General Instructions

*To run the BPA financial model:*

1. Download CAPOW electricity demand and price data along with hydropower generation. This is available at <https://zenodo.org/records/10565800>
2. BPA\_net\_rev\_func.py hold the entire BPA financial model script. Initial starting conditions include potential customer reductions (set to 0 for this paper), the name of the output file, the option to save an excel file with outputs (set to True), the year of starting conditions used (set to the last 5 years’ average), the option for an expanding line of credit (versus static), the percentage of positive net revenues returned to the reserve fund, the percentage of positive net revenues used to repay the line of credit, the time horizon for ensembles, the need to drop “bad” years from the CAPOW dataset (manually chosen based on prior CAPOW runs), and the sequence for shuffling the CAPOW data to produce a longer timeseries.
3. The script with the function includes a sample run, but input parameters can be adjusted according to the user’s desires.

Reproducing Figures and Tables

*Some of the figures have been edited offline (e.g., improving legend/legibility) but the substance of the images can be reproduced by:*

**Figures.** Use the “all\_plots\_final.py” script in order to reproduce figures and tables

* Figure 1 is a map created in ArcGIS Online
* Figure 2 is a conceptual flowchart created using PowerPoint
* Figures 3-7 are automatically reproduced from the script once the results files from the BPA financial model are read in
* Aesthetics (label sizes, locations) were edited in Adobe Illustrator

**Tables**

* Table 1 describes each strategy
* Tables 2 and 3 are automatically reproduced from the script once the results files from the BPA financial model are read in

**Supplementary Materials**

* Table 1 shows the fixed starting values. These are available in “net\_rev\_data.xlsx” in the Zenodo repository: <https://zenodo.org/records/10565800>
* Figure 2 is a conceptual figure designed in PowerPoint
* Figures 1 and 3 can be reproduced in “sm\_figures\_tables\_final.py”
  1. Some labelling/aesthetics are edited in Adobe Illustrator
* The values found in Table 2 can be reproduced in two ways:
  1. Running “all\_plots\_final.py” and changing the discount rate to 0 and 5. The values for Table 3 will be saved
  2. Running sm\_figures\_tables\_final.py and reading in the prepared output table from “all\_plots\_final.py”