



## *How Delayed Learning about Climate Uncertainty Impacts Decarbonization Investment Strategies*

*Second Submission: RR\_WLD\_2024\_106*

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This review verifies the reproducibility of the exhibits included in the paper “*How Delayed Learning about Climate Uncertainty Impacts Decarbonization Investment Strategies*”.

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### *Main findings*

- The code was successfully executed on a new computer after:
  1. Setting the environment.
  2. Creating an account and Getting the Gurobi Academic License [here](#)
  3. Downloading Gurobi optimization [here](#)
  4. Running in bash script by script.
- The output demonstrates consistent stability across multiple runs. Specifically, executing the code two times consecutively yielded identical results.
- The code takes approximately 4 hours to run.
- We conducted our reproducibility analysis using the updated version of the paper provided by the authors on Monday, April 22nd. The published version of the paper is available at [this link](#).
- Every exhibit has been reproduced accurately.
- **Reproducibility Summary:**
  - **Data:** All data sources are publicly available and included in the reproducibility package.
  - **Code:** All code files are included in the package.
  - **Outputs:** All outputs are generated by code included in the reproducibility package.
  - **Reproducibility verification:** Reviewers had access to the same materials in the public reproducibility package.

## *List of exhibits and reproducibility status*

### **Results in the Main Section of the Paper**

- **Table 1** Does not show analysis results.
- **Figure 1** **Reproduced**. Reviewed with and without gurobi.(mac-cal)
- **Figure 2** **Reproduced**. Figure: ar6-pfig-value-of-learning-quadbox)
- **Figure 3** **Reproduced**. Figure: ar6-total-cost-ind-cutoff
- **Figure 4** **Reproduced**. Figure: ar6-sec-inv-eff-lt.
- **Figure 5** **Reproduced**. Average carbon price is a dotted line in code-produced outputs vs a star in the output shown in the paper. the dotted line and the star are shown the same place so this does not jeopardize reproducibility. Figure: carbon-price-dists-data-15.
- **Figure 6** **Reproduced**. Figure: ar6bs-pfig-value-of-learning-duobox-withbs.
- **Figure 7** **Reproduced**. Figure: t15-inv-base-rec-comparision-cost-secs-withbs.
- **Figure 8** **Reproduced**. Figure: ar6emis-pfig-value-of-learning-quadbox.
- **Figure 9** **Reproduced**. Figure: ar6emis-total-cost-ind-cutoff-2030.
- **Table 2** Does not show analysis results.
- **Figure 10** **Reproduced**. Figure: ar6hi-pfig-value-of-learning-quadbox.
- **Table 3** Does not show analysis results.
- **Figure 11** **Reproduced**. Figure: ar6hi-total-cost-ind-cutoff-2030.
- **Figure 12** **Reproduced**. Figure: ar6pow-pfig-value-of-learning-quadbox.
- **Figure 13** **Reproduced**. Figure: ar6pow-total-cost-ind-cutoff-2030.

### *Reproduction Environment*

- Paper exhibits were reproduced in a computer with the following specifications:
  - OS: Windows 11 Enterprise
  - Processor: Intel(R) Core(TM) i5-1145G7 CPU @ 2.60GHz
  - Memory available: 15.7 GB
  - Software version: Python version 3.11