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Climate Change Impact Due to Timber Product Imports in the UK

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Abstract : Buildings are thought to consume about 50% of the total energy in the UK. The use stage in a building life cycle has the largest energy consumption, although different assessments are showing that the construction can equal several years of maintenance and operations. The selection of materials with lower embodied energy is very important to reduce this consumption. For this reason, timber is one adequate material due to its low embodied energy and the capacity to be used as carbon storage. The use of timber in the construction industry is very significant. Sawn wood, for example, is one of the top 5 construction materials consumed in the UK according to National Statistics. Embodied energy for building products considers the energy consumed in extraction and production stages. However, it is not the same consideration if this product is produced locally as when considering the resource produced further afield. Transport is a very relevant matter that profoundly influences in the results of embodied energy. The case of timber use in the UK is important because the balance between imports and exports is far negative, industry consuming more imported timber than produced. Nearly 80% of sawn softwood used in construction is imported. The imports-exports deficit for sawn wood accounted for more than 180 million pounds during the first four-month period of 2016. More than 85% of these imports come from Europe (83% from the EU). The aim of this study is to analyze climate change impact due to transport for timber products consumed in the UK. An approximate estimation of energy consumed and carbon emissions are calculated considering the timber product's import origin. The results are compared to the total consumption of each product, estimating the impact of transport on the final embodied energy and carbon emissions. The analysis of these results can help deduce that one big challenge for climate change is the reduction of external dependency, with the associated improvement of internal production of timber products. A study of different types of timber products produced in the UK and abroad is developed to understand the possibilities for this country to improve sustainability and self-management. Reuse and recycle possibilities are also considered.

Keywords : embodied energy, climate change, CO2 emissions, timber, transport
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