



# Looking at an Enormous Potential

Huge nascent renovation market offers growth opportunities for solar shading industry

Did you too feel the positive, dynamic atmosphere when walking the long corridors of this year's R+T, back in February? Several people observed this, some with a slight air of surprise and maybe some disbelief. Because outside the Stuttgart Fairgrounds, gloom and doom spilled all over the press, the television channels and most of the conversations. Yes, it may be true that the decisions to build these wonderful, impressively big booths at R+T, with lavish bars and full-service restaurants here and there, were taken long before the present crisis hit the order books. But that's a pessimist's analysis. There definitely was something of an upbeat feeling in the air, as if hope and optimism had taken over from despair and cynicism. Why was that so? Perhaps it had something to do with the enormous potential of the world-wide hunt for energy savings and its focus on the renovation market.



known, the article reported that most people mentally associate energy savings primarily with insulating the façade and installing more efficient heating equipment. But not easily with poorly performing windows. That explains why in the winter a great part of expensive heat is wasted through the windows, heating the immense outside. The article in *Die Welt* was full of interesting information – basic elements of building physics, really – on the U-value of glass and windows and on the new German legislation which demands a maximum U-value of the complete window (frame-plus-glass) of 1.7 W/m<sup>2</sup>K. As you know, the lower the U-value, the lower the heat loss. With single glazing at a fat U-value of 5.7 and 'conventional insulating glass' at 2.9, there is a gaping distance with the new objectives. That creates an acute demand for new, energy-efficient windows. Now, obviously, Germany is not alone in demanding more ambitious maximum U-values. What about the rest of Europe? And what about the summer comfort problem and the reduction of the need for cooling? Because energy travels through glass both ways and excessive heat can be just as great a problem as heat loss.

## 340 million windows in Germany

At breakfast on February 13, I picked up a copy of that morning's *Die Welt*. "Too many people still throw their heat out of the windows" was the title of a six-column piece about the window renovation market. There are 560 million windows in Germany, announced the author, and 340 million of these – that's three out of five -- are either single-pane or have "conventional insulating glass", which I assumed to mean double glazing of the first, now obsolete generation. Proportionally the position is probably about the same in the UK. Confirming what our industry has long

## One billion windows in Europe

Last January, EuroWindow, the umbrella organization of the fenestration sector representing more than 50.000 companies and one million employees, offered a Position Paper to the European Commission. The cover says "The European house needs better windows" and the report states that in domestic buildings in Europe 1 000 million windows (yes, that's one billion) should be replaced, which would save Europe a colossal 100.000 to 200.000 GWh/a. With the capacity of an average large power

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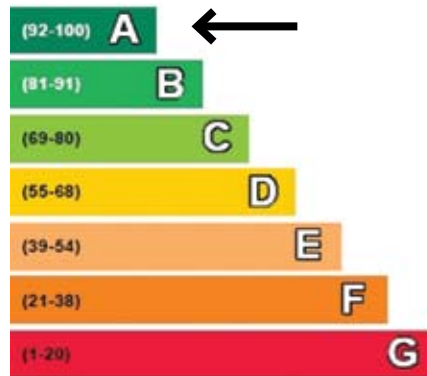


“too many people still throw their heat out of the windows”

plant at, say, 1 GW, that would save between 12 and 24 of such plants. Most of which are gas-, oil- or coal-fired, with the nuclear plants in the middle of a hot moral debate. That would be a big step towards controlling carbon emissions – or relaxing the passionate nuclear fight.

### Not just heat loss, watch out for solar control

Most of the discussions about saving energy are about avoiding heat loss. But what about avoiding overheating in summer? We all know that, even in moderate climates, summer comfort can be a big problem. Now that many cars are air-conditioned, we have a low tolerance for high indoor temperatures. While architects love large glass surfaces in buildings, which brings in lots of solar energy. That's clear in the cityscape where tall office building invariably seem to be curtain-walled, but more and more modern homes also have abundant glazed surfaces. So it makes sense when EuroWindow, in its Position Paper mentioned above, states that “The key to obtaining these low and very energy-efficient windows is to use LowE-glass and thermally improved profiles and spacers as well as blinds and shutters, to utilize passive solar energy and to improve solar control”. That's right: blinds, shutters and solar control are needed to make windows energy-efficient.



### Energy ratings for windows?

As we know by now, buildings must carry an energy certificate. The EU countries are free to pick the shape and color of these certificates and often they look like the ones that we are used to see on domestic appliances, with a range from A to G, from green to dark red. In a report called “Proposal for Energy Rating System of Windows in EU”, the Department of Civil Engineering of the Technical University of Denmark informs us that “The European Commission has now proposed to expand the labeling directive to include energy saving products like windows” and then proceeds to present a proposal. Again, we find an impressive number for the potential energy savings of replacing old windows: about 135.000 GWh/a, a figure that fits neatly in the range indicated by EuroWindow. The summary of the report states that “as the solar gain becomes high in the summer period, it is necessary to include summer conditions for windows in a labeling scheme where dynamic solutions for summer condition could be used

“blinds, shutters and solar control are needed to make windows energy-efficient.”



### Financial instruments needed

It is obvious that financial incentives are welcome to encourage owners to renovate their windows, even if the energy bills will be lower and the investment makes obvious sense. Replacing the windows in millions of homes will be an essentially local job, with local professionals of many small and medium-sized companies supplying made-to-measure products and providing services like installation and commissioning. For the financing, we see various government initiatives in many countries to make it more attractive for owners to seek energy savings in existing homes. Sometimes this applies even to owners who let their property. Among the measures are reduced VAT rates, tax credits or direct premiums, sometimes even a combination of several of these measures. I know of at least one clever professional who got himself thoroughly familiar with the red tape for obtaining the financial incentives so that he can promise his customer to take care of all the paperwork. Smart move as some people shrink back for the formalities. A ‘one stop shop’ is the best solution. With our banks on the ropes, the government help is welcome and efficient.

### Seize the opportunity

Given the immense pressure on the European Commission to deliver on the proudly announced ambitious climate policy, the move to make the huge existing building stock more energy-efficient will make itself felt. And the pressure will keep on. Just recently, on February 4, the European Parliament adopted a 50-page text by German EP-member Karl-Heinz Florenz, published under the title “2050 – The Future Starts Today: Recommendations for a Future Integrated EU-Climate Policy”. In the long list of recitals it is interesting to read that “the building sector (residential, commercial and public buildings) possesses an enormous and cost-effective CO<sup>2</sup> reduction potential from the upgrading of insulation, of heating and cooling systems, of electrical appliances and ventilation equipment and also from the installation of solar shading” (translation is mine, the official English translation is not published yet). Yes, solar shading is in it. The message is being heard. The opportunities will follow.