# Dreams of Green Fields – The "grüne Wiese" in German Nuclear Decommissioning Discourse

Hannah Klaubert[1]

[1]Department of Thematic Studies, Section Technology and Social Change, Linköping University, Linköping, Sweden

5 *Correspondence to*: Hannah Klaubert (hannah.klaubert@liu.se)

**Abstract.**

The term "grüne Wiese" (literally "green meadow" or "field") has become a prevalent expression in German nuclear decommissioning discourse, appearing across government reports, media articles, and activist actions. This article explores the rhetorical, symbolic, cultural and political dimensions of the "grüne Wiese" within German nuclear decommissioning

10 discourse through the lens of cultural analysis, drawing on a visit to an actual "grüne Wiese" site, archival research, and analysis of media and anti-nuclear activist engagements with the term. Treating the phrase as a "floating signifier," it traces how the term emerged in anti-nuclear protest before being strategically deployed by industry and politicians to assuage public concern about nuclear power. As Germany enters an intensive phase of decommissioning and the search for a final repository, the term promises closure precisely at a moment when societal debate and engagement are needed most urgently.

## 1 Introduction

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While planning a field trip to various shut-down and operational nuclear power plants across Germany in 2023 for another research project, I repeatedly came across an intriguing term in the decommissioning status reports and media coverage: "grüne Wiese"–literally, depending on the translation, "green meadow" or "green field." Phrases like "rückgebaut zur grünen Wiese" (decommissioned to a green meadow or green field) stood out in a domain typically characterized by highly technical language

20 and restrained, bureaucratic terminology. A quick online search reveals that no uniform definition of the expression exists, with interpretations varying from sites released from nuclear regulation (Atomgesetz) with some remaining ground level infrastructure (Thierfeldt and Schartmann 2009, 3) – which would in English commonly be called an industrial "brownfield" – to the literal disappearance of all infrastructures and restoration to a field for the foreseeable future (*Stade – Vom Kernkraftwerk zur „Grünen Wiese"* 2008, 29). Another common German expression, "Abriss bis zur Rasenkante", literally

25 "demolition to the lawn's edge", also references the lawn as the endpoint for nuclear decommissioning activity. The prevalence of the "grüne Wiese" imaginary across a variety of texts, from government reports to media articles and activist actions, attests to its socio-cultural currency in German decommissioning discourses.

This fixation on the grass, meadow, lawn or field in German nuclear decommissioning is notable in two ways: First, the "grüne
30   Wiese" term presents a curious reversal of the common use of the "greenfield" as a site designated for industrial development,
that is, a starting point of an activity rather than an endpoint. In English, it is almost exclusively used in a modified form in
nuclear decommissioning (greenfield status, condition, -equivalent condition) to clarify this reversal and its emergence from
technocratic terminology, a subtlety that is lost in German translation. It is overall much less prevalent in English texts
concerning nuclear decommissioning; "unrestricted use" (or, in cases of prevailing contamination, "restricted use") are terms
35   more commonly found (*Decommissioning of Nuclear Power Plants* 2018, 2). In recent years, the English "greenfield status"
term can almost exclusively be encountered as the less desirable opposite to a "brownfield" designated for industrial use which,
according to a 2011 IAEA report, is a "cost effective and environmentally beneficial way" (*Redevelopment and Reuse of
Nuclear Facilities* 2011, 22) of decommissioning a nuclear power plant.

40   This already points to the second notable point: Decommissioning of a nuclear power plant can have a whole range of
outcomes, from reuse for other industries or further nuclear installations like interim or final storage or reprocessing plants to
agricultural use (which would most closely align with a vision of a "grüne Wiese"). The German Atomgesetz ("nuclear law")
does not specify the exact physical condition that former sites must be restored to; instead, individual decommissioning licenses
and associated regulatory requirements determine how and when the site can be released from regulatory control ("aus dem
45   Atomgesetz entlassen"). These processes hinge on a variety of specific interests by the industry, government and local actors.
Within this context, a literal "grüne Wiese" can be seen as a rather unlikely – and potentially also undesirable – outcome. The
tension between the common use of the term and unlikely realization of the expectations it raises, as well as the frictions in
translation and use, motivate the following explorations.

50   Social science and humanities scholarship has long been interested in the cultural, social, political and material processes that
take place when an industry ceases to operate (see for instance Debary 2004; Chilingaryan 2014; Storm 2016). Nuclear
installations, in particular, have raised questions about how to deal not only with the transition from affluent industrial to post-
industrial communities (Brown 2015), but also with the health implications (Cram 2015) as well as cultural and material
heritage of a contested technology deeply enmeshed with local identity (Storm 2020; Rindzevičiūtė 2021). Scholarly work on
55   nuclear cultural heritage has examined the many tensions and questions arising in the decommissioning process (Ross 2023).
The challenges reach from the technological and environmental, as new strategies for decommissioning sites need to be
developed and large quantities of toxic waste require processing and storage, to managing processes of fundamental socio-
economic change in former nuclear communities (ibid. 2).

60   Germany is currently in the midst of managing such a fundamental transition, as its last three commercial nuclear reactors
were shut down in April 2023. In addition to three fully decommissioned sites, there are currently 33 reactors, commercial and
experimental, undergoing decommissioning or awaiting legal approval for decommissioning, as well as six reactor projects

abandoned at various stages of construction also undergoing decommissioning (Bredberg et al. 2025, 14 f.). Twelve of the decommissioning reactor sites house an interim storage facility for spent nuclear fuel (ibid. 43), as Germany is still in the

65    process of identifying a solution for their final storage. According to an independent study commissioned by the German Federal Office for the Safety of Nuclear Waste Management, under current legal and processual frameworks an agreement on the site of the final repository can realistically be expected in the year 2074 (Krohn et al. 2024, 167). Construction of a deep geologic repository can take many decades after the decision has been taken, which means that the "interim" storage at the nuclear sites may indeed go on for many decades, putting into question how soon the sites may become truly "postnuclear."

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As Yamamoto et al. stress, land conversions of former nuclear sites are "contingent and dynamic social process, in which goals and rationales themselves may be negotiated, rearticulated, and transformed as the process unfolds" (2021, 420). What lies ahead, then, is a long phase of societal negotiation of the material and immaterial nuclear heritage of decades of nuclear energy production across the whole country, and the future of the nuclear sites in the medium and long term. Such negotiation

75    necessarily takes place both at the local and federal level, and it concerns the local and federal governments as well as private citizens, nuclear workers, and anti-nuclear activists. The "grüne Wiese" phrase, I suggest, might function as a prism for unfolding the complexities of this moment, illuminating the optimism, but also staunch opposition of the early nuclear age as well as questions about the cultural and material heritage of the German nuclear decades as use of the technology draws to a close.

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This paper explores the rhetorical, symbolic, cultural and political dimensions of the "grüne Wiese" term within the broader discourse of nuclear decommissioning in Germany through the lens of cultural analysis. By examining its emergence, current official usage and its reception in anti-nuclear activism and art, it aims to unpack the layers of meaning embedded in this deceptively simple phrase. The "grüne Wiese", I suggest, has been constructed both as a metaphor for decommissioning and

85    as a literal vision of post-nuclear futures, potentially causing tensions in this moment of transition from energy production to decommissioning realities. Taken literally, the phrase implies a return to an idealized, natural state–a visual and conceptual erasure of the nuclear facility through its focus on the nature imagery of a green meadow. In this sense, it gestures toward a cyclical conception of the nuclear power production cycle and a "return to nature", contrasting sharply with the linear narrative of technological progress that nuclear power once promised, as well as with the realities of likely redevelopment of nuclear

90    sites on the ground.

Combining various methods, the article is based on a visit to an actual "grüne Wiese" site in Karlstein as well as archival research and cultural analysis of media discourses and activist expressions around the term. It also relies on an understanding of the "grüne Wiese" expression as what political theorist Ernesto Laclau, in expanding earlier work by Levi-Strauss, Barthes,

95    and Lacan, has termed an "empty signifier" (2005, 129f.). Based on the assumption that to exert power is to define and naturalize meaning of signifiers that initially remain "up for grabs" as they enter a field of meaning, the way various actors,

from regulators and activists to industry, differently engage the "grüne Wiese" in their meaning-making points to the malleability of the term, and the contestedness of the field of meaning in which it operates

100   In the following, beginning with my own visit to a designated "grüne Wiese" site, I explore how the term gained currency in German nuclear decommissioning discourses, examine its uses in the media and anti-nuclear activism, and discuss how it resonates with  nuclear humanities and social science scholarship on the naturalization of (post-)nuclear spaces and on nuclear cultural heritage processes. In a setting historically marked by stark (and sometimes even violent) societal struggle and polarization along the lines of populist resistance, technocratic governance and institutional power, I suggest, this seemingly
105   mundane phrase can illuminate how nuclear pasts and futures are variedly understood and negotiated by different actors and at different moments in time.

## 2 Exploring sites and histories

### 2.1 The Karlstein greenfield site

110   Motivated by curiosity about the physical reality behind the "grüne Wiese" phrase, I planned an additional stop to my 2023 fieldtrip in Karlstein am Main, one of two nuclear sites in Germany officially recognized as having achieved the status. Like the second site Niederaichbach, Karlstein is situated in the federal state of Bavaria, where it was once host to two reactors as well as a nuclear research center. The boiling water reactor Kahl (VAK), was the first NPP in Germany to feed electricity into the grid in 1961. It was subject to a short film by Haro Senft, a "New German Film" pioneer, which was nominated for an
115   Oscar in 1962. After its shutdown in 1985, decommissioning proceeded over several decades, concluding in 2010 when the site was cleared and returned to the "green field," which the Bavarian State Ministry of the Environment and Customer protection seems to define as the removal of (almost all) built structures from the site (BSmUV, n.d.). The second facility on the site, the superheated steam reactor Großwelzheim, had a much shorter operational life, running for just 1.5 years before continuous technical problems led to its permanent shutdown, with subsequent use for experiments in reactor safety. It achieved
120   what the State Ministry termed "grüne Wiese" status in 1998 (ibid.), a few months after being released from nuclear legislation.

I visited the Karlstein site on a cold, grey morning in April 2023. The atmosphere of the day seemed to mirror the ambiguous status of the location itself. Despite many sources mentioning its "grüne Wiese" status, which it is said to have reached more than a decade earlier, the site defies the romanticized image that the term evokes–a landscape restored to a natural, pre-
125   industrial state. Instead of a verdant meadow suggesting closure and renewal, I found a space that resisted such a narrative of cyclical return. The area remains enclosed by high, rusting fences, and large portions of the ground were still covered with gravel and tarmac. While a small herd of rescue goats now grazed there, this pastoral element was slightly misleading. The

goats are not evidence of ecological restoration but are owned by a former plant worker who uses them to manage the grass in the interim, pending a decision on the land´s future use (personal correspondence 19th September 2023).

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Leaving Karlstein, I found myself with more questions than answers about what decommissioning to the "grüne Wiese" truly signifies–both in policy and in practice. My first inquiry concerned the long- and medium-term planning for the Karlstein site itself. This, at least, was straightforward: In personal correspondence, a city official of Karlstein informed me that they are working with the current owner, multinational energy company RWE, to prepare the land for future industrial use (City official

135 Karlstein, "Weiternutzung Reaktor-Standorte," July 2023). The site's substantial size and proximity to the Main River make it especially attractive for redevelopment. Former nuclear sites are commonly larger than what is typically permitted for industrial zoning under current local development plans (*Bebauungspläne*), and redeveloping the site holds clear economic advantages for the community of Karlstein. With the nuclear industry no longer contributing to the local economy to the same extent (though a Framatome fuel assembly component manufacturing facility and the nuclear engineering firm Nukem remain

140 in the community), the promise of new businesses–and with them, tax revenue and employment opportunities–offer a compelling rationale for reindustrialization of the supposed green field. After preliminary conversations with a local citizen's initiative about building a solar energy park ("Beirat Energie und Mobilität"), in late 2025, RWE has announced plans for developing a large-scale data center at the site, with the existing energy structure being used to meet the center's energy needs (Klemt and Klemt 2025). The local government has raised concerns about noise pollution and the visual impact of the high

145 and bulky buildings of such centers, which the commissioned architect proposes to conceal with trees and vertical gardens (ibid.). While none of this is set in stone, this development, an answer to the recent rise of Artificial Intelligence and its insatiable energy needs, shows the "dialectic spatio-temporal dynamics, conflicting discourses, and emerging agencies that shape land conversion processes" (Yamamoto et al. 418) beyond seemingly locked-in outcomes (i.e. reuse of decommissioned sites for energy production).

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Overall, the Karlstein site lays open the liminality of this particular "grüne Wiese" as well as the multilayered-ness and diversity of postindustrial land conversion processes. Built on the site of a former lignite mine, the ground in question lies in direct vicinity to a groundwater rebound lake resulting from abandonment of the mine in the 1920s (Spessart Mainland, "Gustavsee"). This "Industrienatur" (Bangstad 2021) has been designated an ecological reserve, with an observation deck

155 providing views of the rare birds nesting on its shores. Opposite the Karlstein "grüne Wiese", the small and make-shift Energiemuseum, run by a former nuclear power plant operator and financed by the community, bears witness to its nuclear history and a certain sentimentality for the nuclear past (Scheffel 2023). Taken together, these sites form a landscape that is neither fully decommissioned nor fully restored or reused. The "grüne Wiese" here marks a liminal phase where competing futures are being negotiated and contested, rather than an end point of a "nuclear cycle" neatly closed.

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## 2.2 Emergence and strategic use of the "grüne Wiese" term in nuclear decommissioning

Another question that emerged during my visit to Karlstein concerned the origins and particular use of the term "grüne Wiese"

165 within the German-speaking nuclear context. Its use struck me as somewhat counterintuitive, given its more familiar connotations in the realm of urban planning and development. Traditionally, in both Anglophone and German discourse, the phrase "greenfield"–translated into German as "grüne Wiese"–has denoted the development of previously undeveloped land, typically situated on the outskirts of existing urban centers. In East and West Germany, the term gained prominence in the 1960s and 70s, coinciding with a wave of suburban expansion and a "planned decentralization" of cities and towns (Rüthers

170 2018; see also Schröteler-von Brandt 2018). It came to signify the forward-looking promise of growth and modernization beyond the historical city core.[1]

The "greenfield" was also the kind of terrain on which many nuclear power plants were built–largely on undeveloped land, roughly in the same period of the 1960s and 70s, and removed but not far from densely populated areas. With a few exceptions,

175 such as Krümmel, which was constructed on the site of a former dynamite factory, and Karlstein, where coal had been mined in the area, most German nuclear facilities were indeed erected "on the green meadow/field." This "marking" of a previously perceived natural space through the new technology raised concerns among citizens. In the 1970s, some of the most intense German anti-nuclear protests, around the construction area of the Brokdorf site in the northern province of Schleswig-Holstein, organized under the slogan "Der Bauplatz muss wieder zur grünen Wiese werden" ["The construction site must become a

180 green field/meadow again."] (Bürgerinitiative Umweltschutz Unterelbe 1977). Here, already, the term began to carry new symbolic weight, marking the "grüne Wiese" as a discursive terrain on which nuclear politics and (anti-)nuclear imaginaries of construction and decommissioning hinge. The curious reversal of the term, from naming the condition which made the sites appealing for development in the first place to a state that it was most desirable to return to, thus represents a conceptual pivot, reappropriating a term associated with beginnings to mark a supposed end.

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The activist's call for the return to a green field, whether consciously or not, seems to have been taken up by those responsible for the dismantling of nuclear infrastructure in Germany. In the International Atomic Agency's INIS catalog (short for International Nuclear Information System, a repository established in 1970 to gather sources covering nuclear power production), the first appearances of "greenfield" in a German context date to 1985. A publication titled *Back to the Greenfield*

190 *– Niederaichbach Nuclear Power Plant Faces Total Dismantling* outlines the planned full removal of the experimental reactor at Niederaichbach. The final sentence of its abstract points to the symbolic weight that was attributed to the decommissioning process in Niederaichbach, in particular: "Complete disassembly of the plant *will furnish proof for safe technical control of nuclear power plants* from the 'cradle to the grave'" (Loeschhorn and Ridthaler 1985). Here, the return to the greenfield becomes proof not just of technical feasibility but of ideological reassurance about the safety and feasibility of nuclear power

195 production. (Notably, the cyclicality that the "cradle to grave" phrasing evokes does not expand to the nuclear waste produced at the Niederaichbach site, which in large parts is far from being safely entombed in a "grave."[1])

This symbolic turn appears to have crystallized in the German context in the mid-1980s, with the dismantling of NPP Niederaichbach, a prototype heavy water reactor, serving as a demonstrative case. A particularly telling example of this appears 200 in a 1995 article in the *Nürnberger Nachrichten*, covering the official conclusion of the Niederaichbach decommissioning process. The ceremony featured the planting of two oak trees on the site, stressing its re-naturalized state, and the Bavarian Minister for the Environment is cited as follows:

> The dismantling of Niederaichbach is a convincing argument against the fear of nuclear power, says Erwin Huber: "This demolition is not, for us, the beginning of an exit." Rather, this pilot project proves that nuclear technology is 205 technically controllable from development through dismantling and disposal. Bavaria continues to rely on nuclear energy. (Nürnberger Nachrichten 1995) [2]

Here, again, the "grüne Wiese" serves a dual purpose: it is at once a symbol of technical mastery and a political tool deployed to counter opposition to nuclear power. This framing suggests that the "grüne Wiese" in Germany evolved into a rhetorical instrument–a way of signaling not only technical competence but also political assurance that nuclear technology could be 210 safely managed throughout its entire lifecycle.

From the early 1990s onward, a further distancing from the original meaning of "greenfielding" as a purely technocratic term becomes visible, as German researchers – seemingly unaware of the shared provenance of the English greenfield and the German "grüne Wiese" in urban development – begin to use the term "green meadow" instead of the "field" in *English-* 215 language reports about nuclear decommissioning projects. For instance, Paczian and Steche speak of "Operation Green Meadow" (1990), while Goertz et al. (1992) name "turning the site into a green meadow" as the goal of decommissioning, and Loeschhorn et al. similarly speak of producing a "green meadow" at the Greifswald and Rheinsberg nuclear power plants. More than the "greenfield", the "meadow" evokes a bucolic image: an open, pastoral space tied to grazing animals and the rhythms of nature. Its use suggests that the authors aren't aware of the "grüne Wiese's" origins in urban planning and its 220 meaning as a blank slate for future development.

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[1] According to an NGO tracking the handling, storage and mobility of all nuclear waste across Germany, some waste was transferred to France for reprocessing, some is buried in the Morsleben final repository for low- and medium-radioactive waste (which is awaiting decommissioning and backfilling amid concerns for the stability of the former salt mine), while other waste was brought to other nuclear sites or interim storage. The released waste (see Novac in this issue) was partly used for backfilling the demolition site and partly stabilized wood trails in the area (Arbeitsgemeinschaft Schacht KONRAD e.V. 2024).

[2] Translated from the German original: "Der Rückbau von Niederaichbach sei ein überzeugendes Argument gegen die Angst vor Kernkraft, sagte Staatsminister Erwin Huber. 'Dieser Abriß ist für uns kein Einstieg in den Ausstieg.' Vielmehr beweise das Pilotprojekt, daß die Kerntechnologie von der Entwicklung bis zum Abbau und zur Entsorgung technisch beherrschbar sei. Bayern setze weiter auf die Kernenergie." (Nürnberger Nachrichten 1995)

Today, the term "grüne Wiese" continues to be used frequently both in media and scientific and governmental publications concerning nuclear decommissioning.[4] In the media, Niederaichbach in particular is still continuously mentioned as the reference point for the feasibility of full decommissioning of a nuclear site, with a strong emphasis on its "grüne Wiese" status.
225    A 2023 short feature by Stuttgarter Zeitung, titled "Nuclear Power Plant Becomes 'Grüne Wiese' – Where Cows Graze on a Nuclear Cemetery", centrally figures the four cows now ruminating the field carefully replanted on the site through added topsoil and seeds (Käfer 2023). The report mentions that "grass has grown" over the non-radiating waste materials from decommissioning that have been used for backfilling the foundation pit. The accompanying picture figures the angus cattle in the foreground and the cooling tower of the neighboring two reactors, Isar 1 (shut down in 2011) and 2 (shut down in 2023),
230    in the background. The image foreshadows the disappearance of this background infrastructure, reiterating the narrative that a true green field is the expected outcome also of contemporary nuclear decommissioning endeavors.

The term's persistence is rather striking because the "grüne Wiese" status has, as mentioned above, never been formally codified in the decommissioning process as regulated by the *Atomgesetz*. A 2009 publication by the Federal Ministry of
235    Education and Research outlines the legal and technical ambiguity:

> Legally, 'decommissioning' ["Stilllegung"] under the Atomic Energy Act (§7 (3) AtG) means the permanent and final cessation of operations at a nuclear facility. In addition, safe enclosure and dismantling of the facility (including the disposal of materials resulting from dismantling) are treated as separate legal matters. // In contrast, in technical language, 'decommissioning' generally refers to all measures following final shutdown, including safe
240    enclosure and disposal. However, even this usage is not uniform, as shown by the fact that many experts also count the restoration of the site to a 'grüne Wiese'–after dismantling the plant sections and buildings within the controlled area–as part of decommissioning. (The term 'grüne Wiese' has become established as a synonym for a site after the removal of buildings and official release.) (Thierfeldt und Schartmann 2009)[3]

Language around nuclear decommissioning in Germany, as this quote shows, operates on various levels, from the legal to the
245    "technical" and more colloquial usages. Here, the "grüne Wiese" is presented as signifying two, or even three, different states of decommissioning, either removal of all parts of the controlled area (which could mean a site with significant remaining infrastructure), removal of all buildings on the site, or as having reached the legal status of official release from nuclear law.

### 2.3 The "grüne Wiese" in activist discourse and art

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[3] Translated from the German original, which reads: "Im rechtlichen Sinne bedeutet ‚Stilllegung' nach dem Atomgesetz (§7 (3) AtG) die dauernde und endgültige Betriebseinstellung einer kerntechnischen Anlage. Daneben werden der Sichere Einschluss und die Beseitigung der Anlage (und damit auch die Entsorgung der beim Abbau anfallenden Materialien) als eigene Tatbestände aufgefasst. // Demgegenüber werden im technischen Sprachgebrauch im Allgemeinen unter ‚Stilllegung' alle Maßnahmen nach der letzten, endgültigen Abschaltung verstanden, einschließlich Sicherer Einschluss und Entsorgung. Dass aber auch dieser Sprachgebrauch nicht einheitlich ist, wird z. B. daran deutlich, dass viele Experten auch alle Maßnahmen zur Wiederherstellung des Geländes zur ‚Grünen Wiese' nach dem Abbau der zum Kontrollbereich gehörenden Anlagenteile und gebäude zur Stilllegung zählen. (Der Begriff ‚Grüne Wiese' hat sich eingebürgert als Synonym für den Standort nach Beseitigung der Gebäude und nach erfolgter Freigabe.)" (Thierfeldt und Schartmann 2009)

Within this ambiguous framework, it is unsurprising that the anti-nuclear movement has seized on the "grüne Wiese" as a symbol of a promise they see as repeatedly broken–particularly in cases where a literal meadow is not the actual end state of decommissioning. In 2021, protesters in Würgassen planted a symbolic "grüne Wiese" in front of the shut-down power plant to oppose the decision to build a central interim storage facility there. Blocking the entry to the nuclear installation with tractors,

255     they spread topsoil and turf while displaying signs saying "Grüne Wiese statt riesige Atomhalle" ("Green meadow instead of giant nuclear building") or "Hier soll es Grünen nicht Strahlen" ("It should be green here and not radiating") ("Wir schaffen die versprochene grüne Wiese" 2021). The protest concerned plans for a large interim storage and logistics site for collecting and reprocessing nuclear waste from across Germany. Locals perceived the planning, which happened at a federal level, as drastically intransparent, and interviewees in media coverage stress that they felt the plans for the interim storage betrayed the

260     promise of the "grüne Wiese" that they had been given when the local plant was initially constructed (Henke 2021).[4]

In the context of a blogpost on discursive framing in the nuclear realm, the prolific German anti-nuclear group *ausgestrahlt* also published a cartoon criticizing the "Fairytale of the 'grüne Wiese'" more broadly. The two-panel strip depicts a small town with towering cooling towers and reactor buildings in the background in the first panel, whereas in the second panel the

265     nuclear installation is replaced by huge nuclear waste barrels, not a green meadow (*Wortklaubereien*, n.d.). The accompanying short text positions the "grüne Wiese" term within a history of deceptive discursive framing in the nuclear industry and pro-nuclear politics in Germany–in reference, for example, to the use of "Kernenergie" instead of "Atomenergie", as the latter was assumed to evoke connections to the "Atombombe", the nuclear bomb (ibid.). Various further entries on the *ausgestrahlt* website also reference the "grüne Wiese" as a hoped-for but never quite achieved state of nuclear decommissioning, calling

270     the term "window dressing" [Augenwischerei] (Becker 2016). Throughout, contributions on the website stress that even once the radioactive material is removed from the site, the question of the final storage remains unsolved, and the material persists into the deep future.

Cartoonist Norbert Pralow, whose visual work around German anti-nuclear activism has been digitized by the Archiv

275     Deutsches Atomerbe, offers his own version of the above-mentioned newspaper image of the cows grazing on the greenfield site of former NPP Niederaichbach. In his one-panel cartoon, the NPP in the background carries a warning sign stating "Careful! Decommissioning!" while the cows speculate whether this future green field will also be theirs to ruminate on. "The green field/meadow is intended for us," one cow states, and the other skeptically asks "Are you sure?" to which the first cow replies, "Absolutely." (Pralow, n.d.) The "grüne Wiese", all these instances of use in anti-nuclear discourse show, acts as a

280     stand-in for the hope of a post-nuclear future at nuclear sites, which some now feel slipping away as the realities of the

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[4] Ultimately, the plans for the large interim storage for the Konrad final storage site in Würgassen were dropped in 2023, citing legal and planning risks and thus doubtful economic viability (Bundesministerium für Umwelt, Naturschutz, nukleare Sicherheit und Verbraucherschutz 2023).

decommissioning and disposal process at large scale set in. The main affect is a sense of distrust, the long history of which continues to complicate conversation about nuclear futures in Germany (cf. Di Nucci et al. 2022).

Finally, I want to mention an art piece which engages with the term in question – though not in the context of a decommissioned
285   power plant. Sophie Hilbert's short film "Strahlend grüne Wiese" ("Radiating Green Field/Meadow") playfully encounters the remnants of the Wismut uranium mining operation situated between the German states of Thuringia and Saxony (Hilbert 2021). Here, literal grass is growing over the radiating remnants of GDR uranium ore production which largely secured USSR nuclear activities. The film merges memories from former workers and officials with those of Hilbert's mother, who lives in the region, and asks about the virtuality of this seemingly natural landscape. "Everything looks so natural," she notes in voiceover over
290   wide and close-up shots of the landscapes. "The technical efforts and all the debates, the political decisions about the remnants of uranium mining are buried, almost invisibly, under this meadow." On a visual level, tentacle-like figures continuously enter the frame, humorously pointing towards the invisible forces, material and socio-political, at play on the site. The green blades of grass filmed in closeup, and all the matters on the site, though, remain "gleefully ignorant of the philosophy, history and the dead assets they have inherited." At a later point, two figures dressed as atoms are shown bobbing lazily in the muddy waters
295   of a pond, again visualizing the remnants of the mining operations now in flux in an ecosystem under environmental surveillance but largely accessible to the public.

The short film closes with a punk song, in reference to a small indie punk festival taking place at the former Wismut site every year. "Realized reuse concepts – bait for the resource sharks of the future", ("Umgesetzte Nachnutzungskonzepte – Köder für
300   Ressourcenhaie der Zukunft") the singers shout, voicing their suspicion that further profit is to be made from a site and region that has already paid a massive price for decades of resource extraction in the name of technological progress and geopolitical conflict. Here again, the "strahlend grüne Wiese" is positioned as a deceptive surface – a carefully cultivated veneer of naturalness that both conceals and is penetrated by persistent radioactive legacies. Hilbert's punning title, which plays on "strahlend" as both glowing and radiating, captures the duplicity embedded in the term itself: what appears verdant and benign
305   continues to radiate invisibly. The film suggests that the "grüne Wiese" functions not as an endpoint of remediation but as an ongoing site of contested futures, where the apparently resolved past remains metabolically and politically active. The greenfield becomes less a promise kept than a promissory note extended indefinitely into a future that must continually manage what cannot be unmade.

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**3 Nuclear Natures, Heritage, and Societal Contestation**

It seems, then, that the "grüne Wiese" in German nuclear decommissioning initially emerged in anti-nuclear protest but was soon taken up as an opportune vehicle for assuaging public concern about the material persistence of nuclear power installations. The two instances where the status was achieved were mobilized by industry and politicians to showcase and
315    publicize the possibility of fully "disappearing" a nuclear site, while neglecting the fact that the site in Karlstein would, in English, be categorized as an industrial *brown*field rather than a greenfield as some infrastructure remains on the site. In this context, its status as a "floating signifier" in the Laclauian sense made the "grüne Wiese" a useful rhetorical tool. The fuzziness of the term in German, its seemingly self-explanatory "mini-narrative" (Mottier 2008) of cyclicality and return to nature, and simultaneously ambiguous use across planning, policy documents, and in the media, helped it "stick" in the public imagination
320    of nuclear decommissioning while also remaining useful in policy. As large-scale decommissioning is setting in after the full phase-out from nuclear power, it now becomes clear that anti-nuclear activists, in reclaiming the "floating" term in their work, insist on its most literal meaning of restoring a green field and make use of the imagery for staging opposition to decommissioning and interim waste storage plans. That the actual decommissioning outcomes will look rather different in most cases, and that the waste question remains unsolved in the medium- and long-term, is positioned as further proof that the
325    nuclear industry and regulators are not to be trusted.

This societal negotiation of decommissioning outcomes also resonates with further debates in critical nuclear studies. Questions around (actual or imagined) nuclear-to-nature land conversions strongly resonate with critical literature on the role of nature and nature imagery in nuclear cleanup and remediation. Most prominently, so-called "weapons to wildlife"
330    conversions have turned former US military sites into ecological reserves (thus avoiding expensive, and often basically impossible, clean-up efforts). Krupar argues that nature here plays a central role in the "rhetorical cleanup operation" that allows for contaminated sites to be rebranded as "postnuclear" (2013, xii), whereas the legacies from the nuclear installations, be they material or social, remain deeply engrained in the ecological and social fabric of the sites. On a smaller scale, the remains of the very earliest nuclear reactors in Chicago have been buried where a forest now invites leisurely strolls
335    accompanied by warnings not to dig at the site (Storm et al. 2019). At the above-mentioned, partly renaturalized Wismut mining site, the Federal Gardening Exhibition 2007 showcased the "New Landscape Ronneburg" landscape park to a wide audience (cf. Ruhland 2019, 161f.). The "grüne Wiese" thus stands in a long tradition of nature as an actor in processes of nuclear "disappearances," where in reality the nuclear material is either left to decay above or below ground, or removed to other sites where, again, geologic and other non-human actors are tasked with securing the material into the far future
340    (Emenegger 2025). The construction of such "postnuclear" natural spaces offers a seductive promise: that nuclear sites can cease to be of concern, as a "nuclear cycle" and chapter of nuclear history is closed. While this is true, to some extent, for the greenfield sites without any remaining contamination from which all materials have been removed, German nuclear communities are now confronted with long-term "interim" storage and the immense and currently unsolved task of finding

and building a deep geologic storage site. The "grüne Wiese" thus promises closure precisely at a moment when societal debate

345 and engagement are needed most urgently.

Furthermore, the desirability of the "grüne Wiese" as the end state of decommissioning remains contested and raises questions about nuclear material and cultural heritage in Germany. If realized in a literal sense, it implies growing grass over important industrial heritage deeply entangled with both West and East German history and societal conflict of the 20th century. Efforts

350 are already being made to preserve the cultural heritage of the German anti-nuclear movement through the Archiv Deutsches Atomerbe, while none of the material sites of nuclear power production are currently under consideration as heritage spaces. A 2017 conference titled *Nuclear Power Plants. Heritage Value and Preservation Perspectives* ("Kernkraftwerke. Denkmalwerte und Erhaltungschance") began to ask questions about the technical and socio-political challenges for preserving power plants as nuclear cultural heritage. As Thorsten Dahme writes in the introduction to the conference proceedings,

355      [i]t seems there is no question that nuclear power plants, perhaps even more so than conventional power plants, have monument value and should be protected. It is a question of credibility and methodical stringency to recognise and select significant sites in their landscape, structural, technical, economic and social context and to include them in the monument lists. (2019, 19)

However, no real progress has since been made. In 2024, an opinion piece in a national newspaper by BASE's former director

360 proposed preserving some, or at least one, nuclear plants as heritage sites (König and Oswalt 2024). A 2024 workshop and subsequent publication (2025) facilitated by BASE further explored the possibilities for nuclear heritage efforts in Germany, developing, among other themes, the suggestion to tie a heritage project to a strategy for long-term communication of nuclear memory – a concern that anyways needs attention as a deep geologic storage project is being developed. However, heritage preservation of one or multiple nuclear sites will never fully address the social frictions and tensions arising as all German

365 nuclear power plants are being decommissioned. Indeed, a heritage project may even spark further controversy if the process is experienced as top-down rather than bottom-up (cf. Ross 2023, 3). Negotiations around nuclear heritage thus need to run alongside further open societal conversation around possible and desirable decommissioning outcomes.

Overall, Yamamoto et al. (2021) suggest that three dimensions of postnuclear land conversions require close attention. First,

370 they propose, a "narrow focus on the outcome of the land use conversion entails the risks of bearing a linear, deterministic view" (ibid. 421) that precludes alternative outcomes and is based on the assumption that the most powerful actors, and most dominant interests (such as economic growth) will prevail over alternative visions in all instances, precluding other potential outcomes such as heritage preservation or ecological restoration of sites. This notion of "locked-in" outcomes is certainly of concern in Germany where most shut-down plants, with the exception of Krümmel and Emsland, have received their full

375 "Rückbaugenehmigung" (decommissioning license) – legal/technical documents of thousands of pages which, among other things, lay out in detail the process of removing all potentially contaminated parts of the plant. While this does not include cooling towers or other buildings beyond the contaminated sections, these are usually part of the larger process planning.

However, such plans can be changed, and local communities as well as other actors (dealing, for instance, with heritage or nature preservation) may be able to insert themselves in various ways. Furthermore, as Von Einsiedel et al. (2024) stress, the

380  spatial ordering that affords nuclear power production (such as siting along larger bodies of water and close to but removed from urban centres) also allows for certain general possible decommissioning outcomes to be considered, making a broader discussion about and view of possible decommissioning outcomes possible.[5] With hundreds of reactors planned to undergo decommissioning in the next decades, the authors suggest, a "widely adaptable transformation strategy is needed to turn NPP brownfield sites into meaningful and functional post-nuclear spaces" (ibid.).

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Second, and in relation to the points raised above, Yamamoto et al. propose that theorizing postnuclear land conversions also requires a "richer conception of space" (ibid.) which moves beyond the site as a material space towards a site of experience, life, and memory embedded in local and global socioeconomic networks of power. This entails, on the one hand, the above-mentioned heritage questions, taking into account how transforming landscapes interact with and shape local identities and

390  memory. On the other hand, the "uneven geographies" (Pitkanen and Farish 2018, 874) produced by nuclear technology can be brought into view by examining sites as complex and highly interconnected landscapes shaped by political and economic networks reaching far beyond its parameters. Here, the "grüne Wiese" can serve as what Gabrielle Hecht has called an "interscalar vehicle" (2018) for moving across temporal and spatial planes, from local sites to federal storage sites, from the early nuclear age to the future of nuclear waste disposal. Its status as a "floating signifier" contested from various sides

395  showcases how seemingly simple or mundane questions around individual nuclear sites (i.e. "what will happen here once the reactor is removed?") are deeply entangled with broader nuclear politics and governance.

Third, Yamamoto et al. stress, the concrete social forms of agency at play in decommissioning processes require close attention. For instance, whereas the broader public may have a preference for a "grüne Wiese" site or heritage preservation efforts, local

400  communities may prefer industrial reuse or other outcomes; equally, as the Karlstein site shows, various actors, from industry to local politics or civic sustainable energy organisations may engage in long-winded negotiations about land conversion outcomes. A survey from 2015 found that more than 30% of interviewees were familiar with the term "grüne Wiese" in the context of the decommissioning of "their" nuclear power plant (Kretz 2015, 133), and one can assume that many are expecting a literal green meadow to be the endpoint of the decommissioning process. When this expectation is not met – whether due to

405  interim storage facilities, industrial redevelopment, or other post-nuclear uses – the gap between promise and reality risks generating precisely the kind of mistrust and opposition that the term was initially deployed to prevent.

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[5] For instance, as now also seems to be likely in many German cases, industrial redevelopment is an option that can make use of existing energy infrastructure while, as Von Einsiedel et al. stress, "alleviating development pressures on nearby greenfield sites" (ibid. 35) (greenfield here referring to actually undeveloped land) and encouraging (sustainable) transformation of local economies. Furthermore, siting along rivers makes former NPPs suitable sites for flood protection and the protection of wildlife habitats (ibid.).

## 4 Beyond the German Case

The aim of this contribution was threefold. First, to trace the provenance and uses of the expression "grüne Wiese" in German nuclear decommissioning discourses; second, to showcase and examine its use in anti-nuclear activism and art, and third, to
410    think about how my findings resonate with existing work in critical nuclear studies and nuclear heritage discourses. It is clearly timely to think, and more important, to talk openly about the potential outcomes that decommissioning processes all over Germany are going to have, and to tie this into ongoing debates about nuclear heritage and socio-economic processes of change and loss associated with the decommissioning of large industries on a local level. My investigations show how the "grüne Wiese" term, as a "floating signifier" moving on different discursive planes from the literal to the metaphorical, has been
415    positioned to assuage fears about nuclear power production, and to portray a cyclical temporality of nuclear power production that now is proving unrealistic as we are entering an intensive phase of decommissioning and the search for a final repository. A sense of betrayal resulting from this mismatch has been picked up by anti-nuclear activists and is voiced in various ways.

Many facets of the problem at hand have of course remained outside the scope of my investigations. For instance, as my
420    mentioning of IAEA publications around reuse concepts of former nuclear sites alludes to, this debate extends far beyond the German context. In 2017, the Lithuanian National Drama Theater premiered a documentary play titled "A Green Meadow" exploring the hopes and fears of residents of Visaginas, where a nuclear reactor is being decommissioned. While not central to the plot of the play, the title and treated themes of worries about loss, economic decline, and promises made by operators, point to a similarly structured discourse around nuclear decommissioning in Lithuania (Ribačiauskas et al. 2017). Concerning
425    the use of the "grüne Wiese" term in the German-speaking context, Switzerland is seeing similar debates as it has begun decommissioning of the Mühlberg NPP which takes on a similar pioneering role as the Niederaichbach site. France, in contrast, seems to have no comparable debates; here, a rhetoric of reuse and economic redevelopment is central to the local reception of decommissioning efforts, as seems to be the case in the US as well. It would of interest to comparatively study national discourses of reuse of nuclear sites of the last decades, as well as actual decommissioning outcomes.

430
Finally, tying in with the theme of this special issue, the "grüne Wiese" illustrates how ordinary language can do substantial work in nuclear energy cultures. A meadow, a field of grass, a grazing cow are among the most familiar images in the European landscape, and yet in the context of German nuclear decommissioning they carry the weight of decades of technological promise, societal conflict, and unresolved heritage and waste questions. The phrase shapes what a post-nuclear future is
435    imagined and demanded to look like, and the gap between that imaginary and the realities of decommissioning on the ground continues to generate friction. Attending to such seemingly simple expressions, this article suggests, is one way of tracing how nuclear pasts and futures are negotiated in the everyday.

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