The author created a dataset of storage tanks using a deep learning approach applied to high-resolution remote sensing imagery. This dataset provides a comprehensive, validated, and geo-referenced collection of details, including the precise locations, distributions, and construction years of storage tanks. It covers 92 representative cities, encompassing a total of 14,461 tanks. The manuscript also explores the spatial correlations between the distribution and density of storage tank and methane emissions, contributing to a more profound understanding of the societal, ecological, and settlement impacts of methane emissions from these structures. The paper's innovation lies in its comprehensive database of storage tanks across 92 typical cities and its large-scale exploration of the spatial interplay between storage tanks and methane emissions. However, there are some problems that require responses from the authors. Afterwards, this manuscript could be accepted for publication after a minor revision.

Some detailed problems:

Line 167-168: The author seems to refer to 'coastal cities' when mentioning that "Many of the cities are located near or next to the boundary of 167 mainland China.", and this should be explicitly identified.
Answer: Thanks very much for your comment. The corresponding sentence has been modified to be 'Many of the city regions are coastal cities' in **Line 168** of the revised manuscript.

Line 172-173: The manuscript predominantly focuses on the measurement of methane emissions, rather than the measurement of methane reduction.
Answer: Your suggestion is much appreciated. We have modified methane reduction to methane emissions in the revised manuscript in **Line 173-174** as follows:' The lack of efficient measurements in CH4 emissions will result in a more direct impact on the populations in the residential area'

Line 204-205: Why are the storage tanks mainly constructed in residential areas? I think it should be placed in the built area and bare ground that is far from residential areas in urban settings.
Answer: Sorry for the misleading sentences. We have modified the corresponding sentence to be 'Given that storage tanks are constructed mainly in urban area due to the high expense of transportation of pipelines' in **Line 205-206** of the revised manuscript.

Line 220-221: The terms of LULC categories should be consistent throughout the manuscript. For instance, the "Bare ground" or "Bare Ground" and "Flooded vegetation" or "Flooded Vegetation" should be maintained in a uniform format.
Answer: Sorry for the inconsistent expressions. We have modified the inconsistent' Bare Ground' and 'Bare ground' to be 'bare ground'; 'Flooded Vegetation' and 'Flooded vegetation' to be 'flooded vegetation' in the revised manuscript to keep consistency.

Line337-343 & 508: The equations should be aligned at the centre within the text.
Answer: Thanks very much for your suggestion. All the equations have been revised to place in the center in the revised manuscript.

Line 425-426 & 598 & 602: The "m2" should be written as "m2" and the "CH4" should be written as "CH4" in the text.

Answer: Sorry for the wrong writing. We have modified 'm2' to be 'm^2', and 'CH4' to be 'CH_4' in the revised manuscript.

Line 428-430: The storage tanks of different categories should not omit their respective units in the figure, such as 500-1000 m2.

Answer: Sorry for the omission. We have added unit for all the footprint size of storage tanks throughout the revised manuscript.

Line 448: The author seems to refer to 'coastal regions' when mentioning "especially at the border of mainland China", and this should be explicitly identified.

Answer: Thanks very much for your pointing this out. We have modified the sentence to be 'There are also some city regions with a high density of storage tanks and low CH_4 emission estimation, especially coastal cities, as in the cases of F.' in **Line 452-453** of the revised manuscript.

Line 466 & 468: The units "TgCH4yr-1" should be separated in the text.

Answer: Yes, you are right. We have separated the unit 'TgCH4yr-1' to be 'Tg CH_4yr^{-1}' in the revised manuscript.

Line 470 & 525: The p-value is usually represented as "p=0.1" or "p=0.05".

Answer: Thanks for pointing this. We have modified the corresponding sentence to be 'As shown in Figure 10B, the CH4 emission values of storage tank pixels are statistically significantly larger than that of background object pixels at a confidence level of p=0.05' and '' in Line 473-475 and 'Grids showing a statistically significant correlation ($p<0.1$) between storage tank density and CH4 emissions typically display a notable rise in the rate of storage tank density, particularly in grids with at a confidence level of p=0.05' in **Line 528-531** of the revised manuscript.

Line 475-476: In figure 10 (A), the "CH4" should be "CH4". In figure 10 (B), the unit "Tg CH4 yr-1" of methane emissions of left panel is necessary after "Methane emission".

Answer: Sorry for the error we made. 'CH4' has been corrected to be 'CH_4' in the revised Figure 10(A). The unit 'Tg CH_4yr^{-1}' has been added in the caption of Figure 10(B). For your convenience to check, the revised Figure 10 has been listed below.

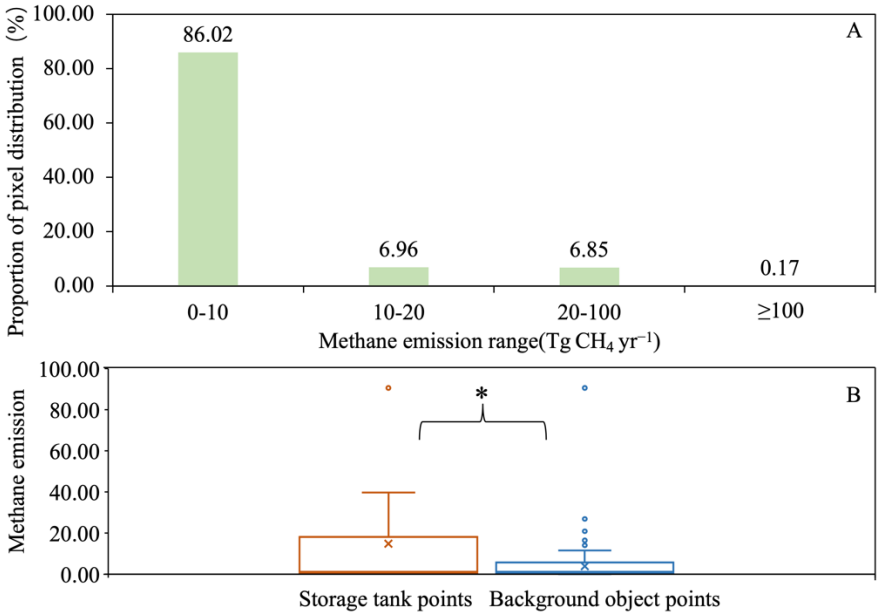

Figure 10. Distribution pattern of storage tank pixels with different CH_4 emission estimations: (A) Proportion of pixels with different CH_4 emission estimations; (B) box plot of CH_4 emission (Tg $CH_4 yr^{-1}$) of storage tank points and background object points.

Line 490 & 493: The formatting of tables should be consistent throughout the entire manuscript, using either "Table 1, Table 2" or "Table I, Table II".

Answer: Sorry for the inconsistent error. We have modified Table 1 to be Table I in the revised manuscript.

Line 505: The term 'oil tank' is being introduced here for the first time. It is necessary to clarify whether 'oil tank' and 'storage tank' are synonymous with each other.

Answer: Sorry for the misleading expression. We have modified 'oil tank' to be 'storage tank' in the revised manuscript.

Line 676 & 715 & 724 & 725 & 734 & 735 & 743 & 749 & 778: The author should undertake a thorough review to guarantee the entirety of these references.

Answer: Sorry for the missing information of the references. We have checked the references and added the corresponding details in the corresponding sections of references.