



## A climate change methodology for the UK gas industry

Edward Pope, Kate Brown, Justin Krijnen, and Helen Hanlon  
UK Met Office, Hadley Centre, United Kingdom (edward.pope@metoffice.gov.uk)

Gas demand within a Local Distribution Zone (LDZ) in the United Kingdom is predicted using the so-called Composite Weather Variable. This quantity provides a single measure of weather and depends most strongly on temperature, but also takes into account wind speed, effective temperature and pseudo normal effective temperature. However, the combined effect of natural climate variability and anthropogenic climate change (as well as potential changes in consumer behaviour) mean that observed climatological averages no longer provide a representative baseline for predicting gas demand. Therefore, in order to estimate likely future gas demand, the UK gas industry requires climate projections which draw on our current best-understanding of the climate system. Here, we describe a methodology for producing hourly projections which makes use of state-of-the-art climate models (the CMIP5 global multi-model ensemble, and the QUMP perturbed parameter regional model ensemble), and also incorporates relevant aspects of the historical observations. This methodology is designed to make use of key sources of information provided by the models and observations, while also assessing uncertainty in the projections which arises due to simulated natural climate variability, along with structural and parameter differences in the climate models.