

CLEWs modelling workflow development to support coherent policy development

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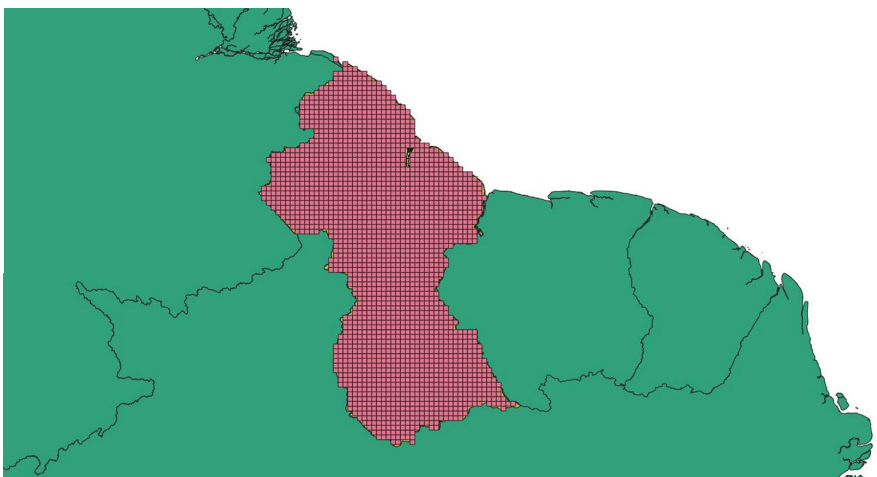
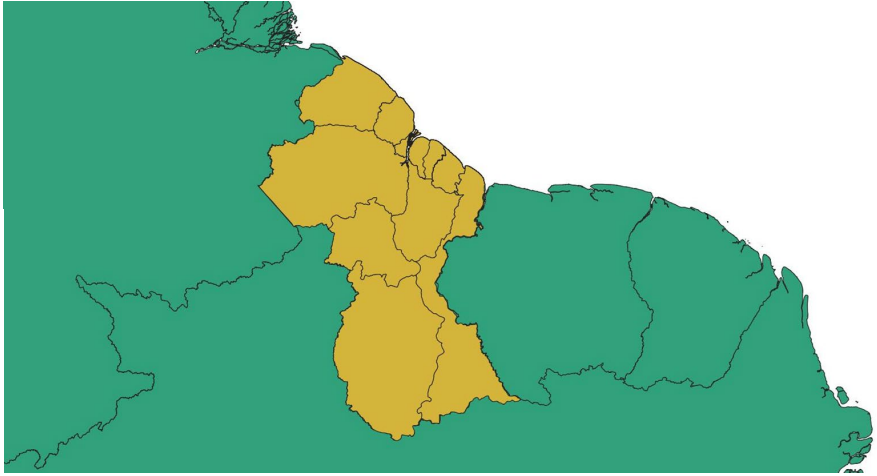
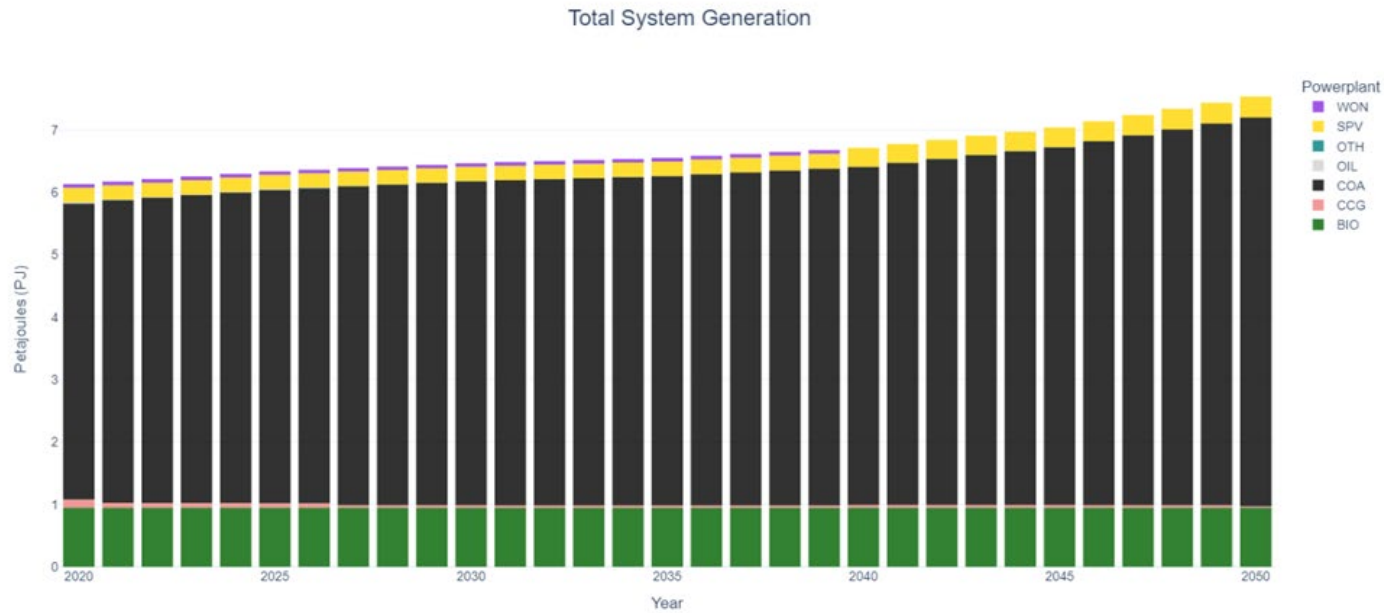
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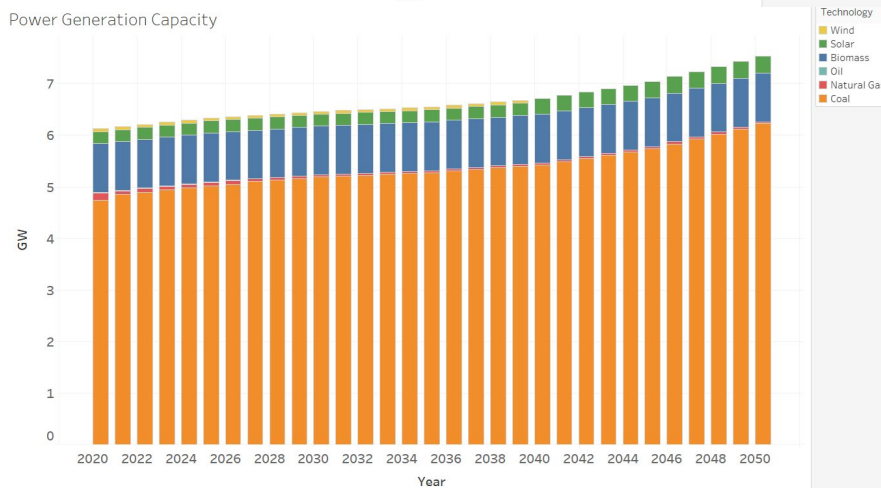
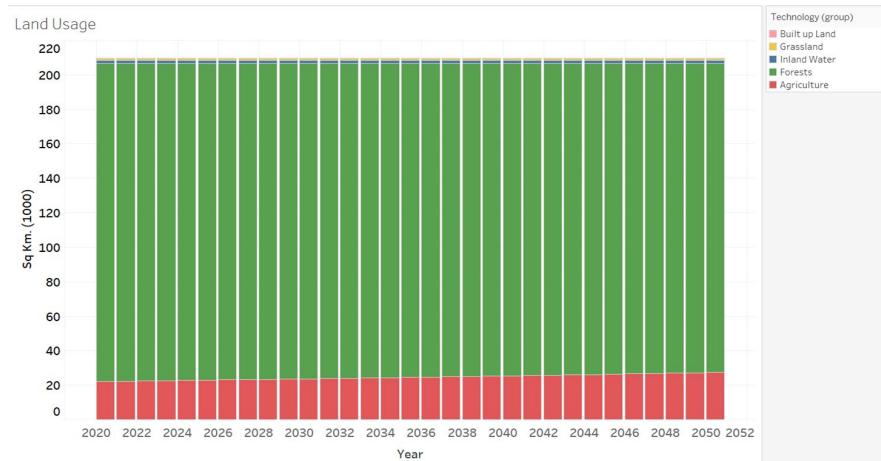
Purpose

- Defining the CLEWs (Climate, Land, Energy and Water) modelling framework
- Demonstrating the CLEWs modelling framework with a base model for Guyana
- Demonstrating a net zero scenario model for Guyana by 2050 using the CLEWs framework

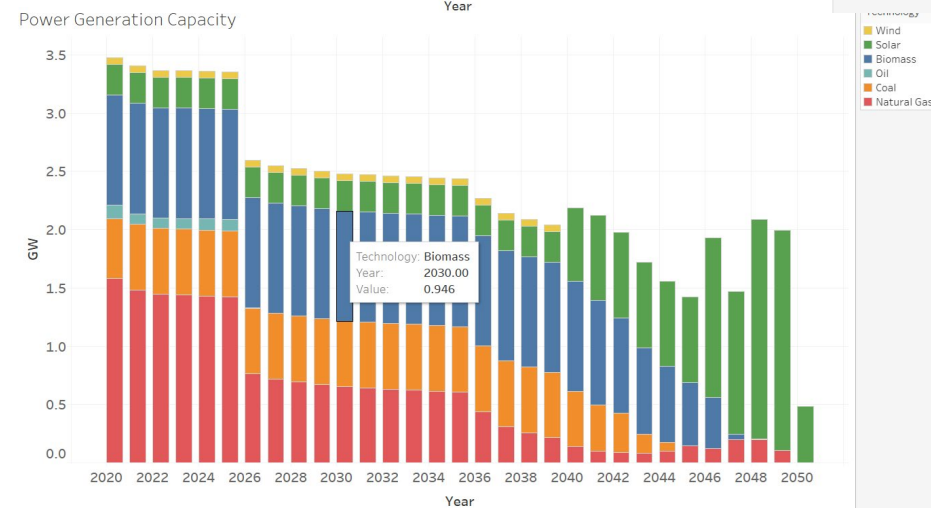
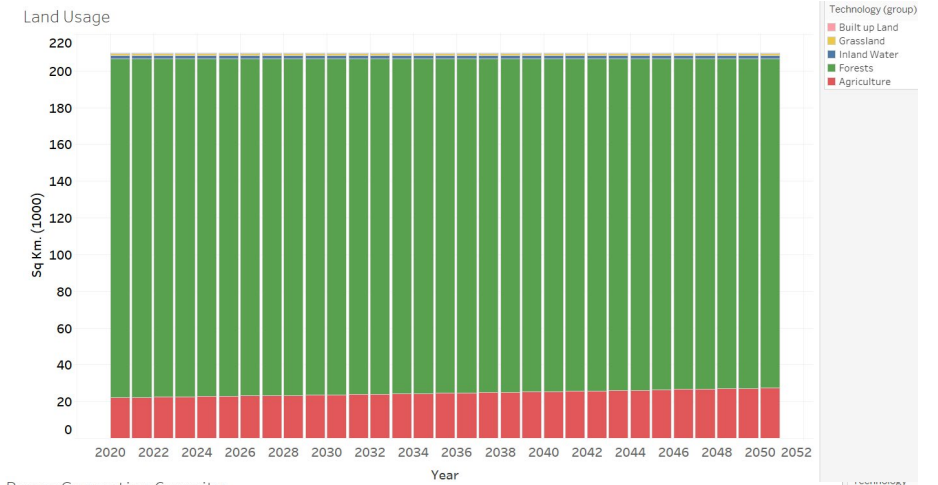
OSeMOSYS Global & geoCLEWs



Guyana CLEWs Results



Base Model

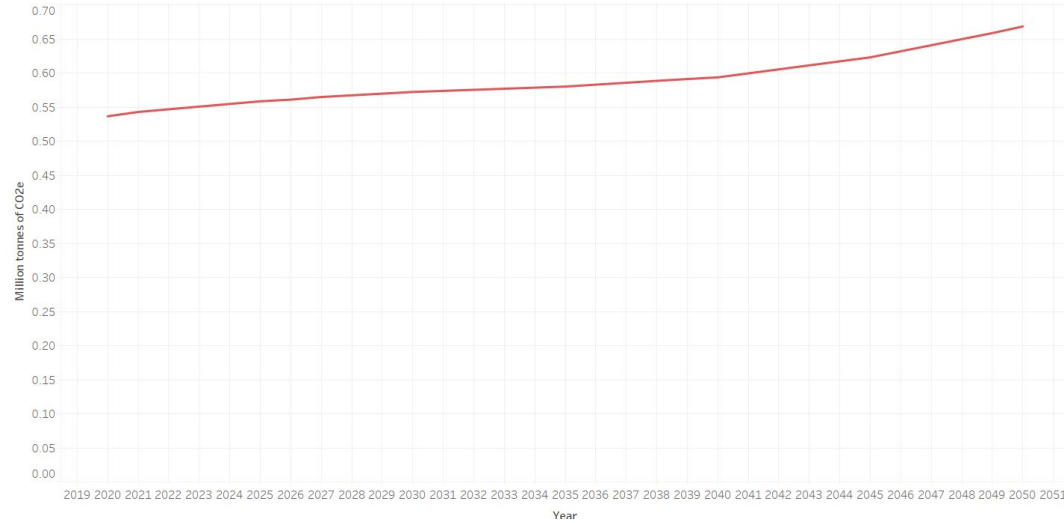


Net Zero Model

Guyana CLEWs Results



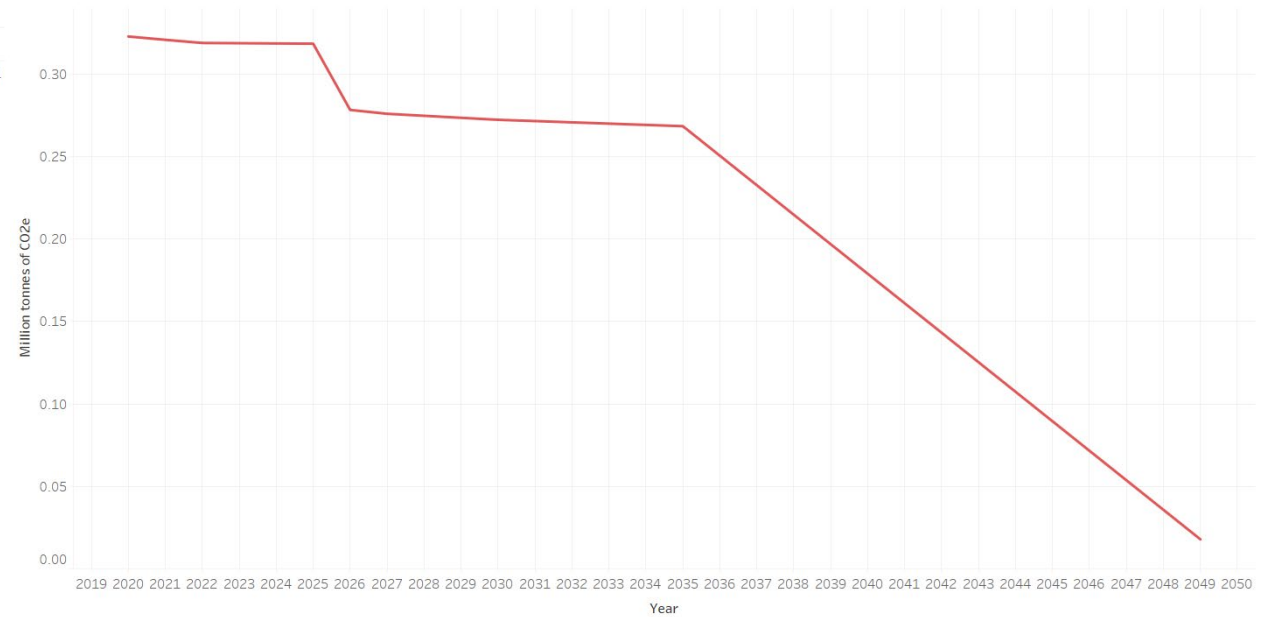
Annual Emissions



Base Model

Net Zero Model

Annual Emissions



References

- CLEWs: K. Kuling, Y. Saedi, T. Barnes, A. Sunder Rajan, and T. Niet, “CLEWs Global: An open source, open data Climate, Land, Energy, and Water systems model generator.” Accessed: Feb. 21, 2024. [Online]. Available: <https://summit.sfu.ca/item/36641>
- OSeMOSYS Global: Barnes, T., Shivakumar, A., Brinkerink, M. et al. OSeMOSYS Global, an open-source, open data global electricity system model generator. Sci Data 9, 623 (2022). <https://doi.org/10.1038/s41597-022-01737-0>
- geoCLEWs: Y. Saedi, “Enhancing open source CLEWs models with high-resolution land and water data.” Accessed: Apr. 04, 2024. [Online]. Available: <https://summit.sfu.ca/item/38005>
- Clewsy: T. Niet and A. Shivakumar (2020): clewsy: Script for building CLEWs models