

Conclusions

- 13 Case Studies were selected as representing the most promising potential applications of PV in buildings in Tuscany Region of Italy, they included refurbishment of 1960's school buildings, retrofit office and school building and a prestige public building (e.g. Municipal building);
- None of the applications are cost-effective at the present time : PV systems which are used to replace prestige cladding material will be cost-effective by 2005 under all scenarios; the remaining applications will be economically viable in 2010 under a Deep Green scenario, with the exception of the flat roof mounted systems which have no off-set costs and are not cost effective under any scenario in 2010;

For the exception to those which are going to be financed by the energy programme by the Italian Government

- The Deep Green scenario assumes a supportive policy framework for PV : By 2010, PV system costs fall by 50%, while efficiency (output per unit area) improves by 50%, as a result of a strong R&D programme and support for demonstration projects. In addition, the introduction of carbon and pollution taxes favours the uptake of renewable energy sources;
- Under the current system, embedded generation and demand side management are considered to offer no economic benefits to the PV generator: These conclusions were made in the light of discussions with the partners, an earlier IT Power study on embedded generation, and detailed tariff analysis;
- Building developers, owner/occupiers, building professionals and the utilities are the principal market actors most likely to invest in the building-integrated PV systems identified in the study: these groups should be made more aware of the opportunities of PV through targeted dissemination actions.

Recommendations

- It is recommended that emphasis is be given to setting up and monitoring long-term demonstration projects within in Italy: Much greater interest is likely to be generated among the key market actors if they have detailed information on existing projects, and can visit the sites.
- Well targeted information dissemination actions are recommended in the short term these are expected to motivate interest and investment from the market leaders within the main market groups. The groups are the most likely to be interested in the building types selected for the Case Studies. A much wider range of actors should be targeted if considering all potential PV applications;
- **In the short term these actors are unlikely to receive direct commercial benefits from investment in building-integrated PV power systems:** PV systems which are used to replace prestige cladding material will be cost-effective by 2005. The remaining applications will only become economically viable in 2010 or beyond;
- **The principal market drivers for investment in PV are therefore professional**

interest in pioneering new technology and new building designs; environmental concerns; and the indirect economic benefits of portraying a green image: in the case of offices, developers have been shown to be able to attain higher rents for office space in solar buildings;

• **An effective dissemination strategy will help realise the market potential identified:**

it should be noted that the estimated market potential under the Green scenarios is unlikely to be realised without more significant policy support in terms of environmental taxation, and a more comprehensive technology development and demonstration programme;

• **Detailed information on costs and environmental benefits of different PV building applications would generate greater interest from all actor groups** : where possible these should relate to existing PV projects, and there is a real need for setting-up a larger number of long-term demonstration projects.

• **Potential investors would benefit from study tours:** the ability to visit existing projects both in Italy and in Europe will ensure greater confidence in the technology and interest in the possible designs.

• **Building professionals would benefit from more detailed information on building products available, technical guidelines, and design competitions leading to real PV building projects:** several of these dissemination activities are already on-going and should be further encouraged and supported.