Dissemination

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WP6&7: Communication and Dissemination

Deliverable	Detail of upcoming steps
T6.1 Distr. dissemination of project results	Info for Nat'l Authorities, focus on CE marking, possibly energy labelling
T6.2 Workshops for industry in connection with ESTIF meetings for discussion and feedback	4 workshops done – 1 more in May 2012
T6.5 SK implementation in CEE NMS	Workshops organised, national reports available, participation at SKN from new partners.
T6.6 Contribution to European Standardisation	Strong participation in TC312, different WGs, contribution for revisions
T6.7 International harmonization	Strong participation at ISO/TC 180 and good results
T6.8 Coordinate with new IEA proposed task	Involvement at IEA SH&C Task 43 and good results

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QAiST
Quality Assurance in Solar Heating and Cooling Technology

Solar Keymark Network meeting

Berlin, Germany
20-21 March 2012

INTELLIGENT ENERGY EUROPE

Annex I:
County Report Albania

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Quality Assurance in Solar Heating and Cooling Technology

Country Report Albania

Solar Keymark Network Meeting, Berlin, 20-21 March 2012

INTELLIGENT ENERGY EUROPE

Summary

- Regulatory Framework
- Public Incentives (subsidies, ordinances or other)
- Testing
- Certification
- Trade Barriers
- Actions needed

Regulatory Framework

- Building Regulation (general)
  - There are no special rules / regulations for solar thermal systems / components in the building regulation. The general regulations for buildings and installations shall be fulfilled. Some examples of these regulations are listed in the following documents:
    - National Strategy of Energy - approved by Albanian Government, June 2003.
    - Energy Building Code - approved by Albanian Government, January 2003.

Regulatory Framework

- Building Regulation (general)
  - Energy Efficiency Law - approved by Albanian Government in April 2005.
  - National Energy Efficiency Action Plan - approved by Albanian Government, September 2011.
  - The new Energy Building Code (not yet approved) will include in the calculation of energy loads also the contribution of the solar thermal systems.

Regulatory Framework

- National Action Plan for RES
  - The National Action Plan for Renewable Energy Sources (NAPRES) is recently prepared, but not yet approved. NAPRES takes into account all sources of renewable energy including specific targets for the solar energy. This plan involves technical and legislative measures for the country until the year 2018 that are in line with the relevant EU directives; the obligations that the country has as a party to the Energy Community Treaty; as well as the objectives of the National Strategy of Energy.

Regulatory Framework

- Registration
  - There are no particular requirements for the registration of a solar thermal system to the local authorities.
- Safety control
  - There is no any particular regulation related to the safety control of a solar thermal collector / system.

Public Incentives

- Relevant incentives:
  - There is no national subsidy scheme for installation of solar thermal collectors and systems (both for individuals and companies).

Testing, Certification and other

- Testing:
  - There is a Solar Test Facility equipped to perform testing of solar collectors according to EN/ISO standards for solar collectors. This facility is installed at the premises of “Harry Fultz” Institute in Tirana, but it is not yet accredited.
  - A first set of trial tests, and the performance tests for 4 different Albanian, Italian and Greek solar thermal collectors, is accomplished by the Solar Test Facility. The performance of these 4 solar thermal collectors is

Testing, Certification and other

- Testing:

  tested according to the EN 12975-2 standard.
  - The results derived by the performed tests at this facility such as: the performance curve, the power curve and the stagnation temperature of the solar collector can be further used for the comparison of different solar collector types that are available in the Albanian market.

Testing, Certification and other

- Certification:
  - Products:
    - There is no national certification scheme for products of solar thermal systems.
    - There is no national energy labelling scheme for hot water tanks.
    - A draft certification scheme for products of solar thermal systems is developed in the frame of the GEF/UNDP Project “Albania - Solar Water Heating Market Transformation and Strengthening Initiative”.

Testing, Certification and other

- Certification:
  - Installers:
    - There is no national certification scheme for installers of solar thermal systems.
    - A draft training and certification scheme for installers of solar thermal systems is developed in the frame of the GEF/UNDP Project “Albania - Solar Water Heating Market Transformation and Strengthening Initiative”.

Testing, Certification and other

- Insurance:
  - There is no particular insurance for solar thermal collectors and systems.
  - Some insurance companies insure solar thermal collectors and systems as part of their insurance of the building.
  - Usually, the installation of solar thermal collectors and / or systems does not change / affect the house insurance practice.

Testing, Certification and other

- Other relevant information:
  - The General Directorate of Standardization has adopted 100% of all the EU/International Standards related to solar thermal collectors and systems. Three of those standards are translated into Albanian for the needs of the manufacturers, installers and other end-users.
  - Both, the reduced VAT and zero import taxes on solar thermal systems and related components are applicable in Albania.

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Testing, Certification and other

- Other relevant information:
  - There is no national trade association of solar thermal manufacturers, dealers, distributors, and installers.

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Trade Barrier

- There are no any special trade barriers in Albania.

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Action Needed

- Regulation:
  - Supportive actions for the actual implementation of the revised Energy Building Code:
    - Training of the inspectors,
    - Elaboration of calculation tools for the energy requirement for space heating and cooling,
    - Training of the building engineers,
    - Etc.

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Action Needed

- Subsidies:
  - Establishment and functioning of subsidy schemes, both for family size and especially for large size solar thermal systems.
  - Stable subsidies and/or other incentives should be given to the proven quality solar thermal collectors.
  - Subsidies should be based on the energy output of the solar systems:
    - Certified test results for factory made systems,
    - Measurements for large custom made systems.

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Action Needed

- Testing:
  - Establish the management of the Solar Test Facility according to the ISO/IEC 17025 standard.
  - Secure additional funds for financing the upgrade of the Solar Test Facility in order to conduct also the performance testing of solar thermal systems according to the ISO 9459-2 standard.
  - Accreditation of the Solar Test Facility.

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Action Needed
• Certification:
– Approve the draft certification scheme for products, which is developed in the frame of the GEF/UNDP Project, as the national scheme for certification of solar collectors and systems.
– Approve the draft training and certification scheme for installers, which is developed in the frame of the GEF/UNDP Project, as the national scheme for certification of installers.
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Action Needed
• Certification:
– Educate the consumers to understand the importance of buying solar collectors with proven quality.
– Introduce the Solar Keymark scheme in Albania.
• Other:
– Creation of the Albanian Solar Thermal Industry Association (ASTIA) as the national trade association of solar thermal manufacturers, dealers, distributors, contractors, installers, architects, researchers, consultants, marketers, and etc.
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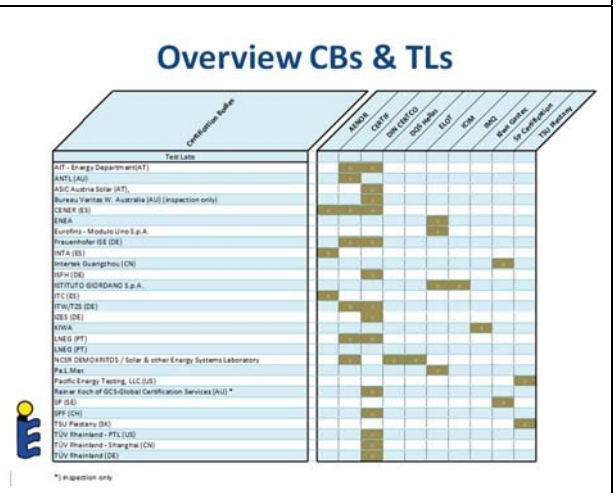
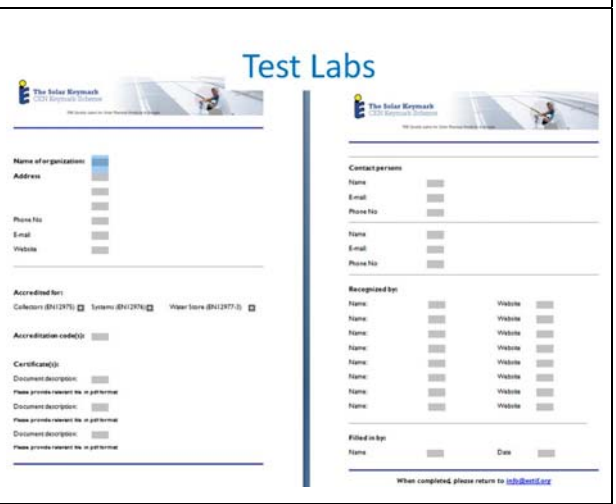
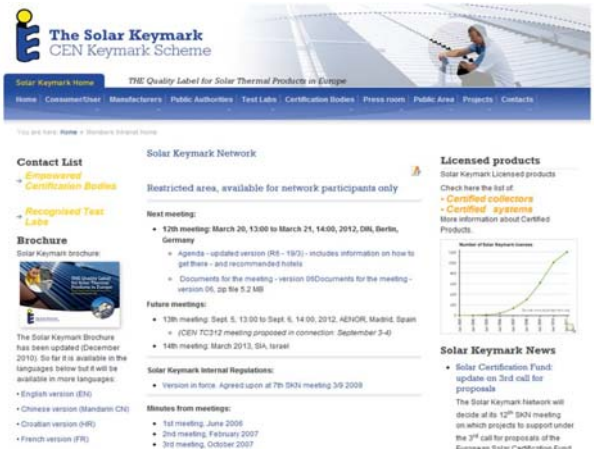
Annex J:
Presentation related new Solar Keymark Website





Intranet

- Restricted area
  - Same use as previous intranet



Discussion Board

- Restricted area
  http://qaist.unidev.eu
  - SKN groups / task-force (ex: SCF)
  - Projects

Discussion Board

Annex K:
Presentation related to latest developments in Italy

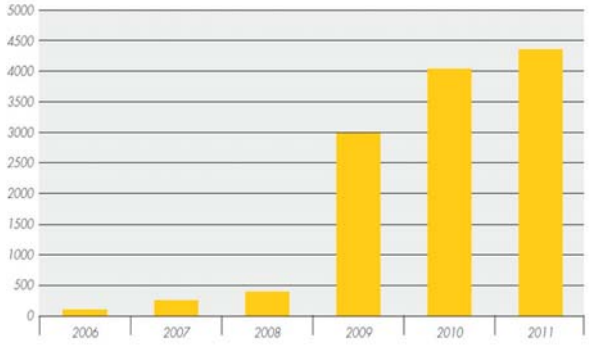
SOLAR THERMAL IN ITALY

Italy, with a total installed solar collector surface area of 2.7 million m², till last year (and with an annual installation of around 500,000 m²), is one of the countries with the highest growth of solar thermal, in Europe.

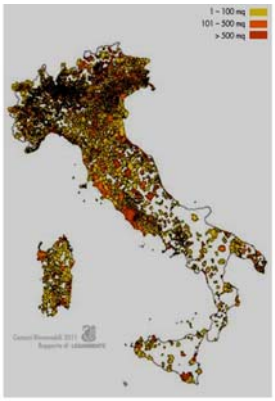
Needless to say that this growth has been possible thanks to assurance of high quality solar thermal products achieved through availability of test standards of high technical quality and reasonable operational complexity.

For the future, in compliance with EU Directive 20/20/20, Italian National Action Plan (NAP) for renewable energy, has set an ambious target for the installation of 26 million square meters of solar thermal systems on the Italian territory, by the year 2020 .

Italy aims to cover up to 17% of its energy needs through the use of renewable sources of energy.



EVOLUTION OF MUNICIPALITIES ADOPTING SOLAR THERMAL, IN ITALY



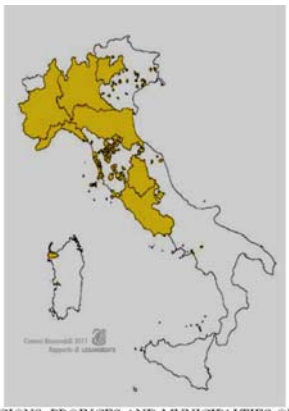
DIFFUSION OF SOLAR THERMAL IN ITALY

FINALLY, IT IS OBLIGATORY TO COVER ENERGY REQUIREMENTS FOR WATER HEATING USING SOLAR THERMAL

Legislative Decree on Renewable, approved on March 3, 2011, by the Council of Ministers and signed by President, defining new rules on the integration of renewable in new and renovated buildings, finally, enters into force definitively, with effect from September 29, 2011.

Article 11, states that in new buildings and existing buildings undergoing major renovation, facilities for thermal energy production should ensure compliance with the coverage defined by law, through the use of energy from renewable sources. The Decree provides 4 time slots, with a gradual increase in the energy requirements with renewable energy sources.

The projects of new buildings and major renovations that increase by at least 30% above the percentage of renewable, are entitled to a bonus volume of 5%, subject to the rules on minimum distances and areas identified as areas A.



REGIONS, PROINCES AND MUNICIPALTIES OF ITALY WHERE SOLAR THERMAL IS OBLIGATORY

INCENTIVES FOR SOLAR THERMAL

Regarding incentives with respect to solar thermal collectors, currently, tax deduction of 55% (valid until 31/12/2012), is possible, in Italy.

However, in the framework of European Directive promotion of energy from renewable sources (2009/28/EC), Italian government based upon the legislative decree No. 28 of March 3, 2011, is currently working on a draft for regulating the financial incentives for solar thermal systems through ***Conto Energia Solare*** (Solar Energy Bill), the one similar to PV systems.

Once finally approved, details will be made available.

This is true that lot of work both on technical and standardization front is in progress but the fact remains that for proper installation of solar systems, even as on today, suitable norms to have skilled, well trained and qualified installers (that will certainly reduce the installation cost), are missing.

Also, technological innovation and adoption of appropriate financial incentives, are another important aspects that needs to be addressed.

In Italy, working group on solar thermal: GL 901 (under co-ordination of Ing. Giacobbe Braccio) c/o Italian Thermotechnic Committee (CTI) constituted by Italian Standardization Organization (UNI), in collaboration with different working groups of CEN/TC 312, is responsible for the development of norms and their subsequent publication by UNI.

Also, the committee, interact directly with researchers from academic institutions, solar test laboratories and industrial representatives, in Italy. Solar thermal related problems are addressed and discussed during the meetings organized by CTI.

The same is responsible for all aspects relevant to Solar Keymark, in Italy.

The CTI, not only focus its attention on the development of draft standards in the field of solar thermal energy and pays attention to the design and installation of solar thermal systems but is equally responsible for the qualification of installation companies.

A brief summary of the main activities are given below:

Review of UNI 9711 "Solar thermal systems using solar energy. Data for the supply, ordering and testing "(withdrawn in 2009), work is already underway and soon should lead to a consolidated document;

The development of a standard for designing a plant or guideline relating to the design criteria of a plant (project to be launched at the end of the revision of the UNI 9711);

International interfacing activities of CEN/TC 312 "Thermal solar systems and components" and ISO/TC 180 "Solar Energy", with the participation of delegates to national meetings of both TC and currently operating several WG;

Update the legislation on air collectors UNI 8937 with the decision to promote the CEN/TC 312 the processing of a technical standard specification based on the same UNI 8937;

Participation in the drafting of parts relevant to solar heating of the UNI/TS11300-4, through collaboration with the Working Group 601 of the CTI;

The working group also monitor the developments of IEE project Qualicert for the qualification/ certification of installers of renewable energy. CTI is planning to develop standard on the subject.

THANKS FOR YOUR
KIND ATTENTION