

APPENDIX 10-A. USER INSTRUCTIONS FOR NIA SPREADSHEET MODEL

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APPENDIX 10-A. USER INSTRUCTIONS FOR NIA SPREADSHEET MODEL

10-A.1 USER INSTRUCTIONS

The results obtained in this analysis can be examined and reproduced using the Microsoft Excel spreadsheets accessible on the Internet from DOE's Heating Products Rulemaking page: http://www.eere.energy.gov/buildings/appliance_standards/. From that page, follow the links to the NOPR phase and then to the Analytical Tools.

10-A.2 STARTUP

DOE named the spreadsheets for the product classes and subgroup analysis if applicable. The spreadsheets enable users to perform National Impact Analysis (NIA) of residential water heaters, direct heating equipment and pool heaters. A separate spreadsheet exists for each of the products. Table 10-A.2.1 lists all national impact analysis spreadsheets used in this analysis.

Table 10-A.2.1 List of National Impact Analysis Spreadsheets

Filename	Description
NIA_WH.xlsm	Water Heater Products
NIA_DHE.xlsx	DHE Products
NIA_PH.xlsx	Pool Heaters

To examine the spreadsheets, DOE assumes that the user has access to a personal computer with a hardware configuration capable of running Windows NT/2000/XP. The Heating Products NIA spreadsheets require Microsoft Excel 2003 or later installed under the Windows operating system.

10-A.3 DESCRIPTION OF NATIONAL IMPACT ANALYSIS WORKSHEETS

The NIA spreadsheets perform calculations to forecast the change in national energy use and net present value of financial impacts due to a revised energy conservation standard. The energy use and associated costs for a given standard are determined by first calculating the shipments and then by calculating the energy use and costs for all heating products shipped under that standard. The differences between the standards and base case can then be compared and the overall energy savings and net present values determined. The NIA spreadsheets (for Water Heater) consist of the following worksheets:

National Impacts Summary	Tables and Charts of Primary Energy Savings and economic Impacts for All Product Classes
	This sheet allows the user to select from a variety of parameters to define the scenario for which they wish to calculate the NES and NPV. Parameters include the national discount rate, the market penetration growth for Instantaneous Gas Water Heater, the fuel switching scenario, the efficiency scenario in the base case
Base Case Consumption	Calculation of Base Case Primary Energy Consumption for all Product Classes

NIA GSWH	Calculation of Primary Energy Savings and economic Impacts for Gas Storage Water Heater
NIA ESWH	Calculation of Primary Energy Savings and economic Impacts for Electric Storage Water Heaters
NIA OSHW	Calculation of Primary Energy Savings and economic Impacts for Oil Storage Water Heater
NIA GIWH	Calculation of Primary Energy Savings and economic Impacts for Gas Instantaneous Water Heater
Shipments Forecast	Forecast of Shipments for all Product Classes in the base case, and without fuel switching effects
Fuel Switching Shipments	Forecast of Shipments for Product Classes affected by fuel switching
New Housing Market Shares	Historical Data and Forecast of Market Shares in New Housing
Historical Market Shares Data	Historical Heating Fuel and Equipment Data for New Homes
LCC Inputs	Design Option Input Data: Associated Costs and Unit Energy Consumption
GSWH-Efficiency Trends	Forecast of Market-Weighted Energy Efficiency for Gas Storage Water Heaters
ESWH-Efficiency Trends	Forecast of Market-Weighted Energy Efficiency for Electric Storage Water Heaters
Retirement Function	Probability Function Determining Replacement of Equipment
New Housing Forecast	Forecast of New Housing
Energy Prices and Site to Source	Forecasts of Energy Prices and Site-Source Conversion Factors

10-A.4 BASIC INSTRUCTIONS FOR OPERATING THE NATIONAL IMPACT ANALYSIS SPREADSHEETS

Basic instructions for operating the NIA spreadsheets are as follows:

Once the NIA spreadsheet file has been downloaded from the Web, open the file using Excel. Click “Enable Macro” when prompted and then click on the tab for the worksheet National Impacts Summary Analysis.

1. Use Excel's View/Zoom commands at the top menu bar to change the size of the display to make it fit your monitor.
2. The user can change the parameters under the title “National Impacts Summary”. The default parameters are:

- a. Discount Rate: Set to 7 percent. To change value, click on cell C5 and interchange value (7 percent or 3 percent).
- b. Current Year: Set to 2013 (DHE and pool heaters) or 2015 (for water heaters). To change value, click on cell C6 and interchange to desired year.
- c. Economic Growth: Set to Reference Case. To change value, use the drop-down arrow and select the desired level (Reference Case, Low Economic Growth or High Economic Growth).
- d. Fuel Switching: Set to “On”. To not account for fuel-switching, change this value to “Off” by using the drop-down arrow. (Water Heater NIA spreadsheet only.)
- e. Instantaneous Water Heater Market Share: Set to Reference Case. To change value, use the drop-down arrow and select the desired level (Reference Case, Low or High). (Water Heater NIA spreadsheet only.)

The results are automatically updated and are reported in the source energy savings matrix, net present value matrix, summary table for each product class and charts of national impacts for each product class.