



## **Future Projections of Heating and Cooling Degree Days in a Changing Climate of Turkey**

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The use of the degree days method is the most practical way to foresee the future changes in energy demand due to climate change-induced heating and cooling. Since the temperatures in Turkey vary considerably on a regional basis, the periods 2016-2035 and 2046-2065 have been respectively examined with reference to the period of 1981-2000, taking the mean temperature values into consideration in order to make the most accurate estimation. The future projections were applied based on the RCP8.5 (BAU-business as usual case) emission scenario using regional climate model called RegCM. According to the result of the study, it is projected that the numbers of heating degree days (HDDs) will decrease in the whole country, whereas the frequency of cooling degree days (CDDs) will increase in general. This decrease in HDDs and the increase in CDDs will be higher in the period of 2046-2065 than in the period of 2016-2035. These findings are also consistent with the expectation of temperature increases over these regions for the future period, obtained from the studies of climate modeling for the Mediterranean Basin and Turkey as well.

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