

Reforming the eco-innovation regulation

Regulation EC 725/2011

Under regulation EC 443(2009)¹, the EU wide CO₂ emission target for passenger cars is set at 120g/km. This target must be met through improvements to power train performance, as measured by the NEDC test cycle, and credits obtained via the eco-innovation scheme. In addition to these tools, 10g CO₂/km are meant to be saved by way of complementary measures.

High-performance glazing technologies, in particular solar control glazing, can contribute to reducing CO₂ emissions generated by light duty vehicles, which are equipped with mobile air-conditioning systems (MAC). Nevertheless, despite the complex policy architecture described above, to date no regulatory incentive exists to encourage car manufacturers to embrace this fuel and CO₂ saving technology.

Glass for Europe supports DG Climate Action's intention to re-visit the eco-innovation regulation to make the scheme more effective.

Glass for Europe believes that until the benefits of CO₂ saving glass technologies are adequately reflected in official CO₂ emissions data these technologies should become eligible for eco-innovation.

Changes requested to the eco-innovation scheme

- ▶ **Allow technology falling under complementary measures** so long that the latter are not developed
- ▶ **Consider innovative technologies with an impact on the efficiency of 'comfort equipment'**, as soon as/once the comfort equipment has become relatively standard in new vehicles
- ▶ **Review the assessment and level of the innovativeness criterion**
- ▶ **Lower the 1 g CO₂/km threshold to 0.5 g CO₂/km** to speed up new technologies entry into the market
- ▶ **Allow the use of alternative test methods**
- ▶ **Foresee the possibility of applications from groupings of automotive suppliers**

The suggestions below elaborate on the points expressed by Glass for Europe during the stakeholders' meeting organised by DG Climate Action on 30 January 2013.

As a member of CLEPA, Glass for Europe supports the views expressed by the automotive suppliers' organisation and wishes to explain how such reforms are indispensable if innovative solar control glass technologies are to benefit from the scheme.

¹ Regulation EC 443(2009) *setting emission performance standards for new passenger cars as part of the Community's integrated approach to reduce CO₂ emissions from light-duty vehicles.*

1. Allow technology falling under complementary measures so long that the latter are not developed

For the time being, most advanced glass technologies are excluded from the eco-innovation scheme as they supposedly fall under complementary measures. However, these complementary measures have not yet been developed, and with regards to the CO₂ saving benefits of solar control glass technology, only a test procedure for MAC is under development. A test procedure and the obligation for car manufacturers to include the data in the registration dossier is not a complementary measure in itself as it will not create any regulatory or market incentive to the development of new technologies.

- ▶ Until a technology is effectively covered by a complementary measure or a new test-cycle, it should be eligible under the eco-innovation scheme.
- ▶ To avoid double-counting benefits, as soon as a complementary measure is in place, eco-innovation status should be automatically withdrawn.

2. Consider the impact of innovative technologies on the efficiency of 'comfort equipment', as soon as/once this equipment becomes relatively standard in new vehicles

Glass for Europe understands the rationale behind the exclusion from the eco-innovation scheme of CO₂ saving technologies for very specific comfort equipment. Indeed, it would make little sense to provide a CO₂ credit to a vehicle equipped with a very niche comfort feature, such as heated seats, that generate extra CO₂ emissions.

There are however comfort features, like air-conditioning, which have become relatively standard in vehicles. Moreover, air conditioning is installed in the vast majority of new cars sold, and there is a significant potential for effectively reducing related CO₂ emissions. Opportunities in this field need to be seized.

- ▶ The exclusion of technologies affecting the efficiency of comfort equipment should be re-visited and balanced against the deployment of the said comfort technology.
- ▶ As soon as the comfort equipment becomes a 'standard' feature of vehicles², technologies meant to increase its efficiencies should be eligible for eco-innovations.

3. Review the assessment and level of the innovativeness criterion

It is of primary importance for the eco-innovation scheme to continue to reward innovative technologies. It must not be deflected from its purpose to reward technologies that have become widely embraced or would have otherwise become standard. Therefore, the maintenance of an innovativeness criterion is necessary, but it needs to be re-visited as the current criterion is acting as a serious brake on new applications. Two reforms need to be considered:

- ▶ **To raise the market penetration limit from 3% to 10%**

To date, to qualify as an innovative technology the applicant must demonstrate that the technology does not equip more than 3% of the new vehicles put on the market. This threshold is too low to provide an

² Literature reviews or market penetration limits could be used to check whether or not a comfort equipment has become standard. Available pieces of information suggest that more than two-thirds of new cars sold in Europe are equipped with air-conditioning systems.

incentive to technologies whose market uptake may have reached a single digit number higher than 3%, thanks to the major marketing drive undertaken over the past few years. This is notably the case of solar control glazing technologies, which have been on the market for more than 5 years, but have not been widely embraced due to the lack of regulatory or market incentive. This is all the more regrettable as the CO₂ saving potential is enormous, the technology can be very easily integrated by car manufacturers and the overall market potential is vast, as most cars are equipped with air-conditioning.

► **To allow alternative assessment methods provided by third-party experts**

Providing market data to support a registration dossier is not necessarily possible due to the very innovative nature of the technology meaning that such data may not exist. In the case of automotive suppliers in highly concentrated markets, like that of automotive glass, it could be considered in breach of EU competition rules to collect such market information, even if carried out by a third party under strict confidentiality clauses and using an anonymous format³. DG Climate Action should take account of these realities and allow a third-party expert to estimate the market penetration levels.

DG Climate Action has recognised the aforementioned difficulty and suggested the establishment of a list of pre-qualifying technologies under this criterion. Glass for Europe acknowledges that such an approach may facilitate the scheme for those technologies included in the list, but it is not sufficient to address future technologies not yet identified. Consequently, this approach will not solve all potential problems.

- Should a list be drawn up, Glass for Europe insists that solar-control glass technologies be added to the list, in light of the difficulties that could arise when it comes to demonstrating compliance with the innovativeness criterion.

4. Lower the 1 g CO₂/km threshold to 0.5 g CO₂/km to allow new technologies faster in the market

Under the present eco-innovation regulation, applicants must demonstrate that the technology allows a reduction of at least 1 g CO₂/km to qualify as an eco-innovation. In Glass for Europe's view, this ambitious threshold effectively slows down the uptake of innovative technologies even when the savings potential remains vast.

For instance, solar control glass technologies do not meet this threshold, nevertheless, the use of the technology in all cars equipped with air-conditioning would result in tremendous savings as the deployment potential is so vast. Unless this threshold is lowered to 0.5 g CO₂/km, Europe will only have to wait until further advances in glass technologies are achieved, which may take years. It must be noted that in the United-States, the Environmental Protection Agency (EPA) already grants CO₂ credits to car manufacturers equipping vehicles with advanced solar-control glazing.

- The key to rewarding innovation is the market uptake of efficient technologies. For the eco-innovation scheme to serve this purpose, the 1 g CO₂/km threshold should be lowered to 0.5 g CO₂/km in order to incentivise applied R&D.
- In order to reward innovative technologies that have a substantial potential, the European Commission may also consider analysing the deployment potential of the said technology.

³ Despite all precautions that could be envisaged, sharing an anonymised aggregated data could be considered by DG Competition services as an 'increase in transparency' in the market. This could potentially be considered in breach of EU law. Should that be the case, the glass industry would be de facto disqualified from the scheme.



5. Allow the use of cycles other than NEDC to evaluate CO₂ savings

For the purpose of demonstrating the CO₂ savings potential of innovative technology, the eco-innovation regulation imposes the use of the NEDC test-cycle. Glass for Europe wishes to ensure that the eco-innovation scheme remains robust and therefore that claimed savings are demonstrated on a solid and adequate basis. With that objective in mind, it must be recognised that savings of some operating systems in vehicles may be better assessed using other test procedures.

As a matter of fact, the European Commission already recognised this when it concluded that an alternative test method was needed to assess the efficiency of mobile air-conditioning systems and the contributions of solar control glass. These alternative, more appropriate test methods agreed by European authorities should be used to demonstrate the CO₂ savings potential, where appropriate. This would provide robustness, complementarities and coherence in European policies.

- ▶ Where alternative test methods agreed by European authorities, are available to assess the CO₂ savings potential of cars' operating systems, these test methods should be allowed to demonstrate the CO₂ savings potential for the purposes of an eco-innovation registration.

6. Foresee the possibility of applications from groupings of suppliers

The eco-innovation regulation foresees applications from either car manufacturers or automotive suppliers. Glass for Europe believes that applications should be allowed from groupings of suppliers.

In the case of glazing, the innovative solar-control glass technologies are manufactured and marketed by different glass companies. Each product is of course different as manufacturers have their own coating formula. That being said, the solar-control performance of an automotive glass piece is assessed based on an indicator, TTS, *the transmission of total solar energy*, which can be calculated for each glass piece. Depending on the TTS value, the glass surface and its mounting angle in the vehicle, the heat load entering the vehicle and the air-conditioning power needs can be extrapolated from a look-up table. Therefore, it would be possible to grant eco-innovation status to all solar-control glass technologies provided that they achieve certain performance levels and therefore produce the requested savings.

This approach would avoid glass manufacturers having to apply separately for eco-innovation status for their own products when a generic application based on performance indicators is sufficient. Allowing this type of applications would contribute to speeding up the placement on the market of innovative technologies as precious time would not be lost in duplicating administrative files.

- ▶ A revised eco-innovation regulation should open up the possibility to groupings of companies to apply for eco-innovation status based on the performance levels to be achieved by the innovative technology, regardless of the manufacturing method and of the products' trade mark.

Glass for Europe is the trade association for Europe's flat glass sector. Flat glass is the material that goes into a variety of end products, primarily in windows and facades for buildings, windscreens and windows for automotive and transport as well as solar energy equipment, furniture and appliances. Glass for Europe brings together multinational firms and thousands of SMEs across Europe, to represent the entire flat glass value chain. It is composed of flat glass manufacturers, AGC Glass Europe, Guardian, NSG-Group, Saint-Gobain Glass Industry and Siseçam-Trakya Cam, and works in association with the automotive glass partner Carlex as well as national partners gathering thousands of building glass processors and transformers all over Europe.





ANNEX – Explanations on solar control glazing

In recent years, the industry has developed solar control glazing. This type of glass is specially engineered to reduce vehicle cabin temperature by up to 7°C or 8°C, and reduce heat penetration in vehicles exposed to solar radiation by over 25%. In this way, a significant amount of energy is saved from powering air-conditioning units while passengers' comfort is ensured.

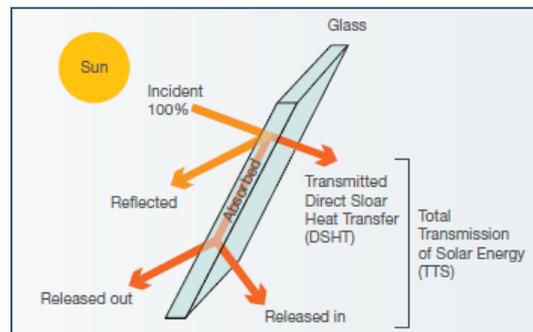
What is solar control glazing?

As part of the heat-reflective technologies, solar control glazing has a coating that allows it to reduce the transmission of solar heat from the external environment while still permitting optimal light transmission essential to ideal driving conditions. This type of glazing can reduce by over 25% the heat penetration in vehicles exposed to solar radiation, thus reducing the need for the use of fuel-hungry cooling systems.

As well as reducing heat levels, the inherent insulation properties of advanced glass also considerably reduce the effects of external cooling, as laminated glazing and low-emissivity coating glass have insulation properties that keep the car's cabin warm in winter. Thus, advanced glazing provides thermal comfort all year round.

How is its performance assessed?

The simplest way to assess the solar control properties of automotive glazing is by its TTS value. TTS stands for 'transmission of total solar energy' into a vehicle, and it is determined by solar direct transmittance plus the secondary heat transfer of the glazing towards the interior of the vehicle's cabin. In theory, the lower the TTS value, the more energy-efficient the vehicle becomes. The TTS value, once processed with other data, can be used to determine the fuel-efficiency gains from reduced recourse to air-conditioning, as is already the case in the United States.



Isn't it covered by the Mobile Air-Conditioning initiative?

Within the framework of the 'Mobile air-conditioning initiative' launched by the European Commission, test procedures to quantify effectively the fuel consumption of MAC systems are under development. Because the reduction in the cabin temperature stemming from the use of solar control glazing results in reduced air-conditioning use and to lower loads on units, it contributes significantly to reducing the real-life energy use of units. As this is already well documented, the glazing type is likely to be integrated as a parameter in the test procedure.

However, beyond test procedures, ways of ensuring that car buyers are properly informed about the performance of these systems should be considered. The test procedure – which is not yet adopted – does not in itself provide an incentive to using the technology indeed.

Given that advanced glazing can improve a vehicle's overall efficiency by up to 2 to 4%, it would be pertinent to reflect on including emissions from vehicle air conditioning in official fuel consumption data and the NEDC driving cycle.

