

Contents

<i>Obituary</i>	v
<i>Acknowledgements</i>	ix
<i>Preface</i>	xi
1. The Energy Crisis	1
1.1. Introduction	1
1.2. Energy Conservation	8
1.3. World Energy Consumption	12
1.4. Wood	15
References	15
2. Non-Renewable Energy Sources	17
2.1. Introduction	17
2.2. Coal	17
2.3. Oil	21
2.4. Natural Gas	25
References	26
3. Renewable Energy Sources	27
3.1. Introduction	27
3.2. Hydropower	28
3.3. Wind	29
3.4. Solar	34
3.5. Tidal	36
3.6. Wave	37
3.7. Geothermal	39

3.8. Ocean Thermal	40
3.9. Biomass	40
3.10. Hydrogen	43
3.11. Costs	43
3.12. Conclusion	47
References	48
4. Nuclear Power	49
4.1. Energy from the Atom	49
4.2. Nuclear Reactors	50
4.3. The Capacity of Nuclear Power	52
4.4. Reliability	55
4.5. Nuclear Radiations	55
4.6. Nuclear Waste	68
4.7. New Nuclear Reactors	71
4.8. Fusion Reactors	76
References	79
5. The Safety of Energy Sources	81
5.1. Introduction	81
5.2. Comparative Safety	81
References	86
6. Pollution of the Environment	87
6.1. Introduction	87
6.2. Pollution of the Land	87
6.3. Pollution of the Atmosphere	89
6.4. Pollution of the Sea	95
6.5. Radioactive Pollution	96
6.6. The Greens	97
References	97
7. Climate Change	99
7.1. Introduction	99
7.2. Climate as a Determining Feature of Civilisation	100
7.3. The Reality of Climate Change	102
7.4. The Greenhouse Effect and Global Warming	105
7.5. The Effects of Global Warming and Climate Change	108

7.6. Catastrophic Climate Change	114
7.7. Conclusion	116
References	117
8. Politics, Psychology and Education	119
8.1. Introduction	119
8.2. The Problems of Democratic Societies	121
8.3. Nuclear Power and World Peace	123
8.4. Energy Sustainability	126
8.5. The Opposition to Nuclear Power	127
8.6. Psychology	136
8.7. Education	144
References	151
9. The Needs of the Developing Countries	153
9.1. Introduction	153
9.2. Economic Problems	154
9.3. Political Problems	157
9.4. Psychological Problems	158
10. Moral Problems and Responses	159
10.1. Introduction	159
10.2. Industrial Changes	160
10.3. The Contribution of the Churches	162
10.4. General Assessment of Church Statements on Nuclear Issues	177
10.5. Misleading and Irresponsible Statements	179
References	184
Appendix 1: Energy Units	187
Appendix 2: Nuclear Radiation Units	189
Index	191