Data Archiving for WG III

**Instructions: Please complete one file per figure.**

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| **Report** | WG III SPM |
| **Figure Number**  (e.g. SPM.1) | SPM2 |
| **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. | Minx, J. C., Lamb, W. F., Andrew, R. M., Canadell, J. G., Crippa, M., Döbbeling, N., Forster, P. M., Guizzardi, D., Olivier, J., Peters, G. P., Pongratz, J., Reisinger, A., Rigby, M., Saunois, M., Smith, S. J., Solazzo, E., & Tian, H. (2021). A comprehensive and synthetic dataset for global, regional, and national greenhouse gas emissions by sector 1970–2018 with an extension to 2019. *Earth System Science Data*, *13*, 5213–5252. https://doi.org/10.5194/essd-13-5213-2021  AR7 Scenario database |
| **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: | Minx, J. C., Lamb, W. F., Andrew, R. M., Canadell, J. G., Crippa, M., Döbbeling, N., Forster, P. M., Guizzardi, D., Olivier, J., Peters, G. P., Pongratz, J., Reisinger, A., Rigby, M., Saunois, M., Smith, S. J., Solazzo, E., & Tian, H. (2021). A comprehensive and synthetic dataset for global, regional, and national greenhouse gas emissions by sector 1970–2018 with an extension to 2019. *Earth System Science Data*, *13*, 5213–5252. <https://doi.org/10.5194/essd-13-5213-2021>  AR7 Scenario database |
| **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. | * We apply global warming potential values with a 100 year time horizon * We calculate the average annual change in emissions using the method described in Annex II * We group scenario categories according to the classification described in TS Table 3 * We select only scenarios within the 5th and 95th percentiles of each scenario category   Our code is available online: <https://github.com/mcc-apsis/AR6-Emissions-trends-and-drivers/blob/master/R/Analysis%20and%20figures/emissions_by_region.Rmd> |