Replication Instructions for:

"Climate Policy and Resource Extraction with Variable Markups and Imperfect Substitutes",

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This document describes the replication files to reproduce the results presented in WEB Appendix H and J.

1 Replication Instructions for WEB Appendix H

The folder named "Replication Files - Appendix H" includes the required materials to replicate the empirical results on substitution elasticity in WEB Appendix H. The analysis is performed with STATA 16. The regression table can be obtained by executing the analysis.do file.

The do-files are self explanatory and refer directly to the materials in the text. They produce and save the regression table in Appendix H, and can be viewed following the execution of the do file. The table is also saved as a ".tab" file in the Results folder. The variable labels are self-explanatory and the naming of the generated variables closely follows the notation in the paper.

The replication code uses the stata data file "data.dta". The data description and construction of the variables are detailed in Appendix H. The final dataset is based on data from two sources: (i) The resource prices are from the Energy Prices and Taxes Database of International Energy Agency (IEA). (ii) The data on gross energy use is from the Environmental Accounts of the World Input-Output Database (WIOD).[1] The second dataset is publicly available. However, using the IEA dataset requires a license and its dissemination

[1] The details are provided in Appendix H.

is not allowed. Therefore, we set the price variable to missing. It can be obtained with a subscription at the IEA website. Appendix H details how we process this dataset and merge it with the WIOD dataset.

2 Replication Instructions for WEB Appendix J

The file named "Replication Files - Appendix J" consists of the Matlab routines to calibrate the general equilibrium model in Web Appendix J and reproduce Tables J.1 and J.2. The variable names are in line with the ones used in the text and are self-explanatory.

The execution of the file calibrationGE.m first computes the initial values of γ and p_1^x for each market structure and the choices of $\tilde{\beta}$ and ξ using function resourcePopt_GE. Then, it calculates the leakage rate after a 10 percent rise in the substitute productivity for the set of parameters found in the previous step using function resourcePopt_GEP.

In order to obtain the leakage rates for the variable markup (perfect competition) case in Table J.1, line 27 (line 28) of the files resourcePopt_GE.m and resourcePopt_GEP.m should be muted. The matrix epsNPS stacks the values of σ, $\varepsilon_{a2}^{q_1}$, γ, and p_1^x. Table J.2 includes γ, and p_1^x values for $\sigma = 1.5$.

For $\tilde{\beta} = 0.99$, "beta" is set to 0.79 and for $\tilde{\beta} = 0.95$, "beta" is set to 0.29.