

**Towards a European qualification for service and maintenance in the solar energy-sector (SolTec), 503219-Leonardo-2009-LLP -2009-2181**

**Summary report Germany**

**1. Structure of the interviewed companies**

*Mention the structure of the companies/organizations you interviewed in terms of staff number and structure by skill groups.*

So far, the German partners could undertake four interviews in the following areas:

- one installation company
- one investor company
- one training institute
- one trade union

Apart from that, bwf is currently still in the stage to prepare an interview with one of the largest PV-producer in Germany.

The structure of the interviewed companies is as follows:

		Installation company	Investor company	Training institute	Trade union
Staff number, ....from that	In total	62	32	2100	550
- Unskilled workers	In %	5	5	-	-
- Workers qualified at the job place	In %	5	-	-	-
- Skilled workers, technicians	In %	60	20	55	30
- Administration	In %	28,5	15	20	20
- Academics	In %	1,5	60	25	50

**2. Staff trained in photovoltaic**

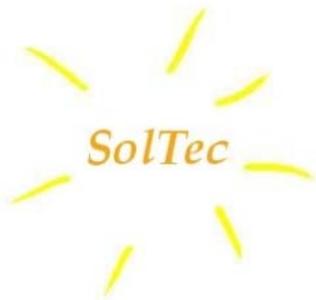
*Mention how many trained staff in photovoltaic the organizations/companies had and what kind of qualifications the trained staff had.*

Installation Company: 45 persons; the persons have a professional degree in a technical field (dual system), and some of them have passed a further technical educational degree (below university level) for responsibilities in the middle management ("Meister/ Techniker").

Investor Company: 12 persons. These people have degrees in the business and economic field (professional degree in the banking sector (non-university level), diploma in business (university-level) or in the communication and marketing field. These people need additional knowledge around the "product" PV.



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Training institution: the training institution has all together 25 branch offices. 7 of them have special activities in the renewable energy sector (2 in the wind-energy-sector, 5 with the focus on solar-energy). In the 5 branch offices with the solar-energy-focus 10 persons have special knowledge in PV-installations.

Apart from their professional degree in a technical field (dual system), they have either passed a further technical degree ("Meister" or "Techniker") or they have in addition a university degree (as an engineer).

Trade union: There is no specific PV-staff or persons with specific PV-knowledge needed in the trade union.

### **3. Demand for specialists in photovoltaic**

*Mention if in the interviewed organizations/companies there was a higher demand for specialists in photovoltaic.*

So far, only the installation company mentions from time to time further need for PV-specialists.

### **4. Number of photovoltaic technicians that work in installation / maintenance**

*Mention how many employees with specific expertise in photovoltaic worked in the field of installation / maintenance.*

In the installation company almost half of the staff (30 persons) works in the field of installation/maintenance. The training institution needs all together about 10 educators/ trainers who have special knowledge in installation and maintenance techniques. Depending of the main fields and objectives of the other two interviewed organizations, they employ some persons with general knowledge about e. g. the use of PV, the financial regulations, the vocational and qualification needs of specialists, etc. but they do not employ specific technicians of PV-installations.

### **5. Means of gaining expertise of photovoltaic professionals.**

*Mention how the PV-professionals got their expertise: study, further training, internal employee training, seminars, on the job...*

The installation company mentioned that their professionals – apart from their professional degree – got their expertise through training-on-the-job.

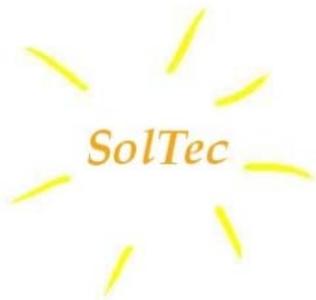
The investor company explained that their staff gained their expertise through the participation in seminars, fairs/ exhibitions, congresses and in-house-trainings.

The educators/ trainers of the training institution gained their expertise through study, further training and their daily experiences.

The trade union doesn't employ special experts.



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**6. Expected employment growth until 2013**

According to the interview results, mention how many employees with PV-expertise did the companies/organizations expect to have in 2013.

The installation company expects to have until 2013 all together 80 persons with specific PV-knowledge. The investment company expects up to that time 13 persons, the training institution thinks to have 3 further educators/ trainers. The trade union doesn't expect to employ specialists.

**7. Recruitment requirements and further training of employees**

Mention the requirements of the companies/organization when hiring photovoltaic staff, as well as if their staff takes part in training courses or seminars to upgrade their knowledge.

Requirements when hiring photovoltaic staff:

	Installation company	Investments company	Training institution	Trade union
Vocational training	yes	no	yes	not applicable
Further training	yes	yes	yes	n.a.
In-job training (work experience)	not necessarily	no	yes	n.a.
Training courses	no	yes	no	n.a.
Other (please specify)	-	-	pedagogic competences	n.a.

All interviewed organizations mentioned that their staffs take part in seminars or training courses to upgrade their knowledge in the field of PV and renewable energies.

**8. Vocational training curriculum in the photovoltaic field**

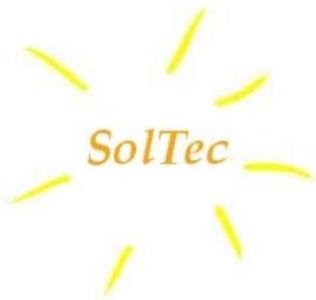
According to the interview results, what subjects did the interviewees considered absolutely necessary to be in the vocational training curriculum in the photovoltaic field and other subjects they think should be included (and are not included now).

Installation Company:

planning an adequate performance of the converter (WR), electric connection of the PV-system to the grid, different possibilities of mounting on the roof or on the ground, knowledge about the selection of appropriate PV-modules, protection against lightning, basic knowledge about structural analysis, regulations and requirements for the grid connection, maintenance  
 Further topics: safety and health in the workplace, to take the problem "asbestos" into account



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Investment Company:

In-house-training (Financial regulation, concrete product courses, training in the field of the political and legislative context, changes in the EEG (renewable energy act, feed-in tariff))

Training institution and trade union: they agreed with the draft of the competence profile

**9. Basic qualifications, key competences and professional knowledge of professionals working in service and maintenance in the photovoltaic field**

*According to the answers of the interviewees, what qualifications they considered necessary for professionals working in service and maintenance in the photovoltaic field. For each qualification include the key competences and professional knowledge necessary mentioned by the interviewees.*

Installation Company:

Basic qualification: professional degree as an electrician or roofer

Professional knowledge: consider different possibilities of roof mounting, professional installation of the frame of the module, connecting PV-system to the grid, connection of the modules to the converter (WR)

Investment Company:

Not applicable, as they don't employ own staff in installation and maintenance.

Training institution and trade union: they mentioned that it is necessary to have a broad range of competences and they both agreed that the developed competence profile covers all the necessary fields and topics (see attached competence profile).