

# Contents

<i>Preface</i>	<i>page</i> ix
<i>Acknowledgments</i>	xi
1 Introduction: The Challenge of Zero-Carbon Energy Transitions and National Security	1
1.1 Conceptual Background	5
1.2 A Small Country Perspective: Estonia, Finland, Norway, and Scotland as the Research Foci	8
1.3 Research Method and Materials	10
1.4 Contents of the Book	12

## **Part I Theoretical and Literature-Based Foundations**

2 Understanding Security in the Context of Sustainability Transitions	17
2.1 Sustainability Transitions Research: Key Conceptualizations	18
2.2 Conceptualizing the Basics of Security for Sustainability Transitions	25
2.3 Security in Transitions Research	31
3 Energy Security and Geopolitics of Energy Transition	35
3.1 Conceptualization and History of Energy Security Research	35
3.2 Geopolitics of Renewables	39
3.3 Energy Security in Europe	48
4 A Conceptual–Analytical Approach to Examining Security in Sustainability Transitions and Policy Interplay	52
4.1 Security as Part of the Sociotechnical Landscape for an Energy Regime	54

4.2	Policy Coherence at the Regime Level: Interplay of Energy Transition Policies with National Security and Defence Policies	58
4.3	Security in Change Processes: Niche Expansion and Regime Decline	63

## Part II Empirical Case Studies

5	Estonia: Long-Term Energy Independence and Oil Shale	69
5.1	Energy Regime	72
5.2	Security Regime	76
5.3	Perceptions of Russia as a Landscape Pressure at the Intersection of Energy and Security	79
5.4	Policy Coherence and Interplay	80
5.5	Niche Development, Regime (De)stabilization, and Positive and Negative Security	84
5.6	Concluding Remarks	92
6	Finland: Ambivalent Links between Energy and Security	94
6.1	Energy Regime	96
6.2	Security Regime	102
6.3	Perceptions of Russia as a Landscape Pressure at the Intersection of Energy and Security	103
6.4	Policy Coherence and Interplay	107
6.5	Niche Development, Regime (De)stabilization, and Positive and Negative Security	111
6.6	Concluding Remarks	117
7	Norway: Contradiction of Oil for Export and Fully Renewable Electricity Supply	119
7.1	Energy Regime	122
7.2	Security Regime	127
7.3	Perceptions of Russia as a Landscape Pressure at the Intersection of Energy and Security	128
7.4	Policy Coherence and Interplay	129
7.5	Niche Development, Regime Stabilization, and Positive and Negative Security	131
7.6	Concluding Remarks	138
8	Scotland: From Oil to Wind under a Devolved Government and New Pressures for UK Energy Security	141
8.1	Energy Regime	144

8.2 Security Regime	149
8.3 Perceptions of Russia as a Landscape Pressure at the Intersection of Energy and Security	151
8.4 Policy Coherence and Interplay	153
8.5 Niche Development, Regime Destabilization, and Positive and Negative Security	158
8.6 Concluding Remarks	160
<b>Part III Conclusions</b>	
9 Insights into Zero-Carbon Energy, Sustainability Transitions, and Security	165
9.1 Interplay between Energy, Security, and Defence Policies	165
9.2 Securitization and Politicization of Energy Transitions	169
9.3 Security Implications of Energy Transitions	170
9.4 Technological, Actor-Based, and Institutional Aspects	174
9.5 Further Insights for Sustainability Transition Studies	181
9.6 Final Remarks	183
<i>References</i>	187
<i>Index</i>	211

