



# PV SUNRISE

## Barriers for the PV Diffusion in the Building Sector

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# PV SUNRISE

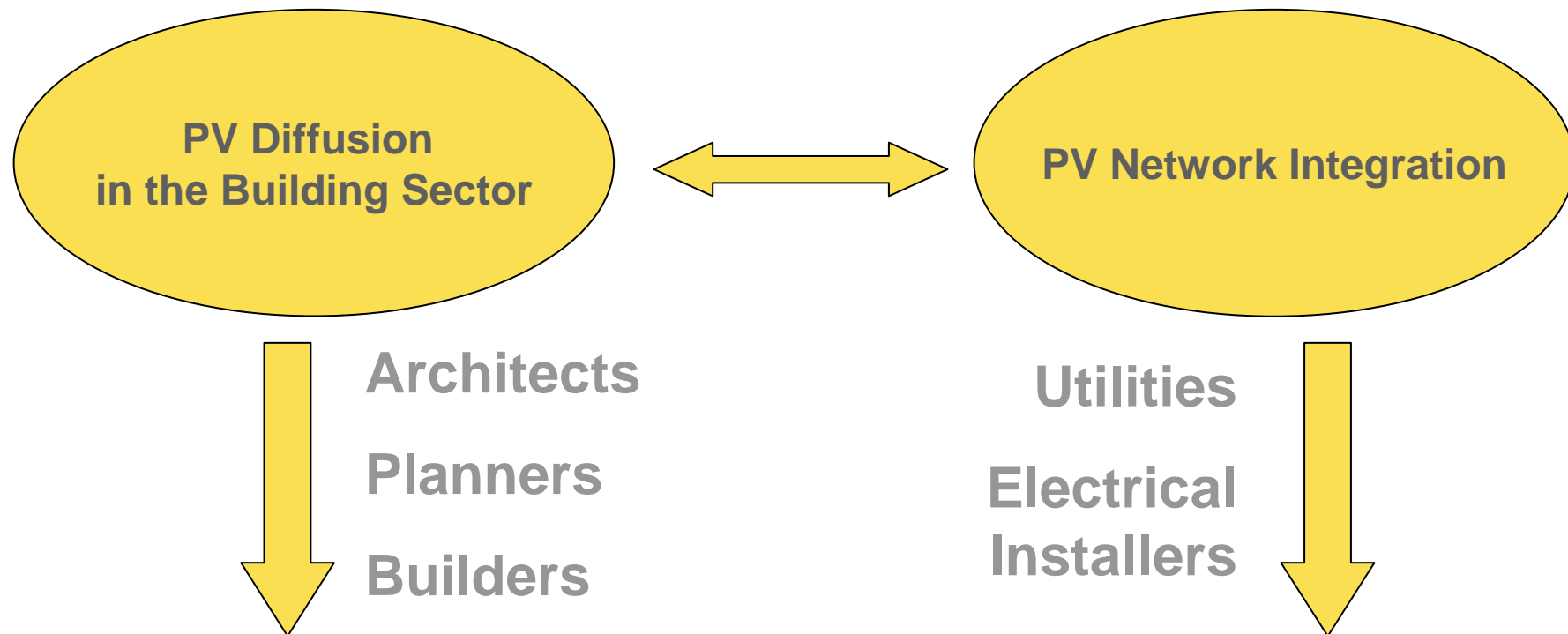
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## *Strengthening the European Photovoltaic Sector by Cooperation with important Stakeholders*

- Co-financed by the European Commission:  
6<sup>th</sup> Framework Programme for the Research and  
Technological Development (DG TREN)
- Length: 30 months (May 2007 – November 2009)

# Sunrise project: Objective



*Reducing cost to become competitive with conventional energy production in the future liberalized energy market*

# Sunrise project: Partners

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- European PV Industry Association (EPIA)
- WIP - Renewable Energies
- European Construction Industry Federation (FIEC)
- European Association of Electrical Installers (AIE)
- International Union of Architects (UIA)
- Electricité de France (EDF)- subcontracted

# Identification of barriers

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- Bottlenecks for the diffusion of PV components in the construction sector:
  - Legal & Administrative barriers
  - Market barriers
  - Technical barriers
  - Perception barriers

# Identification of barriers

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- Legal & Administrative Barriers
  - BIPV is not allowed on listed buildings
  - BIPV is not sufficiently defined as an energy-efficient technology
  - BIPV is still subject to complex planning procedures in some member states of the EU.
  - Difficulties in the access to the electricity grid

# Identification of barriers

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- Market barriers
  - Innovations in the Building sector are often independent and local
  - Solar module prices are indicated in €/Wp, for architects €/m<sup>2</sup> is more useful
  - Added value of BIPV as a multi-functional building component is not known
  - BIPV is still too expensive

# Identification of barriers

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- Technical barriers
  - Missing link between engineers and architects/ technical requirements
  - Standards for PV are still lacking
  - Producers develop their own standard modules in terms of dimensions
  - In some instances BIPV (the units are quite heavy) can cause structural overload of existing buildings

# Identification of barriers

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## □ Perception barriers

- Advantages of PV are not clear for architects and clients
- Outdated perception of the PV technology
- BIPV is not attractive/aesthetical (for some architects )
- Knowledge of planners, developers and architects about BIPV is limited
- Change of behaviour and procurement criteria is needed from public authorities
- Acceptance by architects, contractors, building developers and end-users of the need to integrate from the project inception through the whole construction process
- Lack of awareness of the increasing role of electricity consumption in the value determination of a building

# Overcoming the Barriers

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- **Sunrise project:**
  - Removal of Perception and Market barriers
- **EPIA and national associations:**
  - Removal of legal Barriers
- **Industry + EU projects (e g IP Performance):**
  - technical barriers

# Overcoming Market & Perception barriers

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## BIPV as multi-functional building component:

- electricity generation
- shading systems
- weather protection
- noise protection
- heat insulation
- sunlight modification

# Overcoming Market & Perception barriers



## BIPV as multi-functional building component



Pitched roofs

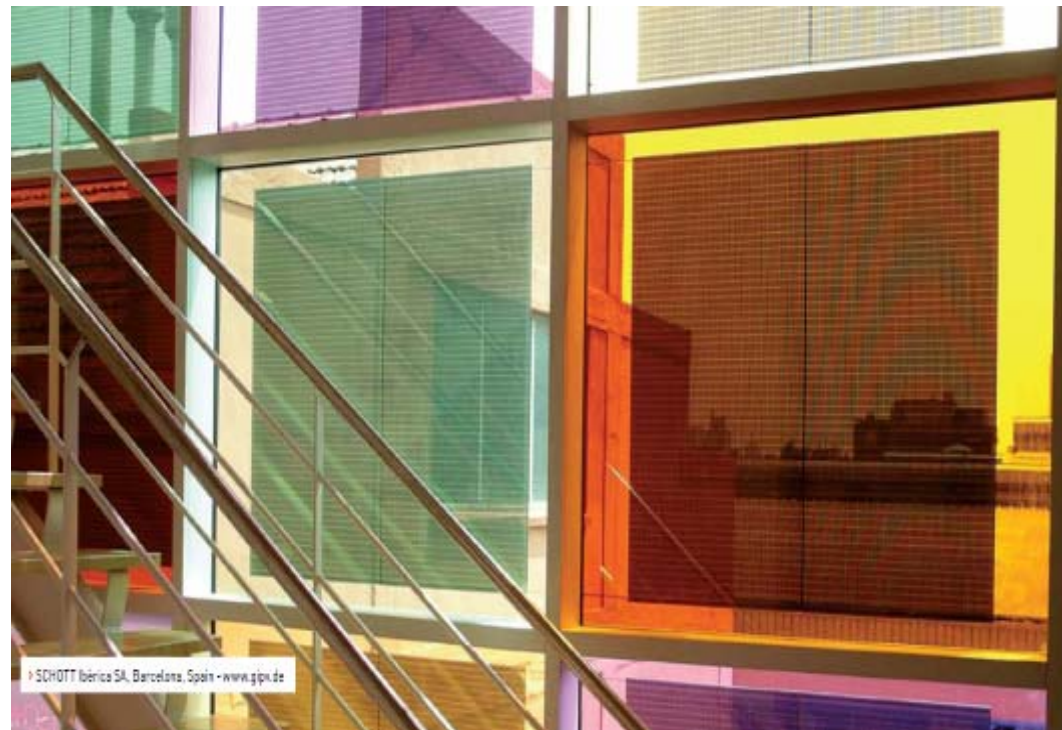


External Building Walls

# Overcoming Market & Perception barriers



## BIPV as multi-functional building component



## Semi-Transparent Facades

International Workshop on BIPV, Nice, 30th October 2008

# Overcoming Market & Perception barriers



## BIPV as multi-functional building component

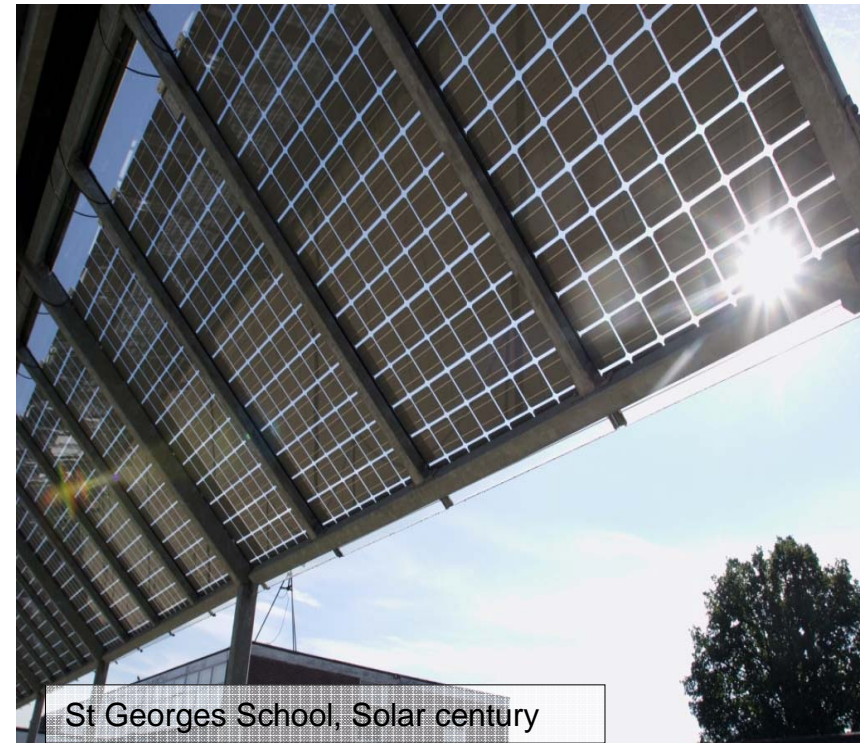


## Skylights

# Overcoming Market & Perception barriers



## BIPV as multi-functional building component



## Shading Systems

# Overcoming Market & Perception barriers

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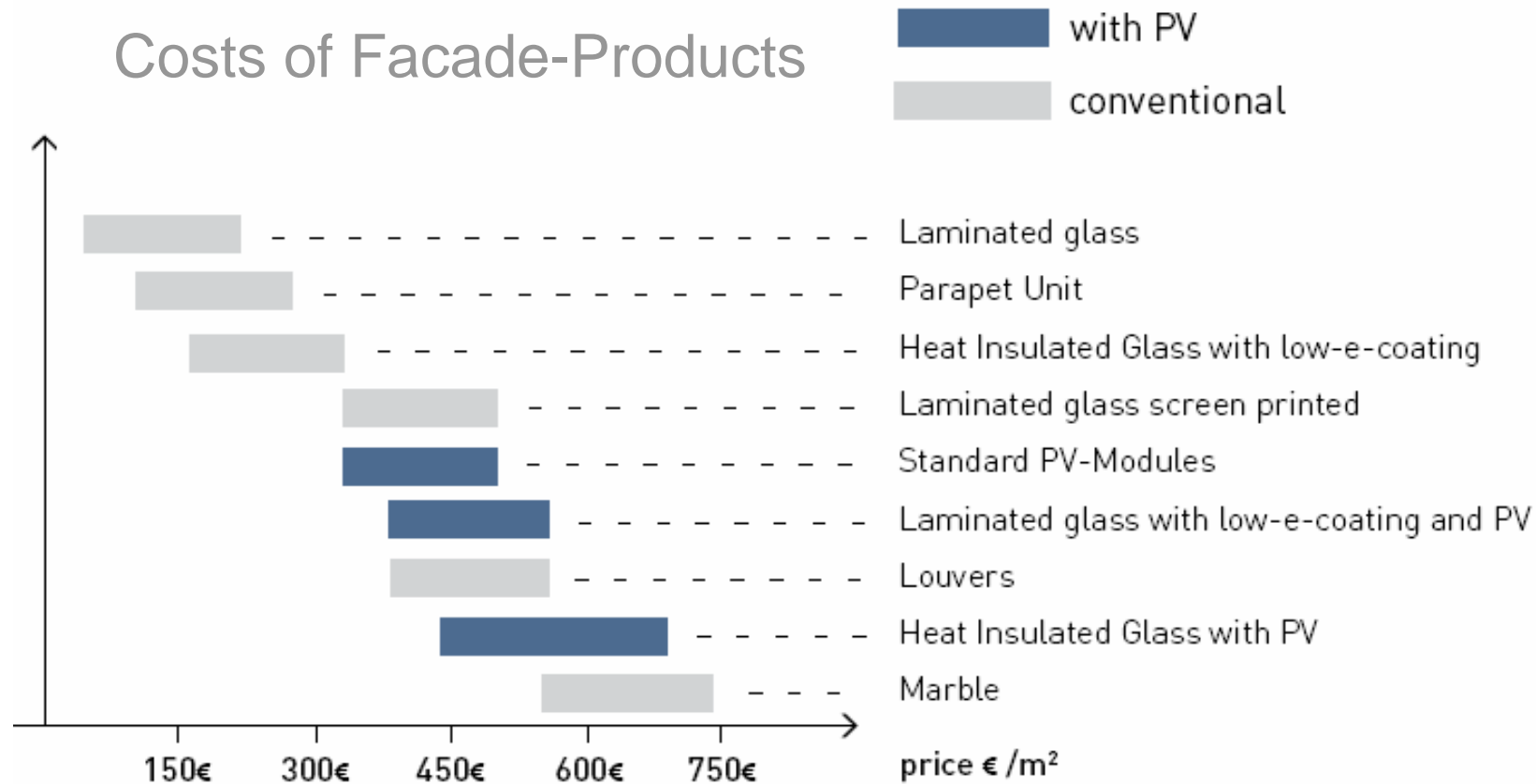
## BIPV as multi-functional building component

Some successful stories:

- FIEC Congress, Dublin, June 2008, 400 Constructors
- 23rd UIA - World Congress of Architects, Turin, July 2008, 10000 Architects



# Overcoming Market & Perception barriers



**Return of the investment of PV modules!**

Source: Architekturbüro Hagemann

# Overcoming Administrative Barriers

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- **“BIPV is not sufficiently defined as an energy-efficient technology”**
  - EPIA is working on the review of EPBD “Energy Performance of buildings Directive ”
  
- **“BIPV is still subject to complex planning procedures”**
  - EPIA is working on the RES directive

# Overcoming technical barriers

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- Sunrise provide the platform for discussion (PV industry, Architects, Builders, installers and utilities)
- Dissemination of Results (e.g. IP Performance for standardization)

# Conclusions

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**Many barriers are easily removable:**

- ❑ **Awareness & Communication**
- ❑ **The cost is not the problem**
- ❑ **Different approach for collaboration**
- ❑ **Common Standards and Regulations are essential for a wide deployment of BIPV**



**Thanks for your attention!**

**[www.pvsunrise.eu](http://www.pvsunrise.eu)**