

Preface

Energy issues and spatial planning become increasingly interwoven. The more we talk about sustainable energy systems, energy resource limitations or greenhouse gas reduction, and climate change mitigation, the more we move into the thicket of the jungle of interrelations between space and energy. This book is meant to provide the reader with a reliable compass but also with other necessary tools to find his way through this jungle and arrive at the other side of the thicket at practical planning solutions.

One of the vexing features of the link between energy and spatial planning is that it cuts not only across two of the most basic scientific concepts, space and energy, but puts very different actors with various backgrounds in the same boat. This is true on the scientific level, where integrated spatial and energy planning is almost synonymous with interdisciplinary. It requires expertise in spatial planning, energy, and grid engineering, but also in fields as far apart as agriculture and civil engineering. This variety of actors applies however to the planning process, too. Gone will be the times where the only principal players for energy systems will be big utilities, public authorities, and possibly developers and investors. In an area of dynamic technological progress in both energy provision and energy efficiency technologies, with ever-increasing possibilities for decentralized small-scale installations and “smart grids,” energy systems can become democratized. This makes planning processes arguably more complex as they become increasingly participatory. It makes them however certainly more interesting and challenging.

This increased complexity of the spatial planning process when energy issues become involved also requires a new quality for any tool used in this endeavor. Tools become means to facilitate the discourse between stakeholders. They have to provide scientific and technical rigor while allowing at the same time to accommodate different viewpoints and interests of stakeholders. It is not only the end result of a calculation or design that counts. Almost as important is the information about different aspects of complex spatial solutions for energy systems that

stakeholders can glean from using a tool. Tools must make hidden systemic links within energy systems transparent. They must also provide a graphic and understandable description of the behavior of energy systems within spatial contexts, so that stakeholders can base their decisions on their outcome. This means that as integrated spatial and energy planning becomes more systemic, so must the tools involved.

According to the systemic and interdisciplinary challenges of integrated spatial and energy planning, this book has been an interdisciplinary exercise. It combined authors with spatial planning as well as engineering backgrounds who had already a long tradition in jointly working in integrated spatial and energy planning projects in various settings. Besides providing different vantage points on integrated spatial and energy planning and fuse engineering as well as spatial planning expertise based on long cooperation, it is the practical experience in using tools in participatory planning processes that is important. The book is meant to provide practical guidance for integrated spatial and energy planning that requires guides who do have theoretical knowledge but can also report from experience.

The authors are therefore particularly grateful to those persons and institutions that allowed them to gain this experience in a number of interesting and challenging action research projects and for providing valuable feedback on the application of the tools described in this book. We want to thank the Austrian Climate and Energy Fund for supporting fundamental as well as applied research projects such as the project PlanVision and the development of the ELAS Calculator, as well as the establishment of the resource plan for the Mühlviertel region. The city of Freistadt has been a particularly valuable partner in many projects, some of them co-funded by the Austrian Climate and Energy Fund. Without that support and cooperation neither the Energy Zone Mapping could have been developed nor could the progress in Process Network Synthesis have been achieved that finally led to the development of RegiOpt.

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We hope that this book will help the reader to get new insight into integrated spatial and energy planning. We also hope that the theoretical framing, the planning principles, and the tools presented here will prove helpful in the challenge to create sustainable solutions that reduce the environmental impact from energy provision and provide secure and sufficient energy supply while reducing the long-term costs for energy services and infrastructure.

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Supporting Climate Protection and the Energy Turn with
Means of Spatial Planning

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