Cultural Landscapes of Energy

Constructing Histories of Power, Prosperity, and Decline in Europe

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Introduction

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Introduction

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In January 2023, more than 10,000 people came to Lützerath in the state of North Rhine-Westphalia in Germany to protest against the hamlet's imminent destruction. Like other recent protests against extractivism and large-scale energy infrastructure, the demonstrations in Lützerath were covered in the media across Europe, transforming the small settlement into a site of transnational activism. Almost 20 years earlier, the energy company RWE had initiated resettlement, court-ordered expropriation, and compensation of approximately 100 villagers to make way for the expansion of an open-cast lignite mine. Some of the residents had tried to avert the destruction of their homes, but Lützerath's fate had been sealed by a German Federal Constitutional Court ruling in 2013.[1] After several days of stand-off, the police cleared the protesters, and soon after, like hundreds of other localities in Germany during previous decades,[2] the hamlet was swallowed up by the open-cast mine to make way for energy production.

The timing of the destruction challenges the temporalities associated with the heritagisation of mining in the Ruhr district and the German government's coal phase-out plans. The last active colliery located around 70 km from Lützerath had closed in 2018, marking the end of a decades-long deindustrialisation process in the Ruhr district. Over the past few decades, this region has emerged internationally as a leading example of industrial heritage-making, with prominent images of redeveloped industrial remnants looking quite different from landscapes still undergoing extraction.[3] Moreover, just one month before the protests, the German federal government had adopted a law preponing the planned ending of lignite mining in North Rhine-Westphalia by eight years to 2030 and had committed to doubling the generation of renewable energy from wind power during this time.[4] Nonetheless, alongside the demolition of houses, the local church, and the clearance of trees in Lützerath, the energy company began to disassemble a wind farm situated adjacent to the hamlet to make way for lignite mining.[5] Thus, in what is now an open-cast mine—with future plans to transform it into a lake once coal extraction ends—the multiple layers of the history of this energy landscape were rendered visible for a brief moment (Figure 0.1).

This landscape is just one of many sites across Europe that have been impacted profoundly by the production of energy. The extraction of natural resources

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Figure 0.1 View of Lützerath where protesters had moved to a farm, holding out against the advancing excavator. Both the village and the wind park in the background were destroyed by the adjacent open-cast lignite mine soon after this picture was taken. Photograph by Dirk Jansen, 2022.

through coal mining, oil drilling, and peat production and the construction of large-scale infrastructure for electricity generation, such as dams, power plants, and wind farms, have shaped what we call 'cultural landscapes of energy' in this volume. Different histories ranging from an economic boom and promises of a prosperous future to sociocultural dislocation, loss, and ecological decline shape the understanding of these landscapes. Today these stories are largely told in the wake of the closure of mines and the dismantling of infrastructure, thus positioning them firmly in the past. However, as the example of Lützerath vividly illustrates, the past, present, and future of energy production is not a linear process. It generally involves different types of energy resources, both fossil fuels and renewables, simultaneously. Consequently, the process of energy transition is characterised not only by shutdowns, but also by deferral and new commissioned projects. Moreover, for the people interacting with these landscapes—workers, planners, residents, or visitors—the built environment of energy production is still an important part of their present-day experiences. In many places, the monostructural orientation towards energy production has had an enduring impact on the local society, reflected in outmigration and unemployment after these industries are shut down. Regional development initiatives have sought to counteract these tendencies by promoting other economic sectors, in particular tourism and leisure activities, which also actively draw on the past through heritagisation. Here service provision, souvenir design, museum exhibitions, and itineraries are all engaged in the construction of histories for the present and future of the affected landscapes.

In these places undergoing change, heritage is not just about history; it is also a future-making practice.[6] It evokes the past in order to serve present-day concerns, such as viable economic development, and to craft the desired future of sustainability and the achievement of net zero emissions. Region branding through heritage initiatives impacts processes of identity formation, be they centred on class, ethnicity, or gender, as industrial work cultures end with pit closures and new opportunities emerge in what has been termed the 'post-industrial society.'[7] Some regions are viewed as particularly successful examples in using their industrial heritage to project a future following deindustrialisation, such as the aforementioned Ruhr district in Western Germany.[8] 'Born on coal,'[9] as a popular Ruhr slogan states, regional heritage politics became a shared venture across the political spectrum through cooperation with energy companies for transforming the closed-down industrial infrastructure into new business, science, leisure, and industrial ventures in the 1990s.[10] Many more examples can be found across Europe where the cessation of coal and other fossil fuels extraction in the late twentieth century became an important part of the history written by these initiatives. Energy has thus been positioned in the past, seemingly detached from ongoing struggles over national energy security and global climate targets. The contributions in this volume clarify that heritage-making does not start after the industry has ended; rather, it is initiated along the way or at times even before the extraction of energy resources or the construction of energy infrastructure begins. This is particularly relevant for current debates on the energy transition from fossil fuels to renewables, achieving net zero emissions and mitigating the impacts of climate change.

This volume sheds light on tensions over the past in contemporary Europe, where energy production is again at the forefront of political debates in view of climate change, armed conflicts, and a renewed focus on environmental and social justice. Tying into research on 'the politics of heritage,'[11] it also provides new perspectives on how the past is mobilised in the present by different stakeholders as energy production is rearranged, extended, or even revived in response to shortages, addressing pressing economic, social, and environmental challenges. While most publications on energy, both in the past and present, deal with one particular energy resource, the focus on 'cultural landscapes of energy' in this volume enables us to bring together conflicting histories surrounding work, habitation, and leisure that are shared by these landscapes across different types of energy. Written by a multidisciplinary group of authors, the chapters position the stories of coal, oil, hydropower, and peat in the respective landscapes within a wider context of energy politics. They critically assess the past—and thereby the future—constructed for the regions in Europe located between the North Sea, the Alps, the Carpathian Mountains, and the Caspian Sea. Heritage-making can thus be analysed as an ongoing process involving competing narratives of gain and loss centring on the coexistence of various energy resources and the transition from one to another. In this setting, histories are constructed not only to make sense of lived experiences, deal with difficult pasts, and find solutions for environmental remediation but also to support future energy production policies. The energy sector is—and will

continue to be—a major contributor to economic development and employment in regions across Europe.

This introductory chapter outlines the volume's comparative framework across states and energy resources. By providing an overview of the processes shaping the 'cultural landscapes of energy' discussed in this volume, it situates them within current debates on industrial heritage, environmental and energy history, and energy transition. The first section of this chapter foregrounds the tensions between productive and destructive elements in the history of energy landscapes in Europe, tracing the emergence of a new 'landscape of power' in the twentieth century. The second section then examines practices of heritage-making in landscapes. While this body of scholarship is extensive, the discussion here focuses on (post-) industrial landscapes to highlight the distinctive traits of the 'cultural landscapes of energy.' Finally, the third section explains the structure of this volume, which is organised around the themes of creating, living with, and sharing landscapes.

How Energy Shapes Landscapes: Productive and Destructive Histories

Several researchers have noted that there was no energy *transition*, conceived in a narrow sense, but rather energy *additions*.[12] The use of older resources always continued, with additions of new sources of primary energy, thus leading to an overall increase in energy production. Therefore, what occurred was merely a shift in the proportions of different resources in the energy mix, with the overall required energy supply continuing to expand.[13] From the early twentieth century, with the advancing industrialisation of production and electrification of homes and workplaces, energy demands rose drastically. While energy production has a long history, particularly through the burning of biomass like wood or the use of hydropower, populations now began increasingly turning to fossil fuels. In ever-increasing quantities, coal fuelled railway and maritime transportation, and it fired new power plants, which generated electricity for both workplaces and private homes. Between the 1940s and 1970s, several technologies replaced coal with oil and gas that also ran the engines of vehicles in an age of increasing mobility by car and aeroplane.[14] The demand for fossil fuels extended far beyond energy production, thus boosting coal and oil extraction to ever greater degrees. For example, coal is used in steelmaking, and petrochemicals derived from oil are used to manufacture thousands of products that are part of our everyday lives.[15] The consumption of coal continued to increase even after its replacement by new technologies. Against this background, what may be considered the past in energy production continues in the present and extends into the future.

The production of energy reshaped societies, economies, and political governance and had a transformative effect on landscapes worldwide.[16] While these processes date back centuries, evidenced, for instance, in land clearing and water management, what emerged in the twentieth century was a new 'landscape of power' whose modernist infrastructure continues to shape popular images of energy heritage today.[17] This landscape comprised 'immense constructions of the oil refineries, the nuclear reactors and power stations, and, radiating from them, the

great latticed towers and overhead lines of the electricity grid, forming a network which covers the whole country.'[18] Notwithstanding general trends, the impact of energy production on a specific landscape largely depended on local geographical conditions and the prevalent energy resource, thereby revealing longer historical trajectories. This can be illustrated in the European regions explored in the chapters of this volume (Figure 0.2), which are representative of many more landscapes across the continent. The peatlands concentrated in the Ostrobothnian regions in Finland continue in the present to play a central role in the country's economy and energy mix. Coal and lignite deposits have been mined to produce energy in both western and eastern Germany. Oil shale mining in Ida-Virumaa and oil drilling on the Abşeron Peninsula began during a time when both regions were part of the Russian Empire and continue to be dominant industries in contemporary

Figure 0.2 The 'cultural landscapes of energy' explored in this volume. Map by Silke Haps.

Estonia and Azerbaijan, respectively; and the petroleum reservoirs in the North Sea were discovered several decades later. Finally, the alpine mountainous environment and the Danube River provided the groundwork for the erection of dams with adjacent water reservoirs and the flooding of the valleys and their settlements to produce hydropower. However, while wandering through these and other ubiquitous 'energy landscapes' across Europe, it might not always be readily discernible to the visitor that the hills or lakes they see are the outcomes of energy production and the mitigation of its impact.[19]

The use of these landscapes has been subject to contestation and political struggles over the last century. The territoriality of energy production was crucial to this contestation: it combined the horizontal and vertical dimensions of landscapes by adding, through the extraction of fossil fuels, a subterranean energy regime to the already existing surface energy regime.[20] The transition to renewable energy resources will not ease these tensions; instead, as Matthew T. Huber and James McCarthy anticipate, it is likely to further amplify earlier political debates. The production of wind and solar power is more land-intensive compared with fossil fuel extraction, and it 'will entail the *restructuring* of land-based struggles in the constitution of the energy–society relations.'[21] For instance, recent protests by Sámi indigenous activists in Norway against the construction of a wind farm, which will impede their reindeer herding, seem to confirm this restructuring.[22] Moreover, notwithstanding protests against fossil fuel extractivism, which are gaining pace globally, industries that depend on it, such as petrochemical manufacturing, have experienced sustained growth and are projected to make up for oil companies' declining fossil fuel production in the coming decades.[23] As a result, a new territoriality of extraction emerges from the diverse sites involved in the production and processing of energy resources and downstream industries.

Thus, the 'planetary mine' is not spatially limited to a specific site; rather, it can be conceived as a transnational network of infrastructures and technologies integrated by a logistical system, which spans the entire globe.[24] Using a comparative framework focused on Europe allows for the connection of the planetary consequences of energy production and the transregional networks to national frameworks and finally specific locations. This is particularly important, given that energy production was connected to programmes of social engineering, nation-building, and geopolitical interests, all of which reflect back on how the past is constructed today.[25] In some instances, energy even provided a foundation for imperial region-making, in which particular landscapes were used for the economic exploitation of resources. The Donbas (a portmanteau for Donets Basin), a region in eastern Ukraine, which was named with reference to the large underground coal deposits, first fuelled the industries of the Russian Empire and subsequently those of the Soviet Union.[26] Moreover, with the emergence of the Soviet Union as one of the main exporting states of oil and gas, the pipeline systems built from the fields in the Idel-Ural and Western Siberia leading to Europe became an important means of consolidating the socialist bloc during the Cold War.[27] Russia's ongoing war against Ukraine clearly demonstrates how this history reverberates in the present and will continue to impact the future.

Against the backdrop of political and economic interests, local perspectives on cultural landscapes of energy across Europe have tended to fade into the background of these overarching narratives. In recent years, critical heritage studies have aimed to 'rethink heritage in precarious times,' addressing current crises such as the climate emergency and growing inequality in an effort to craft more inclusive futures.[28] In this context, landscapes have been a focus of research on the environmental and social impacts of extractivism. When heritage-making is sustained under these transformative processes, it becomes less about the conservation of stable entities and more about 'maintaining continuity with the past' in an unstable future.[29] The topic of energy speaks directly to these questions, which have been explored mostly in Anglophone regions, including post-settler and postcolonial contexts.[30] The chapters in this volume expand on this research by zooming in on marginal spaces in Europe—from the offshore oil fields to open-pit mines, mountains, and peatlands—and revisiting prominent cases of industrial heritage such as the Ruhr district. They challenge established temporalities that position heritage-making as succeeding energy production.

Energy has transformed and continues to transform the lives of those residing and working in landscapes affected by large-scale infrastructure and extraction, forcing them to readjust to their new environments and adapt their daily practices.[31] New workers' settlements have had a lasting impact on places even decades later when the respective worker communities no longer exist.[32] The social and cultural dimensions of large structural transformations, such as pit closures, reveal unresolved challenges and, at times, conflicting responses on the part of those facing unemployment and an uncertain future.[33] Even in countries like Switzerland, where public votes were held on the construction of energy infrastructure, which would cause the destruction of villages through flooding, poverty and economic pressures compelled the voters to concede to offers of compensation by the concerned energy company and accept the dam project.[34] Examples such as this one highlight the ambivalent ways in which processes on the ground unfolded. Particularly in places where the majority of the population worked in the energy sector, individual biographies integrated both the productive and the destructive sides of energy production. The account of a young lignite miner in an East German documentary from 1983 portrays this ambivalence very well. The film traces the destruction of the young miner's village to make way for an open-cast lignite mine. The filmmaker first attends the miner's wedding-eve party in the village, and two years later, he accompanies him on an excavator moving across the new open-cast mine. The young miner is asked how he feels about driving by the location where his home used to be and whether he ever thinks of it. He gives a shrugging response: 'Oh, thinking. Shall we say, what is gone is gone.'[35] He continues to operate the excavator while the devastated landscape, which can be seen in the background, provides him with employment and serves the national objectives of a planned economy.

The drastic interventions in the environment relating to energy production gave rise to the idea, in the twentieth century, that these landscapes needed active planning. Essentially, 'a new landscape' was to be created in place of the former one that the industry was destroying, an idea that reverberates in practices of conservation and

preservation.[36] Architects, designers, and planners attempted to integrate the new energy infrastructure seamlessly into the environment. For instance, already at the turn of the twentieth century, when substations had to be installed for the transmission and distribution of electricity, they were designed to fade into the background of the historical surroundings, for instance, as timber framing architecture in rural settings.[37] In regional planning, these approaches have continued into the present to minimise adverse 'scenic impacts' from renewable energy infrastructure.[38] Furthermore, when energy extraction and production end, some landscapes have been recultivated in ways that hardly anything reminds current visitors who come to these places for recreation today of the earlier presence of heavy industries. This is particularly true for open-cast mining and other forms of resource extraction that leave behind large pits.[39] After the excavators had left the former site of the destroyed village featured in the East German documentary mentioned above, the pit was flooded as part of recultivation measures. The former open-cast mine is today covered by one of the post-mining lakes in what is now the *Neuseenland* lake district south of Leipzig.

Landscape transformation does not, however, imply that references to the past are absent—quite to the contrary. Some recultivation measures even explicitly incorporate the past through practices of heritage-making. The destroyed church tower from the young miner's devastated village in the aforementioned East German documentary was recreated as a floating platform for hosting events (Figure 0.3). Named 'VINETA' after a mythical place swallowed up by the sea, the location actively combines fact and fiction from medieval legends and contemporary history. Similar to an iceberg, the floating platform hides a large construction

Figure 0.3 The floating 'VINETA' platform located on Lake Störmthal in the Leipzig *Neuseenland* post-mining landscape. Photograph by Carsten Müller, May 2022.

below the water surface in the seemingly pristine appearance of the landscape. It is attached by 86-metre-long iron chains to four containers filled with concrete that had been installed at the bottom of the open-cast lignite mine at the church's former location before it was flooded by the lake.[40] What is gone, as the young miner said in the documentary, has returned as heritage.

Heritage-Making: Conflicting Pasts, Presents, and Futures of Energy

Many of the landscapes shaped through energy production in the twentieth century no longer look as if they are pointing the way to the future. Power plants have been decommissioned, abandoned derricks are rusting, cracks are showing in the concrete of hydropower dams, and open-cast coal mines have been recultivated as lakes. What were once viewed as 'new lives' and 'new landscapes' now oftentimes represent a history of environmental degradation and pollution as well as declining industry and unemployment.[41] Studies on deindustrialisation have focused in particular on Western Europe and North America, whose former industrial heartlands experienced major structural transformations in the 1970s and 1980s. The transformation of the Steel Belt into the Rust Belt in the United States can be seen as emblematic of this transition, leading to a multitude of industrial ruins and millions of displaced workers. While a more general global trend of a transition to a 'post-industrial society' can be observed, reflecting a shift from the production of goods to the provision of services, deindustrialisation processes are characterised by 'spatial and temporal unevenness' across the globe and by the varying responses of people to the ruination of their lived environments.[42] In the context of Europe, which is the focus of this volume, the experience of decline and degradation across the continent has been fragmented. The end of state socialism and of planned economies in 1989–1991 led to the dismantling of large state-owned industries in Central and Eastern Europe, thus further intensifying the process of deindustrialisation already underway. Consequently, industrial ruins today may be found in various parts of Europe, but the reasons for their appearance and their interpretations may differ radically.

The declining regions with their industrial ruins were to be transformed across the continent into 'blooming landscapes' to live and work in.[43] The decommissioned industrial built environment was to be integrated into redevelopment initiatives, facilitated by the recent trend of official recognition of industrial heritage by national and international bodies. While the preservation of technical artefacts can be traced back to the turn of the twentieth century, it was not until the 1960s–1970s that the field of industrial archaeology emerged and the first international congresses on the conservation of industrial monuments were held in different European cities. Historical scholarship reveals that these efforts spanned both the Western and Eastern blocs during the Cold War, thus providing a relevant international framework for virtually all of the cases explored in the chapters of this volume.[44] The official recognition of energy infrastructure also gained ground during this period, which is why in this volume energy infrastructure is discussed in the overarching context of industrial heritage rather than as a distinct phenomenon, such as mining

heritage or 'nuclear cultural heritage.'[45] For example, the Lake Sihl reservoir in Switzerland explored by Sarem Sunderland in this volume was given protected status in 1962, and the first colliery in the Ruhr district was recognised as industrial heritage in 1969. The reservoir has continued to operate, whereas the colliery has been decommissioned. Therefore, it is evident from these two sites that there is no clear correlation between deindustrialisation and heritagisation, and one is not a prerequisite for the other.

Notwithstanding continuing industrial operations, and even their expansion, most of the literature on heritage-making processes in the context of energy production has focused on what comes after the industries end. They generally frame specific buildings, sites, and landscapes as well as local histories as 'post-industrial,' thus focusing on ruins rather than ongoing operations. A particular focus has been on processes of memorialising the industrial past as an anchor of identity in deindustrialised regions, given the repurposing of former factories and production sites and the reshaping of forms of belonging.[46] When it comes specifically to landscapes, affective and embodied encounters, especially by means of autoethnography, have played a central role as ways of approaching the 'post-industrial landscape.'[47] In environmentally degraded landscapes, 'toxic heritage,' for instance from nuclear waste, raises the question of how unwanted pasts can be managed and thus contained.[48] Landscapes have been described as wastelands that are 'reclaimed, restored, and redeveloped'[49] and as 'places of latent potential,'[50] offering a canvas for creative practice to make new sense of the memories associated with abandoned industrial sites.[51] In many places, the post-industrial heritage has been operationalised for tourism to generate new employment and an income flow from outside the site, though generally below the level provided by the previous industry.[52]

By building on traditions of landscape architecture and planning, or alternatively, by analysing recent activities in these fields, scholars have sought to direct attention to what Anna Storm described in *Post-Industrial Landscape Scars* as 'ambiguous, painful, and damaging pasts, as well as to possible healing processes.'[53] In another article written with Krister Olsson, Storm has explored the local meanings and narratives centring on a continuously growing pit in the former centre of Malmberget, a northern Swedish mining town, showing how the local population have connected their values to the pit's physical changes over time.[54] These authors argue that the 'landscape scar' can be deployed as a cultural tool: to the local population, the pit represents the past mining boom as well as experiences of forced relocation, decline, and loss of employment. It is also a special landmark regularly shown to visitors, distinguishing the town from other places, thus enabling its emergence as a heritage site in its own right. Storm and Olsson are two of many researchers who have sought to expand the concept of heritage, emphasising the perspectives of local stakeholders on the historic remains of an industry and its impact on landscapes. Alice Mah, a sociologist who expressed criticism of celebratory accounts that ignore the lives of the inhabitants of a site, has focused on the lived process of industrial ruination and decline to understand how local communities relate to the physical legacy of deindustrialisation and the changes that it

reflects.[55] More recently, as a researcher interested in post-industrial ruins, Mah has also pointed to the coexistence of decline and booming industry as an unexpected aspect of her earlier research.[56] Examples like these highlight the many processes of heritage-making associated with local industrial pasts that are taking place outside of the space of official recognition.

Our understanding of 'cultural landscapes of energy' builds on this research and challenges linear temporalities of deindustrialisation. Instead, we seek to consider the coexistence of phase-out and ongoing energy production, expanding the analysis of heritage-making, which previous scholarship has typically confined to the period following the end of energy production. The concept of a 'cultural landscape' is well suited for pursuing this approach, as it has been used for enquiries into the intimate relationship between cultural and physical environments.[57] The concept first emerged in the late nineteenth century to refer to the formative influence of human activity on natural landscapes, later inspiring methodologies of 'reading' landscapes.[58] From the 1970s onwards, preservationists and heritage site managers adopted the cultural landscape concept, who were interested in developing new approaches focusing on holistic entities conceived as a series of layers linking past, present, and future rather than as individual monuments viewed in isolation. This approach encompassed not only the natural environment and the countryside but also conservation of the urban landscape,[59] analyses of which have often sidetracked the sensory and environmental dimensions of place.[60] Against this backdrop, the cultural landscape concept has been used to critically assess and overcome the traditional split between nature protection and monument preservation.[61] New inter- and transdisciplinary approaches were being developed in the recent past, bringing together conservation with anthropology, archaeology, geography, ecology, architecture, and several other disciplines.[62] These approaches enable the analysis of the cultural landscape as a process, encompassing complex social-ecological systems, a place inventoried in a heritage conversation register, or a practice carried out by state authorities and international bodies.[63] Against the backdrop of energy transition policies, recent discussions on transformative conservation have shifted the emphasis on the entanglement of nature-based and people-centred approaches. Ongoing initiatives in many landscapes shaped by energy aim to restructure systems, promote the transition to net-zero emission economies, and secure sustainable use of natural resources.[64]

The valorisation of landscapes shaped by energy production is a relatively recent practice, as industrial activity long remained outside the focus of the 'Authorized Heritage Discourse' for a long time.[65] For example, when the concept of a cultural landscape gained wider acceptance internationally among heritage professionals through its inclusion in the Operational Guidelines of the United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention in 1992, its official definition initially excluded industrial landscapes. Emerging from competing visions based on different understandings of landscapes rooted in specific geographical contexts,[66] this definition instead encompassed a specific set of human-made landscapes whose protection was seen to support sustainable land use and the maintenance of biological diversity.[67] Arguably, compared

to agriculture and crafts, industrial landscapes were deemed less aligned with these objectives. Moreover, they were perceived to lack the traditionally conceived aesthetic qualities projected through the genre of landscape painting. However, advocates for the recognition of industrial landscapes have argued that factories, transport routes, waste disposal areas, workers' housing, and other infrastructure equally represent stages of interaction in the evolution of a historic landscape.[68] The European Landscape Convention of the Council of Europe, adopted in 2000, reflects this more holistic approach to landscapes. Its conception of landscape includes both places of beautiful scenery and those devastated by resource extraction, such as open-cast lignite mines or the growing pit in Malmberget mentioned earlier.[69] Consequently, in 2011, the urban mining landscape of Carbonia, a city in Sardinia, received the Landscape Award for its exemplary approach to sustainable development. UNESCO has also drawn inspiration from these developments, and several sites currently recognised as cultural landscapes have been shaped by extractive industries, including energy resources, such as coal in northern France and South Wales and uranium in the German–Czech border region.

However, what all of these landscapes have in common is the end of mining and the abandonment of their industrial infrastructure, often accompanied by economic decline, which preceded their redevelopment and international recognition. Mining activities, for instance the planned lithium mining in the German Ore Mountains, are unfolding adjacent to the protected territory and are monitored by international bodies to mitigate potential impacts on heritage management.[70] In case of extractive activities or the construction of large-scale infrastructure in the protected landscapes, heritage management becomes unfeasible, and this can lead to the removal of the heritage status of these landscapes. Given that extractive industries and the energy sector are still expanding, the way the local impact of industrialisation and energy production is valorised entails at times a tension between past and present. For example, the Nord-Pas de Calais Mining Basin in northern France is recognised not only for the technical installations and factories associated with coal extraction but also for the 'remarkable example of worker solidarity' in the landscape shaped by the 'continuous mono-industrial occupation of coal mining over almost three centuries.'[71] While this mono-industry is lauded for preserving an authentic and integral mining landscape devoid of other industries, it has also resulted in enduring social challenges in the region. On the one hand, the decommissioning of mines led to high unemployment rates in the basin, which were still at 20–30% at the time of the UNESCO World Heritage inscription.[72] On the other hand, the mining heritage is being used to revitalise the region as a tourist destination. Tourists can hike up the slag heaps, glide down an artificial ski slope, and drink 'Charbonnay' wine (a wordplay on *charbon*, the French word for coal) from the new vineyards.[73] These practices of heritage-making firmly situate energy production in the past, much like the *Neuseenland* lake district south of Leipzig discussed earlier.

The above examples underline the need for more integrated perspectives, which take account of both official heritage-making processes and those unfolding outside protected territories. This approach renders visible the conflicting pasts,

presents, and futures of cultural landscapes of energy in which some industries may have ended while others have continued or recently commenced. Depending on the perspectives of various stakeholders, radically different readings of the histories of the landscapes emerge. A focus on the end of energy production paints only a partial image of the past and how people relate to it in the present, thus projecting desired futures. This selective view also contributes to obscuring how histories are being constructed to support and mobilise specific energy policies. It is crucial to consider here that energy production is not only ongoing but also that it is on the rise. As highlighted by the cases explored in this volume, energy production remains a present and future concern, especially when talking about the past.

Creating, Living with, and Sharing Landscapes

The past of cultural landscapes of energy is integral to the ways in which people interact with their environments in the present, how they make sense of it, and how they articulate desired futures. By exploring the meanings and uses of landscapes, the contributions in this volume, authored by scholars from history, heritage studies, architecture, sociology, anthropology, and sustainability science, reveal the conflicting temporalities of energy transition. Coming from different disciplines and academic traditions, and drawing on a variety of methods, the authors shed light on the 'socio-political complexities that enmesh heritage.'[74] Fieldwork and oral history interviews conducted in the Scottish Highlands and Finnish North reveal the lasting impact of historical energy regimes, which local communities uphold even as states seek to decommission production. The analysis of museums and media in the Swiss Prealps and at the Romanian-Serbian border highlights how heritage-making, in fact, preceded energy production and even played an integral part in the construction of the local energy landscape. Memories in post-mining landscapes are conflicted, and a careful uncovering of forgotten, overwritten, and suppressed voices of resettlers and minorities contributes to broadening the processes of heritage-making. And finally, the analysis of energy infrastructure, including the traces of temporary workers' settlements next to high-rise dams, raises new questions for conservation practices.

The chapters in this volume shed light on the diverse uses of landscapes that have been undergoing changes. This includes the domain of work that may experience a transition from the industrial to the service sector, such as tourism. They also enquire into the landscapes as places where people reside, possibly because they moved there for new work opportunities, which they later lost, or because their families had already lived in the region and experienced the changes over a longer period of time. Many of these landscapes are also now places of leisure for people living elsewhere who come into the environment shaped by energy production possibly without being aware of this. They bathe in post-mining lakes or hike on hills recultivated from waste heaps. In other places, the energy infrastructure is a touristic attraction in its own right with platforms erected for visitors to observe the scenery comprising power plants or open-cast mines. Visitors can also register for one of the many activities offered by local entrepreneurs, such as bungee jumping

off high-rise dams. Thus, the ways in which the cultural landscapes of energy are currently used are manifold, and they can be seen as places where many different perspectives intersect, often involving conflicting aspirations.

The case studies explored in this volume bring together the perspectives of diverse stakeholders, including inhabitants, workers, excursionists, government officials, museum staff, and energy companies, thus revealing the multifaceted histories of prosperity and decline associated with the landscapes under study. They illuminate new visions for landscapes, at times even preceding the industry by decades, and the new industrial work cultures that were shaped by the exploitation of energy resources. While the production of energy was introduced to advance economic development, it not only changed the landscape but also destroyed villages and small towns in the vicinity as a result of excavation and flooding. Against this backdrop, current perceptions of the material remains of energy industries and the new landscapes they created are highly ambivalent. They range from appreciation of technological innovation, workers' pride, and artistic repurposing of industrial infrastructure to critiques of enduring negative ecological impacts and the contested legacies of displacement and hazardous working conditions. And finally, the story of energy production leading to a prosperous future features personal histories of loss or gain, and sometimes both.

This volume is structured into three parts that trace the processes shaping the cultural landscapes of energy, while paying close attention to the changes for people and the environment and the conflicting interpretations of the past, present, and future. The three parts do not follow a traditional chronology, thus reflecting the fact that the histories of power, prosperity, and decline associated with the landscapes are not linear. Instead, as the cases reveal, the temporalities of creation, interaction, and decommissioning can overlap and impact each other, sometimes repeatedly. The first part titled 'Creating Energy Landscapes' carves out the making of energy landscapes in the twentieth and twenty-first centuries. The second part, 'Living with Energy Landscapes,' then zooms in to explore how changes in the landscape have affected the environments and the people who live in them. The third and final part, 'Sharing Energy Landscapes,' looks at how current heritagisation projects approach and disseminate the histories of energy landscapes. These three parts reveal that the landscapes discussed in this volume were made and continue to be remade by energy. The ten chapters of the volume are followed by a concluding commentary by the renowned energy historian, Petra Dolata, who reflects on common themes explored across regions and energy sources and points to new questions and directions for future research.

In the first part of this volume, three chapters trace the emergence of cultural landscapes of energy, revealing how they were shaped by aesthetic traditions, the interests of political economy, and processes of nation-building. They highlight commonalities across energy sources by looking at hydropower, peat, and oil. The chapter by Sarem Sunderland titled 'The Cultural Construction of a Hydroelectric Landscape: The Project of Lake Sihl in Switzerland, 1897–1937' zooms in on Lake Sihl, a reservoir in the Swiss Prealps fuelling a dam power plant, which began operations in 1937. Approved through a public vote, the new lake flooded

the valley, including peatlands, and destroyed the homes of more than 1,000 inhabitants. Sunderland's account reveals that by drawing on traditions of landscape painting and alpine visual culture, especially in tourism, various stakeholders started imagining the energy landscape long before it came into existence. While the human-made lake reflected the Swiss national image of pristine nature, the chapter by Leyla Sayfutdinova titled 'Land of Fire, Temples of Extraction: Azerbaijan's Geo-Architectural Assemblage of Oil and Nation' looks at the politics surrounding oil in Azerbaijan. By focusing not on the periphery but on the capital city of Baku, and by exploring the urban landscape, Sayfutdinova highlights the relevance of vertical territory. She shows how, over the course of more than a century, energy imaginaries were attached to Baku's built environment and extended to cover the entire territory of Azerbaijan. The chapter by Hanna Lempinen titled 'Energy Transition as Cultural Trauma: The Making and Unmaking of the Finnish Peat Industry' also examines the role of energy in forging a national cultural identity through an exploration of the continuing role of peatlands in Finland's energy mix. Based on fieldwork and interviews with peat workers, Lempinen reveals not only the communities' economic dependence on peat but also their intimate relations to the resource and landscapes shaped by its extraction. The ongoing energy transition in Finland, which seeks to move away from fossil fuels, including peat, is experienced as a cultural trauma by communities living near peatlands, which has been used within political campaigns to influence decisions on energy policies.

The second part of this book focuses on living with cultural landscapes of energy as workers and residents—both temporary and more permanent. Enquiring into ephemeral infrastructure, work cultures, and displacement, the three chapters in this part reveal how big visions of energy production intersected with personal histories. The chapter by Ewan Gibbs titled 'Northern Scotland's Late Oil-Fuelled Industrialisation: Labour Mobility and Community Transformation since the 1970s' traces the dramatic changes in the Scottish Highlands and Shetland following the discovery of oil in the North Sea. Drawing on a large number of interviews, this chapter tells the stories of workers migrating to northern Scotland as well as those of erstwhile inhabitants, showing how they experienced changes from the initial boom to the eventual decline. The account connects offshore extraction with the onshore oil terminal, thus revealing an extensive cultural landscape of energy. The topic of labour is also explored in the following chapter by Rune Frandsen titled 'The Cultural Landscapes of Dam Building in Switzerland: Secondary Infrastructure and its Territorial Archive at the Grande Dixence Dam, 1950–1965.' His analysis, focusing on temporary workers' settlements established for the construction of energy infrastructure, addresses a crucial challenge in the heritagisation of energy production, namely, the focus on individual technical monuments—in this case, the 285-metre-high dam—while ignoring the 'secondary infrastructure' and the logistics required for its construction. Frandsen follows the traces left behind by temporary workers, who were largely seasonal 'guest workers' from Italy, in this high-altitude site. Traces of earlier settlements are also the focus of the final chapter in the second part by Andrew Demshuk titled 'Erasure as Heritage: Two Villages between Restoration and Destruction on an East German Lignite Moonscape.'

Focusing on the Central German Mining District south of Leipzig, this chapter traces two memorial archetypes that emerged following the destruction of settlements to make way for open-cast lignite mining. One village, which was submerged under water in what is now the *Neuseenland* lake district, has been commemorated as an idealised past. The other village experienced extreme pollution but ultimately survived, and its ecological remediation was embedded in the preservation of the historical built environment following German reunification.

The third and final part of this volume titled 'Sharing Energy Landscapes' examines how the past is disseminated through contemporary heritagisation initiatives to foster cultural tourism, support corporate and political objectives, or recentre marginalised perspectives. The four chapters in this part also point to blind spots and desiderata in present-day heritage practices when it comes to places and people whose histories have been closely intertwined with energy production. The chapter by Saara Mildeberg titled 'A Post-Industrial "Adventure Land?" Challenges for Cultural Tourism Development in the Estonian Oil Shale Region' focuses on ongoing efforts to support the economic diversification of northeastern Estonia, whose economy has been shaped by carbon-intensive oil shale extraction. The region of Ida-Virumaa, formerly an industrial hub during the Soviet period, has been experiencing economic decline and unemployment in the recent past. Drawing on ethnographic fieldwork and interviews with policymakers and stakeholders in tourism, Mildeberg explores how these actors are attempting to reinvent the region as an 'adventure land.' The chapter by Marin Kuijt and Gertjan Plets titled 'Curating a Future for Coal and Petrochemicals: Ruhrkohle AG's Corporate Influence on the Zeche Zollverein Heritage Site' also looks at efforts to promote an industrial built environment as a cultural tourism site. This chapter revises earlier histories of the 'success story' of Zeche Zollverein in Germany's Ruhr District, shedding light on the involvement of corporations and the combination of mining and downstream processing of coal. By drawing on archival company records, the authors show how the narrative of energy transition was co-written by the energy company, thereby positioning coal in the past and obscuring their ongoing business activity. Along similar lines, highly selective accounts presented in contemporary museums and heritage sites are also the subject of the chapter by Merve Neziroğlu titled 'Representing What Has Been Destroyed: The Sunken Island of Ada Kaleh in Museums of the Iron Gates Region in Romania.' Visiting the region on the fiftieth anniversary of the dam's construction, Neziroğlu focuses on the island of Ada Kaleh, a former Ottoman exclave inhabited by a Turkish minority, which was submerged underwater following the construction of the largest dam on the Danube. It has resurfaced in the present in several museums in the region, including the technological museum of the dam, and depictions of life on the island continue to sustain an orientalist tradition that emerged more than a century ago with the onset of tourism in the region. The final chapter of this volume reflects the shared perspective of three scholars who were involved in a recent regional heritagisation project. Written by Jenny Hagemann, Fabian Jacobs, and Lutz Laschewski, the chapter titled 'Integrating Minority Perspectives into the Heritagisation of Post-Mining Landscapes in Lusatia, Germany' addresses a

fundamental problem, namely, the separation of the industrial history and the history of Lusatia as a region inhabited by Sorbians, one of Germany's recognised minorities. Their insight into a failed nomination for UNESCO World Heritage listing draws attention to competing needs and learning outcomes during the participative process at the local level.

Taken together, the chapters in this volume outline the conflicting histories surrounding work, habitation, and leisure in landscapes across Europe, which were affected by coal mining, oil drilling, peat extraction, and the construction of hydroelectric power reservoirs. Moreover, they highlight the ambivalent attitudes towards 'cultural landscapes of energy' where changes brought about by energy production are lauded by some as markers of progress and bemoaned by others for the destruction of traditional livelihoods. Drawing on archival records, interviews, and fieldworks, many of the accounts in these chapters combine both perspectives on the productive and destructive sides of energy, addressing the tensions emerging from heritage-making narratives that focus on the end of energy production despite ongoing and future commissioning projects. Thus, the authors provide novel insights not only into the multifaceted and complex ways in which the landscapes they describe were shaped by energy in the past but also into how they continue—and will continue—to be shaped by it.

Notes

1 "Power Trumps Property."
2 See Berkner, *Bergbau und Umsiedlungen*.
3 See Berger, Wicke, and Golombek, "Burdens of Eternity?"
4 Deutscher Bundestag, "Braunkohleausstieg im Rheinischen Revier"; Landesregierung Nordrhein-Westfalen, "Wir machen Tempo."
5 Müllender, "RWE reißt Windräder ab."
6 Harrison, "Heritage as Future-Making Practices."
7 Bell, *The Coming of Post-Industrial Society*.
8 Wicke et al., *Industrial Heritage*.
9 This is a translation of 'auf Kohle geboren.' All translations are by the author.
10 Berger, "Representing the Industrial Age," 23.
11 Harrison, *Understanding the Politics of Heritage*; Bozoğlu et al., *The Routledge International Handbook of Heritage and Politics*.
12 York and Bell, "Energy Transitions or Additions?"; Bonneuil and Fressoz, *The Shock of the Anthropocene*.
13 For data on the current global energy mix, see the Energy Institute, "Statistical Review."
14 See Melsted and Pallua, "The Historical Transition."
15 See Chandler, *Shaping the Industrial Century*.
16 Gross and Needham, *New Energies*.
17 Ross et al., *New Lives*.
18 Crowe, *The Landscape of Power*, 9–10.
19 Pasqualetti, "Reading the Story of Energy," 12.
20 Huber and McCarthy, "Beyond the Subterranean Energy Regime?," 655.
21 Huber and McCarthy, "Beyond the Subterranean Energy Regime?," 666.
22 "Sámi Rights Activists."

23 Mah, *Petrochemical Planet*, 73.
24 Arboleda, *Planetary Mine*, 4–5.
25 See Mitchell, *Landscape and Power*.
26 Zabirko, "The Donbas." For an exploration of the ways in which this industrial emphasis continues in selective present-day representations of the region's past, see Sklokina and Kulikov, "Industrial Heritage."
27 Flade, "Creating a Common Energy Space."
28 Shepherd, *Rethinking Heritage*.
29 DeSilvey, "Ruderal Heritage."
30 See Zhu, "Putting the 'critical' in heritage studies."
31 Parr, *Sensing Changes*, xiii.
32 See, for example, the "Workers' Villages" project on the reimagining of a former peat worker settlement as part of Creative Ireland's Climate Action Fund at https://reimagineplace.ie/fieldwork/workers-villages/.
33 For an account that illuminates individual responses to large structural transformation, see Gibbs, *Coal Country*.
34 Mark, *Ein Bergdorf geht unter*, 29.
35 'Ach, denken. Sagen wir mal, was weg ist, ist weg.' This quote appears in Tetzlaff's documentary, *Erinnerung an eine Landschaft*, 1:10:03.
36 Fairbrother, *New Lives*, 382.
37 An example of a substation in timber framing from 1912 is preserved in the Erzgebirge Open Air Museum in Seiffen, Germany.
38 See Apostol et al., *The Renewable Energy Landscape*.
39 Meyer, "'Biofacts.'"
40 Lausitzer und Mitteldeutsche Bergbau-Verwaltungsgesellschaft mbH, "Espenhain," 28.
41 Anderson and Kelly, "What Happens," 258.
42 High et al., "Introduction," 4. See also MacKinnon and High, "Deindustrialization." For a broader perspective on deindustrialisation history in the United States, see Cowie and Heathcott, *Beyond the Ruins*.
43 Translated from 'blühende Landschaften.' For an early reference, see Kohl, "Der entscheidende Schritt," a speech delivered in 1990 by German chancellor Helmut Kohl on the monetary union of West and East Germany. The metaphor was later taken up and used in election posters of his party, the Christian Democratic Union of Germany (CDU) in the 1990s.
44 See Lehmann, "Socialism and the Rise of Industrial Heritage."
45 See Ross, "Nuclear Cultural Heritage."
46 Berger, *Constructing Industrial Pasts*; Orange, *Reanimating Industrial Spaces*; Storm, *Hope and Rust*.
47 Jaramillo and Tomann, *Transcending the Nostalgic*.
48 Wollentz et al., "Toxic Heritage," 295.
49 Kirkwood, *Manufactured Sites*, xiv.
50 McLean, *Transformative Ground*, 1.
51 Heeney, *The Post-Industrial Landscape*.
52 Rhodes et al., *Geographies of Post-Industrial Place*.
53 Storm, *Post-Industrial Landscape Scars*, 3.
54 Storm and Olsson, "The Pit."
55 Mah, *Industrial Ruination*, 10–12.
56 Mah, *Petrochemical Planet*, x.
57 See Jones, "The Concept of Cultural Landscape."

58 Sauer, *The Morphology*; Lewis, "Axioms.".
59 Taylor, "Connecting Concepts."
60 Hayden, *The Power of Place*, 18.
61 Taylor and Lennon, "Cultural Landscapes."
62 Jacques, "The Rise of Cultural Landscapes."
63 Brown and Goetcheus, "Introduction," 2–3.
64 Fougères et al., "Transformative Conservation."
65 Smith et al., "Introduction: Class Still Matters," 2; Kisiel, "Unwanted inheritance?"
66 Gfeller, "Negotiating the Meaning," 495.
67 This comprised landscapes like gardens, which were intentionally created, as well as those that evolved from social, economic, administrative, and/or religious imperatives, or those with religious, artistic, or cultural associations, mostly lacking material evidence. United Nations Educational, Scientific and Cultural Organization (UNESCO), "Operational Guidelines," 7–8.
68 Fowler, *World Heritage Cultural Landscapes*, 57.
69 Ermischer, "Walking the Landscape," 246.
70 UNESCO, "Current Development Projects."
71 International Council on Monuments and Sites (ICOMOS), "Nord-Pas de Calais Mining Basin," 214, 216.
72 Mission Bassin Minier, *Portrait socio-économique*, 22.
73 Winston Nicklin, "This Former Coal Mining Region."
74 Winter, "Clarifying the Critical," 533.

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