



**Solar shading systems and innovation:  
Considerations by ES-SO**  
(European Solar-Shading Organization)

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# ES-SO in short

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- Members are trade associations or representative industrial companies
- Founded in 2004, now 15 European countries in ES-SO
- Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Poland, Spain, Sweden, Switzerland, UK
- Main objective: inform European authorities of the merits of solar shading as an energy-efficient building technology

## Subject of WP6

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Making sure the EPBD is a **support** for market uptake for innovative systems. Raising **awareness** for the problems to assess innovative systems and suggest **solutions** based on experiences

# Declaration of ES-SO

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Solar shading plays a major role in the search for good **summer comfort** and can make a considerable contribution to **energy saving** in buildings.

This is not (sufficiently) assessed in most national EPBD regulations. Solar shading is the dynamic insulation of the window.



# Contribution of solar shading to summer comfort

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**Avoid overheating**

**Filter excessive light**

**Use more natural daylight**

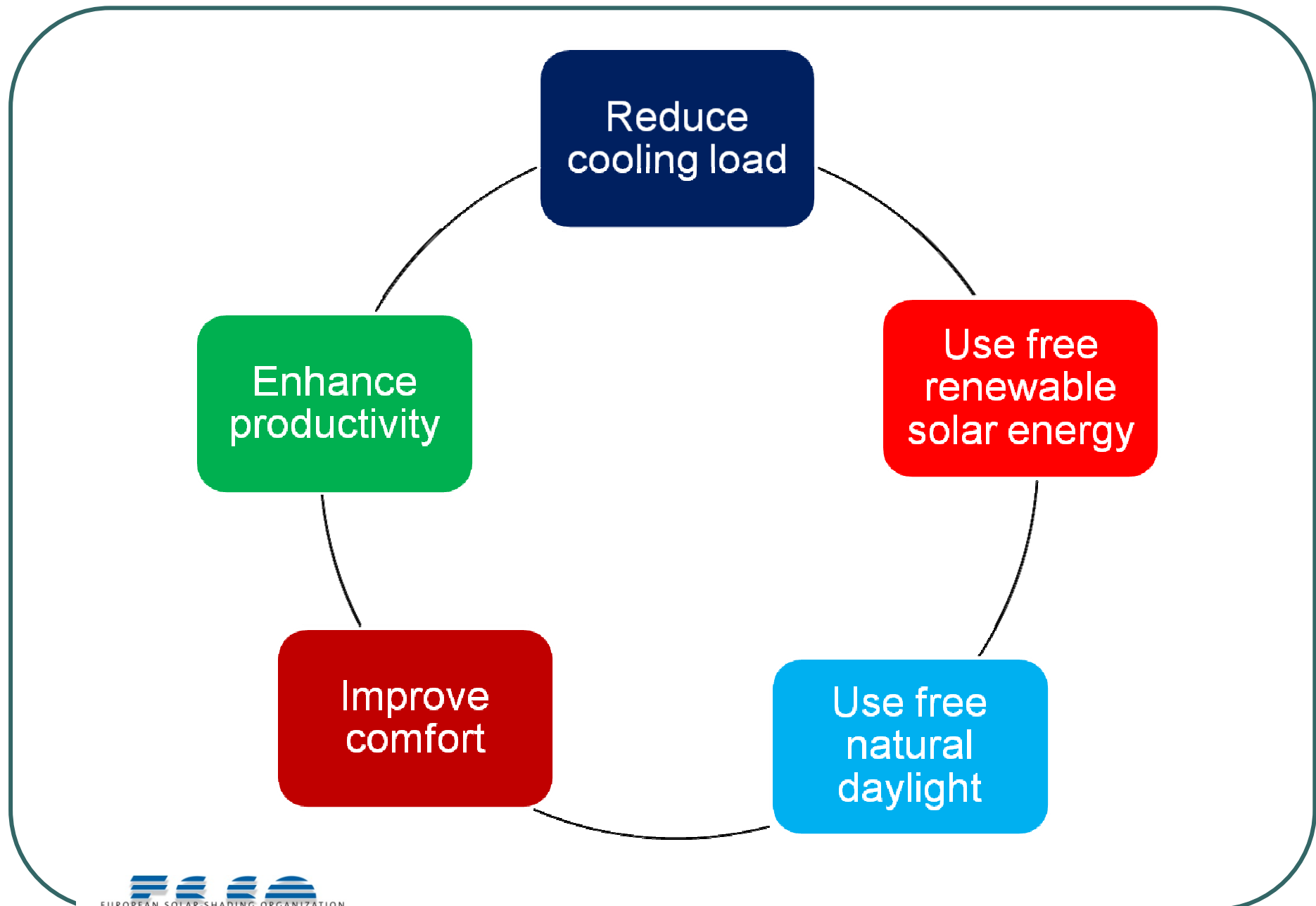
# Contribution of solar shading to energy debate

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Reduce cooling load and peak power problems

Reduce heating needs

Reduce electricity for lighting



# Potential problems (1)

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- No penalty in regulation for summer comfort overheating
  - Solar shading will have no benefit in EPBD context
  - Principle of equivalence can probably not solve this problem
- Only default values for handling solar shading
  - No driver for optimal products, unless principle of equivalence

## Potential problems (2)

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- Certain types of solar shading not considered
  - Those systems will have no benefit, unless principle of equivalence
- Single zone modelling underestimates problems of overheating
  - This will not promote solar shading
- No attention for certain benefits
  - Visual comfort, glare
  - Reduction of peak power in summer

# Barriers to proper recognition

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- Lack of standardized data on solar shading products
- Absence of agreement on basic operating parameters
- Most NEEAP based on earlier standards, not on most recent CEN standards
- Contribution of automation crucial but mostly not yet taken into account
- Some products defy standard measuring methods
- Difficulty of matching calculations with measurements
- Attention to natural daylight still weak

# Progress made by industry

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- Reliable building simulation methods available
- Daylight-optimizing products on the market
- Wide choice of products placed parallel to glass
- Calculation for double skin applications in some countries (France . . . )
  - **Often not covered in national calculation procedures. This can be an area for the principle of equivalence**
- Increased availability of standardized product data
- Deep research into daylight saving now available
  - **Daylighting often not covered in national calculation methods**

# Where EPBD-rules do consider solar shading

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- In France: when renovating, shading is required for air conditioning permit
- In Netherlands: shading part of 'package of e-e measures'
- In Belgium: new external shading in residences subject of premium; default value in calculation
- In Austria for summer comfort
- In Italy ('dynamic shading')

# How legislation stimulates – or not – innovative developments

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- France requires external shading with g-value  $< 0,15$  recognizing that this is state-of-the-art for industry
- Belgium assumes default value of  $g=0,5$ 
  - **Better values can be used if detailed calculations are made, such procedure is available**
- Most countries have not considered shading, by lack of proper information and reliable data
  - **Can this fall under principle of equivalence?**
- Fall-out shading products are not covered by calculation methods
  - **This is clearly an area where the principle of equivalence is necessary**

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Thank you for your attention  
visit [www.es-so.eu](http://www.es-so.eu)