

Loss potentials for European windstorms under future climate conditions

May 21st, 2013



Statistical analyses reveal a general and consistent tendency towards an increased frequency of windstorm-related losses over most of Western, Central and Eastern Europe for IPCC B1 and A2 scenarios, and slightly inconsistent findings for A1B scenario. From these analyses, losses are expected to reach unseen magnitudes, which for some countries (e.g. Germany) may exceed 200% of the strongest event in present day climate simulations.

These analyses show 3 different tendencies the period 2060-2100 compared with 1960-2000:

1. Countries with shorter return periods of storms and higher losses for all 3 climate scenarios: Germany, Belgium, the Netherlands, Poland, Estonia, Austria, Croatia, Bosnia and Hungary;
2. Norway with longer return periods and lower losses for all 3 climate scenarios;
3. All other countries of Western, Central and Eastern Europe have typically higher losses under future climate conditions and in some cases shorter return periods.

In addition to these statistical analyses, simulations by a global climate model for the period 2060-2100 show that maximum storm losses for countries of Western Europe could increase by ~65% by the end of the 21st century. Only for Norway weaker losses are found.

Source: Pinto et al., 2012. Climate Research 54: 1-20.

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