

PACKAGE ID - 000557IPCAT01 EPSIM1.0

KWIC TITLE - Energy Policy Socioeconomic Impact Model

AUTHORS - Butler, J.G.
Argonne National Lab., IL (United States)

Poyer, D.A.
Argonne National Lab., IL (United States)

LIMITATION CODE -UNL **AUDIENCE CODE** - UNL

COMPLETION DATE - 05/12/1993 **PUBLICATION DATE** - 05/12/1993

DESCRIPTION - Econometric model simulates consumer demand response to residential demand-side management programs and two-part tariff electricity rate designs and assesses their economic impact on various population groups.

PACKAGE CONTENTS - Media Directory; User's Guide; Media Includes Executable Module, Batch File Used for Installation, Self Extracting Archive;

SOURCE CODE INCLUDED? - No

MEDIA QUANTITY - 1 5.25 Diskette

METHOD OF SOLUTION - The program incorporates discrete-choice appliance share models for electric cooking, space and water heating, and air-conditioning and a budget-constrained, two-stage conditional demand model. The models were estimated with data obtained from the Energy Information Administration's Residential Energy Consumption Surveys. The program runs the estimated models against a database containing relevant climatic, housing, and demographic information for 1606 sample households. The basic model can be accessed through either of two user interfaces: demand-side management (DSM) or electric utility rate design (URD). With the URD interface the user supplies input values for a two-part electricity tariff and the utility's marginal production cost. The program then generates the resulting change in electricity demand and expenditures for each household. The results are displayed as cumulative distributions of compensating variation by population group. With the DSM interface the user supplies input values representing the projected engineering efficiencies of the DSM program, the rate increase needed to pay for the DSM program, the participation rates of various user-defined segments of the population, and type of output desired. The DSM module can assess both electric and non-electric DSM programs, as well as the cross-effects of a DSM program directed at one fuel type on the other fuel type.

COMPUTER - IBM PC/AT

OPERATING SYSTEMS - MS-DOS 3.3 or later

PACKAGE ID - 000557IPCAT01 EPSIM1.0

PROGRAMMING LANGUAGES - FoxPro

SOFTWARE LIMITATIONS - The database is currently limited to Midwest households.

SOURCE CODE AVAILABLE (Y/N) - N

UNIQUE FEATURES - Provides a means to assess the differential economic impact on minority and poor households of various gas and electric demand side management programs and electric utility rate design proposals using a method that takes into account the consumer demand response to changing prices.

RELATED SOFTWARE - A run-time version of FoxPro 2.0 is supplied with the program as is a Quattro Pro spreadsheet template for graphing the cumulative distributions of outcomes generated by EPSIM.

OTHER PROG/OPER SYS INFO - The proprietary spreadsheet program Quattro Pro Version 1.0 required to drive the templates is not included with the EPSIM package. NO SOURCE CODE

HARDWARE REQS - A 1.2MB or 1.44 MB floppy drive is needed to install EPSIM. A minimum system for operating the program is an 80286 CPU with 640K RAM, hard disk with at least 2 MB free space, and EGA color graphics monitor. Much better is an 80386 or 80486 CPU, with clock speed of at least 25 MHz, 1 MB LIM 4.0 expanded memory, VGA monitor, and laser printer (for printing graphics output).

TIME REQUIREMENTS - 5 minutes per run for an 80286 CPU; 20 seconds per run for an 80486/50MHz CPU.

REFERENCES - J.G. Butler and D.A. Poyer, User's Guide for the Energy Policy Socioeconomic Impact Model Version 1.0, May 1993\ D.A. Poyer and J.G. Butler, User's Guide for Minority Utility Rate Design Assessment Model (MURDAM), January 1993; A. Deaton and J. Muellbauer, Economics and Consumer Behavior, Cambridge, England, Cambridge University Press, 1980; A. Philips, Applied Consumption Analysis, Amsterdam Netherlands, North Holland Publishing Company, 1983; E. Zajac, Fairness or Efficiency, An Introduction to Public Utility Pricing, Cambridge MA, Ballinger Publishing Company, 1978.

ABSTRACT STATUS - Submitted May 1993.

SUBJECT CLASS CODE - MN

KEYWORDS -

COMPUTER PROGRAM DOCUMENTATION
E CODES
COMPUTERIZED SIMULATION
DATA ANALYSIS
DATA BASE MANAGEMENT

PACKAGE ID - 000557IPCAT01 EPSIM1.0

ECONOMIC ANALYSIS
ELECTRIC UTILITIES
ENERGY ANALYSIS
ENERGY CONSUMPTION
ENERGY DEMAND
ENERGY MODELS
ENERGY POLICY
MARGINAL-COST PRICING
PERSONAL COMPUTERS
REGRESSION ANALYSIS
REGIONAL ANALYSIS
RESIDENTIAL SECTOR
STATISTICAL MODELS
SUPPLY AND DEMAND
MINORITY GROUPS
RATE STRUCTURE
SOCIAL IMPACT
SOCIO-ECONOMIC FACTORS

EDB SUBJECT CATEGORIES -
990200 290200 296000

SPONSOR - DOE/MI

PACKAGE TYPE - AS - IS