

Climate Change Legislation: Views From the Flat Glass Industry

Key Points

1. Most energy used in producing flat glass for windows is saved over the window's life cycle. Climate change measures should recognize the industry's contributions to reducing emissions of greenhouse gases (GHGs).
2. The cap and trade and carbon tax systems each have their own strengths and weaknesses, but any system must be market-based and free from political interference.
3. If a cap and trade system is selected, permits for emissions within the cap should be freely allocated.
4. U.S. flat glass manufacturers should not be disadvantaged with respect to foreign competitors that do not bear the same environmental costs. This would require rebates, free allocations, or border adjustments for imports from countries not enforcing acceptable emissions standards.

Discussion

1. Glass saves energy over its useful life. In recent years, windows have undergone a technological revolution. For residences, advanced glass coatings reduce heat loss in cold climates and heat gain in cooling situations, yielding annual energy savings of 25-40%. In commercial buildings, advanced glass coatings cut cooling demand by screening 65-75% of solar heat. These advanced glass products continuously save energy over a lifetime of 20-50 years.
2. The industry has become more energy efficient, but GHG emissions during the manufacturing process are unavoidable. Flat glass manufacturing is a combustion process requiring melting of silica sand, soda ash, and other raw materials in a furnace at 2900 °F. For each ton of glass produced, about one-half ton of GHGs (primarily CO₂) are emitted. About 4.7 million tons of flat glass were produced in the United States in 2007, releasing GHG emissions of some 2.3 million tons. Over the past 30 years, the industry has reduced by 50% the energy required to produce a ton of glass. Emissions have been further reduced by widespread conversion to natural gas for melting. But technology to achieve significant additional savings is not currently available or on the horizon.
3. Under a carbon tax system, the tax should be imposed early in the production chain. The earlier the tax is imposed, the more efficient the necessary adjustments in the pricing mechanism will become. The tax should be revenue neutral, achieved with offsetting reductions in other taxes.
4. Under a cap and trade system, permits should be freely allocated for emissions within the cap. Auctioning of permits would place an unreasonable new financial burden on manufacturing facilities. Permits should be freely granted, with the annual cap reduced as appropriate to meet national emission targets. Manufacturers would buy or sell permits at the margin as needed. This approach would give industry the maximum incentive to invest in emissions-reducing technology.
5. Foreign leakage must be prevented. The flat glass market is driven primarily by price. Foreign competitors will inevitably gain market share in the U.S. and abroad unless there is a system for balancing environmental costs. U.S. producers' competitiveness in both home and export markets could be best maintained by providing rebates or free allocations. Adjustment would be relatively simple with a carbon tax, since world trade rules allow domestic indirect taxes to be rebated on exports and applied on imports.
6. Flat glass enhances quality of life. It is used in commercial and residential building envelopes to allow light to enter and to provide views of the outside. Its uses inside buildings include mirrors, tabletops, room partitions, and doors. It is also an essential material in autos. And it is used as a substrate in the renewable solar power industry.

About GANA

The Glass Association of North America (GANA) is the leading commercial glazing industry trade association in North America.