

Meeting UNFCCC Targets via Materials Policies

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Under current conditions, approximately one quarter of the GHG emissions can be attributed to the production of materials, and these emissions can be reduced through changes in the materials use. However, such strategies compete with strategies that reduce the emissions in the production of materials itself. An integrated life cycle approach is required for proper assessment of the various materials related options in close conjunction with the energy sector.

An integrated energy and materials MARKAL model for Western Europe has been developed by ECN in co-operation with many other parties. Calculations with this model indicate that the materials system can contribute up to 1200 Mt CO₂-equivalents of emission reduction. The results indicate that the costs are in many cases below the costs for emission reduction options in the energy system. The model has also been used to analyse the impacts of GHG policies on the life cycle of individual materials. Some examples will be elaborated.