# Supplier Training Courses

## *Introduction*

It is well known that first barrier to product market penetration is awareness. Awareness about how the product works, what technologies are used, how it must be installed, what must be done to maintain their best performance, what is the economic cost of their usage, how to compare market products to satisfy the same need, and so on.

So, as said in clause 6.7 of ISO/DIS 9004:2008, "The organization's management should establish, implement and maintain processes to manage knowledge, information and technology as essential resources. The processes should address how to identify, obtain, maintain, protect, use and evaluate the need for these resources. The organization's management should share such knowledge, information and technology with its interested parties, as appropriate. …".

One of these processes is that of to share knowledge with all interested parties, throughout the promotion of training courses, with availability on-line of pedagogic materials, for both best product knowledge and good practices dissemination about product installation, usage and maintenance.

The proposed approach is to be adapted for the specific needs of each one of the suppliers, in accordance with the scope of its business core.

## *Approach*

| Approach | **Training courses on best practices** |
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| Elements to be foreseen in the STO | 1. solar radiation and their use (solar radiation and their variation (astronomical and meteorological bases), influence of orientation and tilt angle of the solar collector, influence of dust cleaning, advantages of solar systems versus climate change),<br>2. components of solar thermal systems<br>a. how a solar system works,<br>b. type of collectors, collector accessories, solar collectors characteristics (stagnation temperature, optical performance, thermal performance, collector characteristic curves),<br>c. heat stores (storage materials, heat stores stratification, thermostatic mixing valves, types of heat stores, piping connection, legionella contamination),<br>d. solar circuit (pipelines, solar liquid, solar pumps, solar heat exchanger, flowmeters, safety devices, rapid air bleeders, return-flow prevention), systems for heating domestic water, systems for heating domestic water and space heating,<br>e. controllers (temperature difference control principles, digital controllers, temperature sensors, overheating protection), systems for single-family houses (comparative analysis of systems, auxiliary heating systems), |

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| | 3. systems for single-family houses<br>a. systems for heating domestic water,<br>b. systems for heating domestic water and space heating,<br>c. planning and dimensioning,<br>d. materials selection,<br>e. costs and yields (prices versus performance, normalised solar heat costs),<br>4. installation, commissioning, maintenance and servicing<br>a. overview of building façade and components, and their materials,<br>b. installation methods and safety,<br>c. solar system components installation,<br>d. setting up, maintenance and servicing,<br>5. large-scale systems<br>a. designing the solar system composition (solar collectors, stores, heat exchangers, piping, etc.) and size,<br>b. auxiliary systems,<br>c. control of the systems,<br>d. techno-economic analysis,<br>e. solar district heating,<br>f. solar contracting,<br>6. solar heating of open-air swimming pools<br>a. components,<br>b. system,<br>c. planning and dimensioning,<br>d. installation,<br>e. operation and maintenance,<br>f. costs and yields<br>7. simulation programs for solar thermal systems<br>a. data sheets preparation,<br>b. evaluation of simulation results,<br>c. simulation with shading,<br>d. description of a simulation program,<br>8. marketing and promotion<br>a. solar marketing,<br>b. comparative techno-economical analysis of products,<br>c. European directives and white papers<br>9. Quality qualification<br>a. thermal solar systems and components standards,<br>b. certification schemes,<br>c. testing of installation techniques,<br>d. certification preparation. |
| Exceptions | Suppliers without direct influence on the durability and performance of solar thermal systems. |
| Examples of STOs, which used this approach | A lot of STOs imposes quality requirements, such as product certification. So, a supplier with an ISO 9001 certificate shall give product information (ISO 9001:2008, clause 7.2.3, c)). |

| Analysis | |
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| **S**trengths | quality is a key factor to flank barriers |
| **W**eaknesses | unknown |
| **O**pportunities | to get new satisfied customers |
| **T**hreats | unknown |
| | |
| Else | |

## *Conclusions and Recommendations*

Training courses for customers, dealers, installers, designers and planners are a way of good application of the quality principles of customers focus and involvement of people (see ISO 10014:2006).
So, it is strongly suggested that suppliers use training courses for focus group (ISO 10014:2006, clause 5.3, Do), as a way of dissemination and market penetration of their products.

## *References*


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| /1/ | Planning and Installing Solar Thermal Systems: A guide for installers, architects and engineers, German Solar Energy Society, 2005, James & James. |
| /2/ | Solar Thermal Systems – Successful Planning and Construction, Felix Peuser, Karl-Heinz Remmers and Martin Schnauss, Solarpraxis 2002, James & James |
| /3/ | Webpages of both Education and Commercial Systems of the SRCC Website, http://www.solar-rating.org/. |


## *Imprint*


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| Edited by: | INETI (http://www.ineti.pt/) |
| With contributions from: | |
| Date, Place | Lisbon, January 8th, 2009 |

See www.solarordinances.eu for more information on solar thermal ordinances and the ProSTO project.

The ProSTO project is supported by:

Intelligent Energy Europe