The authors collected dust samples from six sites in the Qaidam Basin, over three years to investigate the impact of domestic heating on atmospheric dust in hyper-arid region. The OC/EC and char-EC/soot-EC ratios, along with PMF results, indicated that coal and biomass burning were the main contributors to dust deposition in rural, strongly influenced by domestic heating, whereas urban dust predominantly originated from vehicle and industrial emissions. This study provides a reference for investigating carbonaceous aerosols in climatically similar hyper-arid basins with intensive human activity and salt lake regions Overall, the results are well presented and discussed. It is publishable after the following questions have been well addressed.

1. The abstract of the current manuscript requires supplementation with more qualitative and quantitative descriptions, such as the significant differences in OC/EC ratios and the percentage contributions from PMF source apportionment. These additions would further highlight the key findings of this study.
2. The manuscript should provide more detailed descriptions of the sampling sites, particularly regarding the sampler installation height and surrounding environment (e.g., distance from potential interference sources like roadways or chimneys). These specifications are crucial for evaluating potential sampling biases and ensuring reliability of the study. Does the collection efficiency of PM10/PM2.5 by the glass ball method need calibration?
3. The emission factors used in the PMF analysis (Section 3.6) require proper justification through established criteria or references to previous studies.
4. The discussion would benefit from a systematic comparison of QDB's carbon composition with data from other global regions.
5. The observed inverse trend in salt lake sources during HP periods necessitates more mechanistic explanation (line 550). Potential contributing factors might include: (1) wind speed or direction variations? (2) seasonal differences in salt lake activity? and (3) atmospheric transport differences caused by geographical location?
6. It is recommended to mark the percentage values in Figure 7 for clear comparison.
7. The authors should check through the whole manuscript very carefully for the

revised version. Some mistakes should have been avoided if the authors carefully inspect the text before the submission. Such as line 33: “between2020” → “between 2020”.