Mady Olonscheck, J Earth Sci Clim Change 2016, 7:9(Suppl)
http://dx.doi.org/10.4172/2157-7617.C1.028

Less heating, but more cooling - How will European countries be affected by climate induced changes in the energy demand of buildings?

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Climate change affects the energy demand for room conditioning of buildings. Rising temperatures will cause a reduction in the heating energy demand but could also lead to a strong increase in the cooling energy demand of residential buildings. We present a method to calculate the impact of climate change, retroffiting measures and population changes on the future energy demand of the residential building stock in more than 20 European countries. The aim is to create a final map that shows countries which will benefit from future temperature increases due to strong reductions in the heating energy demand of buildings and losers. In the latter type of countries the increase in the cooling energy demand will be stronger than the reductions in heating energy demand. Finally, there will be countries with a future balance between an increasing cooling energy demand and a decreasing heating energy demand. This European-wide study will be the first study that not only allows for the examination of the impact of climate change on the building energy demand of different countries, but also allow for the determination of the contribution that each country can make to reduce greenhouse gas emissions and to mitigate climate change. First results will be presented for selected countries. A sensitivity analysis shows the contribution of the different influencing factors on the energy demand for room conditioning of buildings by the middle of this century.

Biography

Mady Olonscheck has submitted her PhD on "the impact of climate on the energy sector" at the University of Potsdam in May 2016 and will defend it in September 2016. She has been working as Research Associate at Potsdam Institute for Climate Impact Research, Germany for more than five years. She is the author of different peer-reviewed publications that deal with climate change effects and has both teaching and supervision experience. She also completed a correspondence course on technological impact assessment at Karlsruhe Institute for Technology, Germany and is interested in international co-operations regarding energy, climate and sustainability issues.

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