Contents

List of figures and tables		vii
Foreword		ix
Acknowledgen	nents	xviii
List of acrony	ems and abbreviations	xix
Scenario	From fossil fuels to solar power:	
	transforming the global economy	1
	The power of the pyromaniacs	5
	Fossil resource dependency: how economic	
	processes have come adrift from their	
	environmental and social bases	10
	Global competition in place of global	
	environmental policy	12
	The origins of the fossil-fuel economy	14
	Accelerating change and global displacement	I 5
	Business unbound: cutting loose from nature	
	and society	19
	Reconnecting business and society through	
	solar resources	2 I
	From the political to the economic solar	
	manifesto	25
	PART I	
	CAPTIVITY OR LIBERATION: FOSSIL FUEL AND	
	SOLAR SUPPLY CHAINS COMPARED	
Chapter I	Ensnared by fossil supply chains	37
	Long supply chains due to limited resources:	- •
	the logic of globalization	37
	Fossil resource supply chains and industrial	- •
	concentration: market destruction through	
	market mechanisms	44

	The spider in the web: the growing influence of Big Energy and Big Mining The convergence of power: networking, supercartels and the disempowerment of democratic institutions	49 56
Chapter 2	Exploiting solar resources: the new political and economic freedom The solar supply chain The economic logic of the solar energy supply chain Solar power: technology without technocracy	62 66 76 82
	PART II THE PATHOLOGICAL POLITICS OF FOSSIL RESOURCES	02
Chapter 3	The 21st century writing on the wall: the political cost of fuel and resource conflict A world in denial: the disregard for limited	93
	reserves Dwindling reserves versus worldwide growth	94
	in demand	103
	Arming for the resource conflict Resource reserves, gunboat diplomacy and	105
	the moral bankruptcy of society	115
Chapter 4		
	chains	120
	The rise and fall of the fossil city The fossil resource trap closes on the	121
	developing world	128
Chapter 5	The mythology of fossil energy Figures of fancy: the inadequacy of	137
	conventional energy statistics	139
	The inadequacy of energy forecasts The profligate subsidies for conventional	143
	energy systems	149

	The feigned productivity of nuclear and	
	fossil energy	153
	Ideology and the physics of energy	159
	The fear of the small scale	166
	PART III	
	THROWING OFF THE FOSSIL SUPPLY CHAINS	
Chapter 6	Energy beyond the grid	173
•	Wireless power: the potential of solar	
	stand-alone and stand-by technologies	174
	The potential for natural and technological	
	solar energy storage	182
	Synergistic applications, cross-substitution	
	and all-load micro-power plants	195
	The solar technology revolution and the	- / /
	solar information society	201
Chapter 7	The untapped wealth of solar resources	206
, ,	The higher productivity of biological	
	materials	209
		218
	Replacing fossil with solar resources	210
	Solar materials: from agricultural	220
	monocultures to polycultures	220
	The real biotechnology: materials science,	225
	not genetic engineering	225
Chapter 8	The profitability of renewable energy and	
_	resources	231
	Whose costs? Why solar and fossil resources	
	cannot be compared on the basis of	
	economic efficiency calculations	233
	Cost avoidance: economical application of	
	solar resources in a nutshell	237

PART IV TOWARDS A SOLAR ECONOMY

Chapter 9	Exploiting solar energy	251
-	The role of capital allowances - and their	
	problems	253
	Tax-exempt status for solar resources:	
	overcoming the legitimacy crisis of	
	environmental taxation	256
	Possibilities and problems in the market for	
	green electricity	259
	Green suppliers and municipal	
	self-sufficiency	269
	Creative destruction in the energy industry	
	and the transformation of the resource	
	industry	276
	Hard roads to soft resources	280
Chapter 10	Regionalization of the global economy	
1	through solar resources	285
	Regionalization effects through solar	
	resources	288
	'Own implementation' versus 'joint	
	implementation': opportunities for the	
	developing world	292
	Regionalizing trade flows	296
	The sustainable economy: global technology	290
	markets, regional commodity markets	301
	- ,	308
	Trade not talk: beyond the energy industry	300
Chapter II	The visible hand of the sun, bluengint for a	
Chapter 11	The visible hand of the sun: blueprint for a solar world	312
	Forwards: towards the primary economy	316
	Work and the solar economy	320
	From the bounty of the sun to global	202
	economic prosperity	323
References		326
Index		341
		34'