

**PACKAGE ID** - 000664IBMPC00 REPCO

**KWIC TITLE** - Replacement Costs of Crude Oil

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

**COMPLETION DATE** - 05/31/1989   **PUBLICATION DATE** - 05/31/1989

**DESCRIPTION** - REPCO forecasts the replacement cost of domestic crude oil for seven onshore regions and 14 offshore regions. The replacement cost of domestic crude oil is the constant or leveled selling price that will recover the full expenses of exploration, development, and production with a reasonable return on capital.

**PACKAGE CONTENTS** - Media D9irectory; Software Abstract; DOE/FE/30014-1 (VOL.1); DOE/FE/30014-1 (VOL.2); Media Includes Source Code, Executable, Sample Problem Input and Output;

**SOURCE CODE INCLUDED?** - Yes

**MEDIA QUANTITY** - 2 5.25 Diskettes

**METHOD OF SOLUTION** - An integrating model is used to determine replacement costs. The model begins by calculating future annual production from current proved and inferred reserves to simulate depletion of known resources; constant percentage decline methodology is used to perform this analysis. The quantity which must be produced from new discoveries or enhanced oil recovery is determined for each year by subtracting known resource production from the user-specified value for desired domestic production. This requirement is met by using a least cost algorithm. The least cost algorithm references each of the price-supply curves to find the lowest cost reserve additions that will meet the demand subject to constraints. These reserve additions are sequenced, subject to lags, to yield the appropriate amount of production in the given year. An accounting routine keeps track of drilling, reserve additions, and production while debiting the price-supply curves. The replacement cost in any given year is the cost of the last new increment of reserve that is required to meet the specific level of domestic oil production.

**COMPUTER** - IBM PC

**OPERATING SYSTEMS** - MS-DOS

**PROGRAMMING LANGUAGES** - Microsoft FORTRAN

**SOURCE CODE AVAILABLE (Y/N)** - Y

**RELATED SOFTWARE** - RCIP, the Replacement Cost Integration Program, integrates output from AEM and REPCO. RCIP-RR, the Reserve

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**RELATED SOFTWARE - (CONT)** Replacement version of RCIP, forecasts the future cost of domestic oil in the United States based on the assumption that oil is discovered at the same rate that it is produced and consumed.

**TIME REQUIREMENTS** - A typical onshore problem requires 6 minutes, whereas an offshore problem requires 30 minutes.

**REFERENCES** - V.A. Kuuskraa, F. Morra, Jr., and J.R. Einstein, Replacement Costs of Domestic Crude Oil, Final Report, DOE/FE/30014-1 (Vol.1), July 1985; Lewin and Associates, Replacement Costs of Domestic Crude Oil, Supply Analysis Methodology, DOE/FE/30014-1 (Vol.2); REPCO, NESC No. 9476, REPCO Flexible Disk Cartridge Descriptions, National Energy Software Center Note.

**ABSTRACT STATUS** - Submitted May 1985.

**SUBJECT CLASS CODE** - D

**KEYWORDS** -

COMPUTER PROGRAM DOCUMENTATION  
R CODES  
FORECASTING  
PETROLEUM  
DOMESTIC SUPPLIES  
COST  
RESOURCE ASSESSMENT  
COST RECOVERY

**EDB SUBJECT CATEGORIES** -  
990200 020700

**SPONSOR** - DOE/FE

**PACKAGE TYPE** - AS - IS