Data Intake Processing and Verification Report

Background Information

- **Original Dataset Name:** ODIAC Fossil Fuel Emission Dataset
- **GHG Center Dataset Title:** ODIAC Fossil Fuel CO_2 Emissions
- **Dataset Provider:** NASA/NIES
- **Date Obtained:** November 6, 2026
- **Location Obtained from:** http://doi.org/10.17595/20170411.001
- **Data Location in GHG Center:** odiac-ffco2-monthgrid-v2025
- **Data POC(s):** Dr. Tomohiro Oda
- **Dataset File Type(s):** GeoTIFF
- **Projection (if different from WGS84):** NA

Data Transfer Confirmation

An MD5 checksum is used to detect high-level errors within data transmissions

- Results for individual checksum file comparisons of pre-transfer and post-transfer for few files are shown below:

Filename	MD5 Original file	MD5 Downloaded file
odiac2025_1km_excl_intl_0001.tif.gz	959e753c1ba2192c67cbde5ba3928927	959e753c1ba2192c67cbde5ba3928927
odiac2025_1km_excl_intl_0005.tif.gz	624afe9430615b6be55dc2b12c9b7960	624afe9430615b6be55dc2b12c9b7960

- All files were transferred successfully
- No individual file issues were found

Data Intake Process

- https://us-ghg-center.github.io/ghgc-docs/data_workflow/odiac-ffco2-monthgrid-v2025_Data_Flow.html

Dataset Statistics for 2023:

Comparison statistics between source files (NetCDF) and transformed files (Cloud Optimized GeoTIFF):

- Mean, min, max for 2023:

	Minimum	Maximum	Mean	Standard Deviation

Original Dataset	0.0	1635050.0	0.92	280.52
Cog transformed dataset	0.0	1635050.0	0.92	280.52

- All values are in the expected range

Random Checks / Visual Confirmation

More detailed statistics for few files are shown below (randomly chosen):

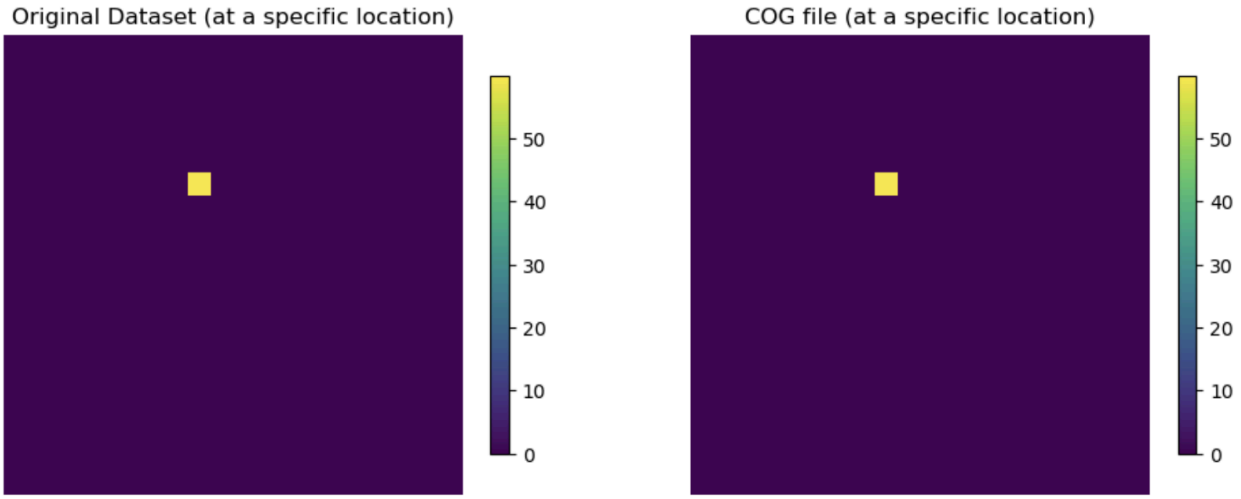
- Statistics were performed for the following:
  - February, 2023:

	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	1361813	0.839	249.84
Cog transformed dataset	0.0	1361813	0.839	249.84

  - November, 2023:

	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	1267261.250	0.876	262.49
Cog transformed dataset	0.0	1267261.250	0.876	262.49

- The data comparison for May, 2010 was performed at a specific location by subsetting using the indices [2430:2450, 1200:1220]



	Minimum	Maximum	Mean	Standard Deviation
Original Dataset	0.0	59.84	0.149	2.988
Cog transformed dataset	0.0	59.84	0.149	2.988

Summary

- We are confident that the transformation and display of data in the US GHG Center accurately represents the source data
- Link to the transformation code
- Link to the dataset Tutorial
- Link to the US GHG Center data catalog page

Report updated on: 11/6/2026 to reflect a version update
MSFC POC for questions: Jeanné le Roux, Siddharth Chaudhary