Data Archiving for WG III

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| **Report** | WG III TS |
| **Figure Number**  (e.g. SPM.1) | TS.3 |
| **Authors Names** | William F. Lamb |
| **List of all input research papers and grey literature sources**  Please provide links or DOIs where applicable. This step is crucial for traceability. | Friedlingstein, P., Sullivan, M. O., Jones, M. W., Andrew, R. M., & Hauck, J. (2020). Global Carbon Budget 2020. *Earth System Science Data*, *12*, 3269–3340. https://doi.org/10.5194/essd-12-3269-2020  Canadell, J. G., Monteiro, P. M. S., Costa, M. H., Cotrim da Cunha, L., Cox, P. M., Eliseev, A. V, Henson, S., Ishii, M., Jaccard, S., Koven, C., Lohila, A., Patra, P. K., Piao, S., Rogelj, J., Syampungani, S., Zaehle, S., & Zickfeld, K. (2021). Global Carbon and other Biogeochemical Cycles and Feedbacks. In V. Masson-Delmotte, P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J. B. R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, & B. Zhou (Eds.), *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. |
| **Data Source**  If the data is provided by IEA (International Energy Agency) then we will use the follow statement:  *OR*  EDGAR (Emission Database for Global Atmospheric research) then we will use the following statement: | Historical emissions data from Friedlingstein et al. (2020) and carbon budgets from Canadell et al. (2021). References above. |
| **Data processing or treatment**  Please provide a text based description of any data pre-processing or transformations undertaken to the input or source data in order to produce the figure in the report.  This is important if the traceable dataset or numbers are different from those appearing on the figure. The reader should be able to understand how we arrived to the final data appearing on the SPM figure from reading this field, and should be able to replicate the steps. Therefore, the level of details presented here should be enabling such replication. | Panel a:   * We convert the original data from Friedlingstein et al. (2020) into GtCO2 from GtC by multiplying all values by 44/12   Panel b:   * For uncertainty ranges in historical cumulative CO2 emissions, we assume an uncertainty of 0.05 for fossil fuel and industry CO2. For LULUCF CO2 emissions, we use the standard deviation of an ensemble of 17 dynamic global vegetation models, as described in Friedlingstein et al. 2020. To combine these uncertainties, we take the square root of the sum of the squared uncertainties. * For uncertainty ranges in future carbon budgets, we use the budget uncertainty of +/-220 GtCO2 described in Canadell et al. 2021. |