

potentially serve as a guide for other countries as well as communities program development.

### Activity 3.2 Codes and Standards

Existing codes and standards applicable to urban scale PV and the needs for developing new codes and standards will be evaluated. Both electrical and structural codes will be evaluated as related to buildings. Network codes and standards will be evaluated in a separate activity. This work will build upon work initiated in Tasks 5 & 7. Denmark is the lead for this activity.

Progress on this activity includes an information matrix for investors or installers of PV systems which points to legal demands, guidelines and good advice for PV system components, issues and systems as part of buildings. Task 10 participants have not provided input to this matrix as of yet, but will be encouraged to do so in 2007 so that it can be included in the educational tool (Activity 4.1).

### Activity 3.3 Electricity Networks

This activity will analyse electricity network effects, benefits, impacts, and issues. Interconnection, operational effects, and market issues will be included. Japan leads this Activity

Progress on this important urban scale activity includes full coordination with the PV-UP-Scale work. The proposed scope of work from Japan includes:

- 1 Impacts & Effects of PV Interconnection
- 2 Guidelines & Network Operation Policies
- 3 Countermeasures & Technologies
- 4 Case Study Approach
- 5 Project Checklist

In developing this proposal Japan has started the development of graphics to explain network issues. Germany is the PV-UP-Scale lead for the corresponding work package.

### Activity 3.5 Certification Practices

Certification practices will be reviewed and standard test procedures harmonized and transferred to the relevant stakeholders and standard committees. The US leads this activity:

Progress includes a set of documents developed by the US installer certification program in accordance with ISO/IEC 17024 Working Draft, "General Requirements for Bodies Operating Certification Systems of Persons". These documents will be reviewed by Task 10 participants to be made into templates for countries to use.

### SUBTASK 4: Targeted Information Development and Dissemination

This subtask will carry out the information dissemination of all deliverables produced in Task 10. As activities develop in other subtasks, subtask 4 will review to assure the results are useful to the targeted stakeholders. Participating countries will be encouraged to translate documents and workshop materials. This task will also

**TABLE 1 - LIST OF PARTICIPANTS AND THEIR ORGANISATIONS**

COUNTRY	PARTICIPANT	ORGANISATION
Australia	Mr. Mark Snow	University of New South Wales
Austria	Mr. Reinhard Haas Mrs. Assun Lopez-Polo Mrs. Demet Suna	Institute of Power Systems and Energy Economics Energy Economics Group Vienna University of Technology
Canada	Mr. David Elzinga	NRCan/Climate Change Technology Early Action Measures/Ontario
Denmark	Mr. Kenn Frederiksen	Energimidt Erhverv A/S
France	Mr. Marc Jedliczka Mr. Bruno Gaiddon	HESPUL
Italy	Arch. Niccolo' Aste Mr. Michele Pellegrino Mr. Carlo Zuccaro	Politecnico di Milano CER ENEA CEPI SpA
Japan	Mr. Keiichi Komoto Mr. Tomoki Ehara	Environment, Natural Resources and Energy Mizuho Information & Research Institute Inc.
Korea	Mr. Kyung Shick Yoom	Korea Photovoltaics Development Organization Korea University
Malaysia	Mr. Ahmad Hadri Harris	Malaysia Energy Center, PTM
European Union	Mr. Henk Kaan	Energy research Centre of the Netherlands Through EU, PV-UP-SCALE
Norway	Mrs Inger Andresen Mrs. K�the Hermstad Mrs. Anne Grete Hestnes	SINTEF Civil and Environmental Engineering
Portugal	Mrs. Maria Jo�o Rodrigues Mrs. Joana Fernandes	Center for Innovation Technology and Policy Research Instituto Superior T�cnico (Technical University of Lisbon)
Sweden	Mr. Mats Andersson	Energibanken AB
Switzerland	Mr. Pierre Renaud	Planair SA
USA	Ms. Christy Herig	Segue Energy Consulting/Subcontractor to National Renewable Energy Laboratory



Fig. 4 - 7<sup>th</sup> Task 10 Technical Experts and PV-UP-Scale, Malmö, Sweden.

organise countries to host technical development and education workshops. The subtask will also prepare mass/multi-market promotional material about urban-scale PV and will update existing PV education tools. An innovative deliverable will involve holding a competition for urban-scale PV with the winner of the competition announced at a forum on PV for the venture capital sector. Market research for the purpose of understanding and targeting stakeholder perceptions will also be part of this subtask. Finally, this task will be responsible for continuous outreach to stakeholders for input and participation in the task.

France is the Subtask leader, and is also the Work Package leader for the corresponding Work Package in the PV- Upscale project, thus guaranteeing a broad dissemination.

#### Activity 4.1 Educational Tools

This activity includes a best practices web site which will include templates for tender documents, sales contracts, consumer guides, as well as best practices, detailed real project development information. Sweden leads this activity.

Progress includes an on-line educational tool which details projects from the idea phase to the commissioning phase (see Figure 2, [www.bipvttool.com](http://www.bipvttool.com)). The tool has defaults of general information if the information was not available in the case study. This design allows it to be a way to put Task 10 graphics and information on line in a user friendly format (instead of only long reports). PV-UP-Scale has made contributions to the tool. This website will serve as the one of the main dissemination tools for all Task 10 deliverables and is also used to provide specific performance indicators for detailed projects for Task 2.

#### Activity 4.2 Competition

Progress – The first Lisbon Ideas Challenge was awarded in November of 2007. The winner, LIC Winner: Power Fold, from the Portuguese team of architects from Atelier Data, for the Best Business Idea! See Figure 3. The PowerFold is a modular, folded devise that can take many shapes and therefore serve multiple purposes in the urban environment.

Industry was pleased with the results of the contest and has funded a second Lisbon Ideas Challenge - [www.lisbonideaschallenge.com.pt](http://www.lisbonideaschallenge.com.pt). Three monetary prizes of 5.000,00 each shall be awarded to the entries that present the Best Technological Integration Projects in each of the described categories, in straight coordination with the Technological Integration Plan.

- 1 Commercial Building
- 2 Public space, with the inclusion of urban art
- 3 Social Housing

#### Activity 4.4 Stakeholder Perceptions

This activity will analyse and assess the community, utility and customer perception and preferences regarding i) the security of energy, (including revenue protection) ii) certain and homogenous Quality and Safety levels. Additionally this activity will develop products in response to misconceptions such as energy required in manufacturing (Life Cycle Analysis). Denmark leads this activity

Progress includes the report IEA-PVPS T10-01-2006 "Compared assessment of selected environmental indicators of photovoltaic electricity in OECD cities", developed by France. The executive summary of this report as well as the country results were published by EPIA and are available on the European Photovoltaic Technology Platform website. This report was developed in response to the misconception of the energy required for PV manufacturing being more than ever produced in the operation of the system. The report did not perform lifecycle analysis, but rather took the most recent results, combined with solar energy availability to determine energy and environmental factors. Additionally, Denmark has developed a draft report on revenue protection which identifies ways to maximise the revenue from a PV plant regardless of size.

#### Activity 4.5 Continuous Communication

France leads this activity

With France leading this activity under this subtask, as well as the similar work in PV-UP-Scale, the Task will continue to progress. A stakeholder meeting was held in Malmo Sweden. Whereas most

publications will be electronic, EPIA agreed to print the executive summary of the environmental indicators report. And the website and resources for Task 10 remain up to date.

### INDUSTRY INVOLVEMENT

As Task 10 moves into its fourth year, industry participation appears minimal relative to the technical experts participating in the Task (except utilities). However, in individual countries and throughout Europe, it is evident that industry is giving feedback to Task 10. The Activity under Subtask 1 titled Market Roadmap was merged with the activity Market drivers because industry (EPIA and SEIA) felt that presenting the information as market drivers rather than a roadmap was more appropriate for Task 10. Industry has already provided input to the products database. And a second Lisbon Ideas Challenge will be supported by industry.

### KEY DELIVERABLES (2006 AND PLANNED 2007)

The following key deliverables were prepared and presented in 2006:

- Swedish stakeholder meeting, September 13, Malmo, Sweden  
Report "Compared assessment of selected environmental indicators of photovoltaic electricity in OECD cities;" as well as the executive summary in print.
- A completed Lisbon Ideas Challenge Award Ceremony, Lisbon, November 2006 with a second challenge initiated.
- On line educational tool, [www.BIPVtool.com](http://www.BIPVtool.com)
- On line products, projects, and solar communities database [www.pvdatabase.com](http://www.pvdatabase.com)

The following key deliverables are planned for 2007:

- Report "Urban BIPV in the Residential Building Industry"
- Report "Solar Cities Around the World"
- Report "Value Analysis of PV"

**TABLE 2 – MEETING SCHEDULE  
(2006 AND 2007 PLANNED)**

MEETING	DATE	PLACE
6th Task 10, combined with Tasks 1, 2 & 9	March 27-28, 2006	Vancouver, BC, Canada
7th Task 10 Technical Experts	Sept 11-13, 2006	Malmö, Sweden
8th Task 10 Technical Experts and PV-UP-Scale	March 12-13, 2007	Freiburg, Germany
9th Task 10 Technical Experts with _ day Joint Meeting with Task 11	November 30 - December 1 2007	Fukuoka, Japan