

# Contents

<b>1</b>	<b>The Future of Energy</b>	<b>1</b>
	What Sources of Energy Are Available and How Much Do We Need?	3
	References	9
<b>2</b>	<b>What Is Nuclear <i>Fusion</i>?</b>	<b>11</b>
	Hydrogen, Deuterium, and Tritium	16
	References	18
<b>3</b>	<b>A Brief History of ITER</b>	<b>19</b>
	A Scientific Slowdown	22
	The Golden Age of Fusion	26
	The “Fireside” Summit	28
	The Birth of ITER	30
	Exit the United States	32
	References	34
<b>4</b>	<b>Why in France?</b>	<b>35</b>
	The Impasse	37
	ITER in Canada?	41
	High Technology and High Diplomacy	44
	“All United in Cadarache”	48
	References	54

<b>5</b>	<b>Building a Gigantic Machine</b>	55
	A 5200-Tonne Chamber	59
	High-Tech Bricks	62
	The World's Largest Magnets	64
	The Fusion Ashtray	69
	A Giant Refrigerator	70
	A Pharaonic Worksite	72
	Constructions Worth EUR2 Billion	73
	A New Scientific Village	75
	References	78
<b>6</b>	<b>A Machine Manufactured in 35 Countries</b>	79
	A High-Tech Meccano	81
	The World's Biggest Puzzle	83
	The Assembly Heart	85
	Transporting an Airbus A380 on the Road	87
	A Huge Logistical Challenge	89
	A Nerve Center Close to Marseille	92
	Reference	94
<b>7</b>	<b>Those Who Are Against ITER</b>	95
	Scientific Criticisms	98
	Astrophysics and Flying Saucers	101
	False Claims and Miscommunication	103
	References	104
<b>8</b>	<b>Why So Many Delays and Cost Overruns?</b>	107
	"Concrete" Delays	109
	Poloidal Coils and Cooling Tower	110
	The Complexity Is "Built-in"	112
	How Much Will It Cost?	114
	First Plasma in 2025	115
	The ITER Budget Is "Peanuts"	117
	References	119
<b>9</b>	<b>How to Manage Such a Complex Program</b>	121
	A New Director General	123
	"The Project Progresses Alone"	126

	ITER, Ellul, and Galbraith	129
	A Political Project	130
	Compensation and Benefits	132
	References	134
<b>10</b>	<b>Is ITER Really Safe and Clean?</b>	137
	Introduction	138
	What Kind of Waste?	141
	On Safe Grounds	142
	Tritium and Safety	143
	Natural Hazards	145
	References	148
<b>11</b>	<b>ITER Is Heating up the French Economy</b>	149
	No Accommodation for ITER	151
	Contracts Worth EUR3.7 Billion	153
	Who Works for ITER?	156
	Workers Under Control	158
	Calls for Tenders and Subcontractors	159
	References	160
<b>12</b>	<b>Will Fusion Become Commercial?</b>	161
	How to Maximize the Gain Factor?	163
	After ITER	166
	References	170
<b>13</b>	<b>Chinese Citizens in Provence</b>	171
	Communication, Culture, and Policy	174
	A Scientific Tower of Babel	176
	The Provence Cliché	177
	References	179
<b>14</b>	<b>How to Communicate with the Public About a High-Tech Project?</b>	181
	A Credible Mediascientific Dialog	183
	Public Debates	185
	Why Is ITER Invisible?	186
	References	187

<b>15</b>	<b>Quest for the Holy Grail of Fusion</b>	189
	Lasers for Fusion	191
	Fusion Billionaires	193
	References	197
<b>16</b>	<b>Beyond Technology Diplomacy</b>	199
	We Would Be Crazy not to Build ITER	201
	ITER Will Be a Historic Step	203
	ITER, Technological Integrator	205
	References	209
	<b>Bibliography</b>	211
	<b>Index</b>	213