

# Contents

	<i>Page</i>
<b>Part I: Introduction.....</b>	<b>1</b>
Overview . . . . .	1
Endnotes for Part I . . . . .	7
<b>Part II: Analytical Structure . . . . .</b>	<b>9</b>
Definitions and Assumptions . . . . .	9
The OTA Model. . . . .	12
Endnotes for Part II . . . . .	14
<b>Part III: Recent Changes in Energy Use . . . . .</b>	<b>17</b>
Tracing the Change in Energy Use.. . . .	17
Summary of the Change in Energy Use Since 1972 . . . . .	35
Endnotes for Part III . . . . .	35
<b>Part IV: Energy Use in the Recent Past and in the Future... . . . .</b>	<b>41</b>
Overview . . . . .	41
Changes in Energy Use From 1985 to 1988..... . . . .	42
Speculation About Energy Use in the Future. . . . .	46
Conclusion . . . . .	48
Endnotes for Part IV . . . . .	50
<b>Part V: Appendix . . . . .</b>	<b>53</b>
Methodology . . . . .	53
Data Sources . . . . .	57
Strengths and Weaknesses of the OTA Energy Model . . . . .	60
Endnotes for Part V . . . . .	63

## *Boxes*

<i>Box</i>	<i>Page</i>
A. Terminology . . . . .	10
B. Energy Types . . . . .	12
C. The OTA Energy Model . . . . .	13
D. Correspondence Between Conventional Energy Categories and OTA Energy Model Categories . . . . .	15
E. The World Car . . . . .	25
F. An Example of the Deflation Process: Computers . . . . .	34
G. Input-Output Analyst . . . . .	54

## *Figures*

<i>Figure</i>	<i>Page</i>
1. Index of U.S. Energy Use, GDP, and Energy Intensity . . . . .	2
2. Changes in Energy Use, 1972-85 . . . . .	4
3. Major Categories' Share of Merchandise Imports . . . . .	5
4. U.S. Energy Use by Type . . . . .	14
5. Changes in U.S. Energy Consumption, 1963-85 . . . . .	17
6. Changes in U.S. Energy Consumption, 1972-85. . . . .	17
7. Changes in U.S. Energy Consumption Due to Spending, 1963-85 . . . . .	19
8. Changes in U.S. Energy Consumption Due to Spending, 1972-85 . . . . .	19
9. Changes in U.S. Energy Use Due to Spending on Different Product Groups . . . . .	21
10. Energy Use and Changes in Energy Use Associated With Spending by Product Groups . . . . .	22



11. Direct and Indirect Energy Use by Households and Government Due to Spending, 1963-85 ... ..	23
12. Direct and Indirect Energy Use Associated With Imports and Exports .....	26
13. Changes in U.S. Energy Use Due to changes introduction Recipe, 1963-85 .....	28
14. Changes in U.S. Energy Use Due to Changes in Production Recipe, 1972-85 .....	28
15. Ranking of Primary Energy Intensity of Selected Products .....	31
16. Changes in Energy Consumption, 1972-85 .....	36
17. Reduction in Energy Use, 1972-85 .....	37
18. Composite Fossil Fuel Prices .....	46
19. Implicit Price Paid per Btu of Refined Petroleum .....	62

### *Tables*

<i>Table</i>	<i>Page</i>
1. Changes in Primary Energy Use Due to Selected Factors, 1972-85 .....	4
2. Changes in Primary Energy Use From 1972 to 1985 by Energy Type Due to Major Factors .....	18
3. Changes in Primary Energy Use From 1972 to 1985 by Energy Type Due to Spending .....	19
4. Changes in Primary Energy Use From 1972 to 1985 by Energy Type Due to Spending on Different Products .....	23
5. Changes in Primary Energy Use From 1972 to 1985 by Energy Type Due to Sources of Spending .....	24
6. Changes in Primary Energy Use From 1972 to 1985 by Energy Type Due to Production Recipe Changes .....	29
7. Changes in Primary Energy Use From 1972 to 1985 by Energy Type Due to Energy Production Recipe Changes .....	30
8. <i>Changes in Primary</i> Energy Use From 1972 to 1985 by Energy Type Due to Nonenergy Production Recipe Changes .....	31
9. Primary Energy Intensities by Commodity for Selected Years .....	32
10. BLS Projections of GNP Growth Rates and Unemployment Rates Under Scenarios of Low-, Moderate-, and High-Economic Growth .....	47
11. BLS Projections of Output by Major Industry Division Under a Scenario of Moderate Economic Growth .....	47
12. Commercially Available Technologies That Improve Energy Efficiency .....	49
13. Primary Energy Conversion Ratios .....	54
14. Comparison of OTA Energy Consumption Estimates With Estimates Published by the Department of Energy .....	55
15. OTA Energy Model Data Sources and Coverage .....	57
16. Comparison of OTA GNP Estimates With Estimates Published by the Bureau of Economic Analysis .....	59
17. Listing of Broad Sectors and Individual Industries/Commodities in the OTA Energy Model .....	60