

MEP\_calculate.m

Input: <year>.mat, depth\_domain.mat

Output: Save monthly energy output (MEP\_grid) to MEP<year>.mat, each year is an independent file

MEP\_combine.m

Input: MEP<year>.mat

Output: A single file including 6 years of monthly energy output (MEP), filename is MEP.mat

pa\_preprocess.m

Input: MEP.mat, 2009result.mat

Output: Figure 3 (coefficient of correlation vs. distance) and Figure A (in the Appendix, frequency vs. distance).

pa.m

This script runs the portfolio optimization as a continuous quadratic programming (QP) problem.

Input: MEP.mat, depth\_domain.mat, 2009result.mat

Output: A figure showing CF vs.  $\sigma^2$ .

pa\_miqp.m

This script runs the portfolio optimization as a mixed integer quadratic programming (MIQP) problem.

Input: MEP.mat, depth\_domain.mat, 2009result.mat, <year>result.mat if run 6-site test case

Output: Due to computational complexity, this model is never solved and a two-stage simplified version is solved instead.

pa\_2step.m

This script runs the portfolio optimization as a two-stage problem, the first stage is a continuous linear programming problem (LP) and the second step is a mixed integer quadratic programming (MIQP) problem.

Input: MEP.mat, depth\_domain.mat, 2009result.mat



