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Politicizing hydroelectric power plants in Portugal: spatio-temporal injustices and psychosocial impacts of renewable energy colonialism in the Global North

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ABSTRACT

The extent to which infrastructures being deployed for a postcarbon transition can be considered sustainable has been increasingly scrutinized within the critical turn in energy justice research. However, the focus therein tends to be on how new megaprojects still reveal Global North–Global South colonial relations and energy-related injustices. In this paper, we aim to contribute to widening critical energy justice research by illustrating how it needs to also consider the spatio-temporalities of renewable energy colonialism in the Global North. To that end, we undertake a psychosocial historiography of selected large-scale hydroelectric power plants in Portugal, from the twentieth century to the present day. This historiography is undertaken via archival data and interviews. Our analysis illustrates how hydrocolonialism has been enacted – discursively, infrastructurally, and psychosocially – in rural areas in Portugal, across different socio-political regimes; and also how it can be contested, by identifying some examples of resistance.

KEYWORDS

Energy colonialism; infrastructural harm; resistance; hydroelectric power; Portugal; psychosocial historiography

“We are the dam engineers!” – said a young boy. An old woman, with a prophetic look to her, walked towards them and, staring at them, said: “– We don’t want the cut ... we don’t want the dam here.” (...) The women got closer together. And, all at once, fascinated by the old woman, exclaimed: “We don’t want the cut! We don’t want the dam here!”. (Telmo Ferraz, 1960)

1. Introduction

The area of land exploited for energy production activities, both fossil and renewable, is tremendous and continually expanding. For instance, in the USA alone, and according to the 2100 Atlas for the Green New Deal, ‘meeting the energy consumption needs of the next 100 million Americans (c. 2050) would require 150,415,603 acres of wind farms, nearly the total land area of Texas’ (The McHarg Center, 2021). At the same time, a recent report revealed that different renewable energy companies are guilty of several faults regarding human rights indicators in

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their operations and supply chains (Business & Human Rights Resource Center, 2021). These facts illustrate that the way energy production activities – both fossil and renewable – are performed within the capitalocene (Moore, 2016) are contributing to a slow and cumulative infrastructural necropolitics (Mbembe, 2003; Truscillo, 2020). This means that energy infrastructures – hydropower plants, wind farms, high voltage power lines – dictate which communities, livelihoods, and ecosystems are allowed to exist and stay and which must die, or disappear as it were.

This has been increasingly discussed within the critical turn in energy social science research (Batel, 2020; Levenda et al., 2021). This turn has started to uncover the colonialist underpinnings of renewable energy transitions (Batel & Devine-Wright, 2017; Dunlap, 2018; Finley-Brook & Thomas, 2011). These transitions are largely being pursued via the same form of extractive relations (and thereby oppressions) of previous iterations of colonialism which fed the Industrial Revolution and modern capitalist, unequal and overconsuming societies (Daggett, 2018; Levenda et al., 2021). The large-scale wind farms being deployed by Global North multi-nationals in Oaxaca, Mexico (Dunlap, 2018), or the Desertec project originally designed for wind farms and solar plants to be deployed in the North of Africa and Middle East to feed the European grid (Batel & Devine-Wright, 2017), are unequivocal examples.

Thus far, these critical interpellations have often been framed by an environmental/energy justice (EJ) framework and praxis (Batel & Devine-Wright, 2017; Levenda et al., 2021). Energy justice (EJ) has commonly been proposed as an evaluative and normative framework that aims to explore ‘the multiple sites of injustice that can occur throughout global energy systems’ (Jenkins et al., 2016, p. 176). This is enacted across three dimensions: procedural,¹ distributive,² and recognition.³ The critical approach to considering justice in energy transitions has then added another key perspective to EJ: thinking of EJ in a global decolonial perspective (Menton et al., 2020; Walker, 2009), aware of continuous colonial violence and dispossessions enacted by the Global North upon the Global South, and also within so-called low carbon energy transitions.

However, renewable energy colonialism is not enacted only in Global North–Global South relations, but also through other core-periphery structural power relations (Murphy & Smith, 2013; Zografos & Martínez-Alier, 2009). Namely, between the urban and the rural spheres, including in the Global North (Dunlap, 2020). Thus far, these issues have been more neglected in social science energy research literature on renewable energy infrastructures and EJ. As we will further argue below, this might be because both historical and spatial dimensions of energy justice have not been often enough conceptualized and examined in that literature domain (Dechézelles & Scotti, 2021; Förtner et al., 2021).⁴ To illustrate the relevance of incorporating these dimensions of EJ in order to reveal and contest renewable energy colonialism also in the Global North, we will present an analysis of how hydropower has been historically and spatially enacted within Portugal. With this analysis, we aim to do the following. Firstly, demonstrate that only by historicizing and spatializing EJ – namely, by analysing the role of certain territories across time in (renewable) energy transitions – can we reveal the power relations of domination and exploitation that constitute renewable energy colonialism. Secondly, we aim to begin revealing how renewable energy colonialism, specifically hydrocolonialism, has been transpiring in Portugal – infrastructurally, discursively and psychosocially.⁵ This will also include identifying cases of resistance, to show how despite hydroelectric power plants and other energy infrastructures often being deployed throughout the decades as a *need for the common good* and as unquestionable infrastructures towards *progress* (Castán Broto, 2016), local communities were often still able to contest and to politicize them from below.

2. Renewable energy colonialism or the need for spatializing and historicizing energy justice

Within most of the still expanding research on communities' responses to large-scale renewable energy generation and associated infrastructures, local resistance still tends to be conceptualized as an outcome of a lack of mainstream procedural and/or distributive justice in relation to a given project and/or to the regulatory frameworks for the deployment of particular infrastructures (see Batel, 2020; Levenda et al., 2021; Menton et al., 2020). As such, this research often dismisses how the deployment of these infrastructures builds upon, reproduces, and exacerbates historical structural power relations and dynamics – more specifically, territorial ones operating between the urban and the rural (cf Avila, 2018; Temper et al., 2020).

Rural territories have historically been key spaces of accumulation by dispossession of fossil industrial capitalism (Harvey, 2006; Latorre et al., 2015). This has happened not only infrastructurally in order to sustain urbanization and consumerism – through earth-moving and extraction machinery, through abandoned quarries – but also discursively. Rural areas have been discursively reified throughout time as spacious and rich in natural resources by policymakers, energy companies, infrastructure developers, and researchers alike. As such, they are presented as the 'natural' geographies for those infrastructures (Ashwood et al., 2019). This discourse on the rural is similar to how the 'desert' and 'wild' lands of the Global South are often imagined and fantasized of, based upon a colonialist collective psyche (Batel & Devine-Wright, 2017; Edwards, 2011), which projects the Other as 'terra nullius', empty land, there to be exploited and used for the 'development' and 'growth' of Western (read: neoliberal and capitalist) ways of living, and in a way that appears legitimate. This violence – at once infrastructural, discursive and epistemic (see also Davies, 2019) – is enacted through the material and symbolic 'emptying out' and 'rhetorical replenishments' (Nixon, 2011, p. 165) of rural areas. Historically, this has rendered them 'sacrifice zones'. In this way, rural communities are often dehumanized, disempowered, and made invisible as part of those urban-rural circuits of privilege and dispossession (Fine, 2016; Normann, 2021). This urban-privilege and rural-dispossession colonial dynamic is clearly being reproduced by so-called renewable energy transitions, and not only within Global North–South relations, but also within nation states of the Global North.

As Sayan (2017) recently emphasized, EJ frameworks have often neglected the 'urban/rural division as a group difference, based on which rural communities face with socio-environmental burdens of environmental policies in relation to their urban counterparts' (p. 1510). This erasure and discrimination of rural areas via renewable energy transitions has also been examined by Ashwood et al. (2019) in the context of the legal enforcement of spatial and environmental injustice within current for-profit democracies. Likewise, McKeon and Berron (2020) have noted that rural transformations have historically been driven by the political economy of resource extraction functioning as resource peripheries (Murphy & Smith, 2013): in turn, this has always impacted and continues to impact upon rural communities and livelihoods. To that end, EJ research has so far 'poorly addressed the political and economic patterns of control and access to resources' (Velicu, 2020, p. 417). Acknowledging that EJ within renewable energy transitions in the Global North is also spatialized is, then, crucial as part of a critical uptake of EJ (Menton et al., 2020). Namely, as being constitutive of an EJ framework which is decolonial and contests social inequalities and structural relations of domination. However, as has also been pointed out by McKeon and Berron (2020), we cannot understand the critical potential of accounting for this territorial dimension of EJ without considering how it is also enacted across time.

Renewable energy transitions are materialized from project conception to decommissioning, from governance structures to planning systems, over time and thus operate over generations and across history, as enacted and perpetrated by the different stages of infrastructural life (Anand et al., 2018). An example is given by Batel and Devine-Wright (2017), of local communities in Wales opposing power lines to connect to new wind farms from Wales to England. Community members justified their opposition through the colonial underpinnings of these infrastructures, anchored in the collective memories and intergenerational psychosocial harm associated with the construction of hydropower plants throughout the nineteenth and twentieth centuries in order to provide England with water, and the consequent submersion and displacement of Welsh villages and rural communities. This case not only illustrates the relevance of further historicizing people-energy relations and to emplace them and related attachments, but also how the intersections between these historical and territorial dimensions of EJ and related infrastructural harm and psychosocial impacts can also relate to renewable energy colonialism as an analytical framework.

The critical contribution that energy colonialism as a framework can have has also been hinted by Dhillon (2021), when calling attention to the need of recognizing the links between current environmental racism and the historical connections between capitalism and colonialism:

when we step back and critically consider broader claims for social justice, we must ask how environmental forms of violence work hand in hand with other forms of violence to quell political resistance and create conditions of deprivation and containment that work against collective action. (Dhillon, 2021, p. 9)

Colonialism works to eat, absorb, and assimilate (Dunlap & Jakobsen, 2019) racialized and marginalized others, and thought of in this way can be very pertinent as a critical tool to expose other domination and exploitative relations and forms of spatialized and epistemic violence (Davies, 2019). As such, it allows for the contestation of that which is often taken for granted as well as naturalized divisions, such as between the urban and the rural (Castán Broto, 2016; McKeon & Berron, 2020), or between fossil and renewable. Discussing renewable energy colonialism can be useful precisely because it can not only widen and enrich EJ with its historical and territorial background (and its intersections with race, ethnicity, gender, and class) (Dhillon, 2021; Menton et al., 2020; Velicu, 2020), but also expose the contradictions, impossibilities, and dystopias inherent in the global rhetoric of green transitions and sustainability (Parson & Ray, 2018). Furthermore, it allows consideration of the material enactment of energy injustices, namely through infrastructural colonization, which draws ‘continuity between infrastructures and political regimes, recognizing an infrastructural “colonial present” both north and south of the globe’ (Dunlap, 2020, pp. 112–113).

As a framework, renewable energy colonialism thus demands a concurrent examination of the infrastructural and discursive dispossessions, deceptions and injustices fostered and reproduced by capitalist renewable energy transitions, in their historical, territorial, epistemic, racialized, gendered, and other structural dimensions. This includes a consideration of their psychosocial impacts – including possibilities for resistance, or for politicizing infrastructures often presented as taken for granted and unquestionable. Indeed, adopting renewable energy colonialism as a lens of analysis that brings to the fore the territorial and historical dimensions of energy infrastructures also permits us to inquire into infrastructural futures (Anand et al., 2018). Namely, to also consider the eco-psychosocial impacts and possibilities created by infrastructures as plans, as projects, and as colonizers of people’s future-oriented expectations (Groves, 2015).

Velicu (2020) proposes the notion of prospective EJ to account for injustices created by planned natural resource extraction – in the case of her research, by planned opencast goldmines in rural communities in Bulgaria and Romania – which have caused severe psychosocial impacts whilst local communities endured ‘more than a decade of waiting for the “actual harm” of mining to happen’ (p. 414; see also Kirchherr et al., 2018). However, considering infrastructural futures might also allow for prospective justice, namely, for opening up new spaces and temporalities which enable the reconsidering, repurposing, redistributing, and redesigning of previously harmful energy infrastructures (Giovanopoulos et al., 2020). Communities’ protests and other forms of direct action against energy infrastructures and particularly renewable energy infrastructures have been increasingly documented by activists, academics and in the media (see Dunlap, 2018; Hess et al., 2021; Temper et al., 2015). This accompanies the borne out failure of globalized capitalist promises of prosperity, particularly acute in rural areas, which continue to be asked to endure their socio-territorial stigmatization also for the sake of a renewable energy transition (Dechézelles & Scotti, 2021). As such, infrastructures became political/governance enactors that could also allow for the reconfiguring of structural power relations and associated dispossessions (Aalders et al., 2021). Considering infrastructural harm and futures as a key component of renewable energy colonialism can, therefore, help with critical bifocality (Fine, 2016), by considering not only in which ways renewable energy colonialism and related injustices are materialized through infrastructures as techno-capitalist and colonialist devices (Dunlap, 2020), but also by providing futures, possibilities for resistance, and for empowerment and sovereignty (Giovannopoulos et al., 2020).

We will now empirically illustrate the relevance of renewable energy colonialism as a framework in order to bring to the fore the spatial and historical dimensions of energy justice and to enable the analysis of their discursive, infrastructural, and psychosocial enactments and impacts, including possibilities for contestation. This will be done through a psychosocial historiography of key large-scale hydroelectric power plants in Portugal.

3. Context: large-scale hydroelectric power plants in Portugal – from dictatorship to democracy

The Portuguese state often presents itself as one of the frontrunners of the renewable energy transition (Carvalho et al., 2019), with the Portuguese renewable energies association (APREN) reporting that in February 2021, 5066 GWh of electricity was generated in Portugal (mainland) of which 88.5% is presented as coming from renewable sources and including roughly 45% generated by hydropower, mostly large-scale dams (Figure 1).

However, large-scale hydropower plants can have enormous socio-ecological impacts at the time when they are built, with forced relocations and expropriations which end livelihood practices and farming (Sarrica et al., 2016). Furthermore, hydroelectric power plants exert continuous impact throughout their lifetimes, such as climatic alterations, reducing water quality, and cultural loss (Zanotti, 2015) as well as biodiversity loss (Kirchherr et al., 2018; Rede Douro Vivo, 2021). This includes psychosocial and other health and life-threatening impacts (e.g. annoyance and associated stress and sleep deprivation; reduced well-being and health after relocation) which are increasingly reported amongst rural communities living with energy infrastructures (Kirchherr et al., 2018; Mayer et al., 2021; Nixon, 2011; Pohl et al., 2018).

The use of water for producing electricity in Portugal began mostly in the final decade of the nineteenth century, initially being primarily for local consumption and for textile and milling

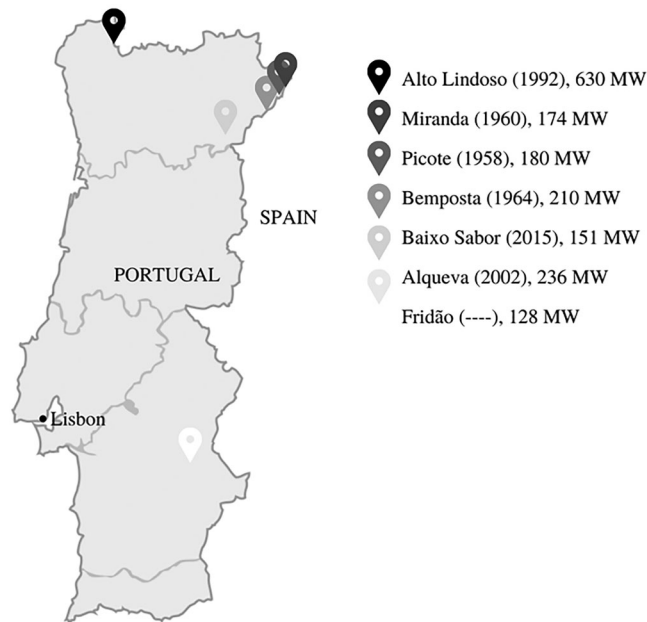


Figure 1. Focused hydroelectric power plants in Portugal.

workshops (REN, 2002). From 1930 onwards, and under the dictatorship (1926–1974), the aim of industrializing the country promoted plans for the construction of large-scale hydropower dams able to electrify the country and its growing energy consumption – as well as guaranteeing security of supply through ‘endogenous’ resources. This was, of course, typical of the overtly nationalist narratives of the dictatorship. In Portugal, similarly to other countries, the twentieth century was then characterized by the spread of hydraulic capitalism through ‘post-war and post-colonial pursuits of modernization and nation-building’ (Huber et al., 2017, p. 49; Nixon, 2011). A ‘high-modernist’ ideology (Scott, 1998), based on the idea of progress as human control over nature exerted through science and technology, was dominant in Portugal, especially during the dictatorial *New State* period (Santos Pereira et al., 2017).

As with Spain during the Franco dictatorship, the Portuguese *New State* fascist⁶ dictatorship was deeply characterized by the repression of any attempts at contesting it, its rules, and actions (Silva & Ferreira, 2019). This was compounded by the imposition of a strong patriarchal, racist, and hetero-normative society which supported, amongst other things, the building of hydropower plants. Male engineers easily relocated to the construction sites with their spouses and children, with women expected to comply only to their domestic, reproductive, and family-oriented roles. As such, male upper-class engineers were the professional and social class responsible for leading these infrastructural transformations and by extension the imposition of associated ideologies (Silva & Ferreira, 2019), based on the beliefs of engineering, industrialization, and progress (Anshelm & Hultman, 2014; Castán Broto, 2016; Daggett, 2018).

These hydraulic politics led to the creation of the national electricity grid in Portugal and to its consolidation as a centralized system. After the military-led Carnation Revolution put an end to the dictatorship in 1974, EDP – ‘Electricity of Portugal’ – was created under the First Portuguese Constitutional Government as a nationalized company and would become the main entity responsible for the construction and management of hydroelectric dams.

In 2007, the ‘National Portuguese Plan for Dams of High Hydroelectric Potential’ (PNBEPH) was proposed. This plan aimed to construct 10 very large dams – including Baixo Sabor and Fridão – until 2020, with the goal of reaching a national total of 7000 MW of installed hydropower capacity (Carvalho et al., 2019). Concessions to build these dams went mainly to EDP, but also more recently to other large companies, specifically from Spain, such as Iberdrola and Endesa.

Recently, the Picote, Miranda and Bemposta dams entered the spotlight due to protests organized by the cultural and civic movement *Terra de Miranda*, created in 2020 specifically to contest injustices related with these dams and comprised of people who were born and/or live in the region, amongst others. *Terra de Miranda* refers to a region in Portugal that is affected by these dams whose own language, *mirandês*, is the only other official language in Portugal (officially recognized in 1999) besides Portuguese, and which was repressed during the dictatorship. The movement is reclaiming their right to benefit from the tax revenues generated by the dams, particularly from their recent sale of EDP to Engie, a French consortium. This reflects the fact that revenues created by these dams do not benefit the regions where they are located, given that they revert to the fiscal area of the companies who own the dams, in this case EDP, located in Lisbon. The sale of the dams was announced in December 2019 (concluded in December 2020) and includes Picote, Miranda and Bemposta as well as Baixo Sabor, Foz Tua and Feiticeiro. A brief chronology and relevant aspects of key hydropower plants constructed in Portugal across the twentieth to twenty-first centuries can be found in Table 1.

4. Method and procedure

The brief chronology of key hydroelectric power plants in Portugal presented in Table 1 focuses upon paradigmatic examples of hydroelectric projects in Portugal and will be further analysed below. This psychosocial historiography to be presented – that attempts to retell the history of these dams through their discursive constructions, lived experiences, and psychosocial impacts and embeddedness – relied both upon primary and secondary sources of data. Secondary data sources involved archival footage from journalistic ‘Rádio e Televisão de Portugal’ (RTP, Portuguese TV public channel since 1935) pieces (19 videos, total 38 min length). The videos were selected based on search keywords such as ‘dam’ and ‘hydropower’ and the name of the abovementioned dams/regions (i.e. Alqueva, Fridão, ...); public documents and grey literature on hydropower in Portugal were also used as a source of secondary data, specifically to provide the information included in the previous section. Furthermore, the book ‘L Lhodo I Las Streilhas/ The Mud and the Stars’ by Telmo Ferraz, who was a priest at the Picote and Miranda dams during their construction in the 1950–1960s provides a report of the workers’ living conditions,⁷ and was also used to inform the analyses. Finally, articles published in *Público* (a newspaper of reference in Portugal) regarding the selling of the Miranda, Picote and Bemposta dams during 2019–2020 ($N = 12$) were also used as a source of secondary data. The articles were selected based upon search keywords such as ‘dam’ and ‘EDP’, and the name of the dams/regions of interest (i.e. Miranda, Picote, Bemposta). All these materials were collected during the period January–June 2021.

Regarding primary data, two narrative interviews with participants in the movement *Terra de Miranda* were conducted online, due to COVID19 related restrictions, in May–June 2021 (average length 1 h 30 m).⁸ The interviews asked participants to tell the story of both their own and their communities’ relations with the dams ever since they were constructed.

All the data, apart from that presented in Section 3, was analysed based on pragmatic discourse analysis (Batel & Castro, 2018), with a focus on identifying the main discourses related with the

Table 1. Key characteristics of the focused hydropower plants in Portugal.

Dam	River	Installed capacity	Year of final construction	First announced	Interrupted and announced again?	Villages/houses submerged	Political regime at final construction
Picote	Douro River	180 MW	1958	ND	ND	No	Dictatorship
Miranda	Douro River	174 MW	1960	ND	ND	No	
Bemposta	Douro River	210 MW	1964	ND	ND	No	
Alto Lindoso	Lima River	630 MW	1992	ND	ND	Yes, in Galiza (Spain)	
Alqueva	Guadiana River	236 MW	2002	1968	Yes (1976–1978)	Yes, Aldeia da Luz	
Baixo Sabor	Sabor and Douro Rivers	151 MW	2015	ND	ND	Yes, houses/farms	
Fridão (cancelled)	Tâmega River	–	2019 (cancelled)	1950	Yes (1991–1993)	Yes, if built	Democracy

Note: ND = No data.

Sources: REN (2002); RTP Archives; *Público* articles.

justice dimensions of hydroelectric power in Portugal and with the infrastructural harm, discursive construction, and psychosocial impacts – including contestations – of the selected dams.

5. Analyses and findings

5.1. Discursive enactments of hydrocolonialism in Portugal

A key materialization of hydropower energy colonialism in Portugal lies in its rhetorical enactment. This entails ascertaining the affected rural territories and communities as being in need of development and jobs provided by dams. This was clearly stated by the Mayor of Serpa, Alqueva, in 1978:

It [the Alqueva dam] will bring enormous possibilities in the improvement of the agricultural conditions (...). The populations will benefit immensely with this enterprise (...) unemployment will this time be eventually over. [RTP, 24-01-1978]

However, and as shown in [Table 1](#), the Alqueva dam had a prophecy-like existence, being cancelled, and reinitiated several times, only to be completed in 2002. This is also highlighted by a RTP journalist in 1993:

The construction of the [Alqueva] dam is a long-time aspiration (...) but there is still much time to wait, in 8 years the dam will be ready and producing electricity; the irrigation networks will still take 30 years. [RTP Archives, 26-02-1993]

One key aspect of the rhetorical enacting of this hydrocolonialism as illustrated here, is then a temporal mismatch, between the ‘real’ temporalities of the so-called benefits of the dams to the local communities and territories – to only materialize over a period of decades – and how those are presented by governmental authorities, that is, as not concretely timed, but soon to come, in the (near) future. This is also clear in the speech of the then Portuguese prime minister in 2009, in relation to the Baixo Sabor dam:

It is considered the mother of the new dams’ program, a strategic investment that also gives jobs (...) These investments are absolutely crucial to fight the [2008] crisis, to promote employment, to give opportunities to companies, but they are also absolutely essential to increase the strategic autonomy of our country, so that we do not depend on fossil fuels as much as we did in the past. [RTP Archive, 17-02-2009]

This illustrates how the discursive construction of these different dams in different periods and under the ethos of different socio-political regimes is built upon a similar rhetoric of solving problems in rural areas in Portugal, especially inland, such as lack of water, unemployment, and a lack of socio-economic perspectives. This is true from 1968, when the Alqueva dam was first announced under the dictatorship, to 1978 when its construction works restarted soon after the Carnation Revolution, to 2009 when the Baixo Sabor dam was announced under the democratic regime. At the same time, these discourses conceal the fact that the dams were being used to foster the industrialization and urbanization of the country, especially in coastal/urban centres, and also that the promised jobs and socio-economic development are, in fact, tentative and non-consequential. Namely, that for these governments and the companies in charge they are uncertain estimations and projections. In 2009, that rhetoric is only then slightly adjusted to also include the anti-fossil fuel norms as well as to the increasing commodification of the Portuguese central government, being primarily concerned not with the lives of rural communities, but instead in ‘giving opportunities to companies’ and, namely, EDP or similar hyper-capitalist corporations. This shows the

amenability of hydroelectric power to different political regimes and energy transactions⁹ (Franquesa, 2018) due to its inscription within neoliberal capitalist and extractive, colonial logics.

5.2. Hydrocolonialism as infrastructural harm

Portuguese hydroelectric power politics can therefore be considered, since their inception, as being closely entangled with energy colonialism, exploiting especially rural inland territories for the extraction of a common natural good for the main benefit of those exploring it from distant, urban areas, whilst only leaving behind infrastructural harm and various other (often negative) socio-ecological outcomes (e.g. abandoned quarries, the loss of river ecosystem biodiversity, disruption of associated livelihoods due to the infrastructural blockage/cut of the river, loss of traditional agricultural practices due to greenhouse effects). Whereas this exploitation of and disinvestment in rural areas has not only been perpetrated by hydrocolonialism, hydrocolonialism is nonetheless a clear materialization of the core-periphery colonial logic shaping the relations between urban and rural territories. This dynamic is also present in the Global North, and this logic has not changed in Portugal across changing socio-political regimes, or between energy transitions. In reality, local communities continue to neither be able to have a say in the construction of dams in Portugal (Carvalho et al., 2019), nor to benefit, in terms of local socio-economic development, from their construction. Throughout the history of hydroelectric power plants in Portugal, no economic compensations were given to affected regions and no significant enduring socio-economic development was created in those territories after the construction of the dams (Velosa, 2009; Wateau, 2014). In order to legitimize this distributive-territorial injustice, a key facet of energy colonialism is then the slow but cumulative material and infrastructural dispossession of those rural territories, in such a way as to allow their discursive essentialization (Batel & Castro, 2018) as ‘poor’ and ‘in need of development’. This is clearly pointed out by the participants in the movement *Terra de Miranda* in relation to the Picote, Miranda and Bemposta dams (built in the 1950s–1960s):

Since the construction of the dams, Terra de Miranda has already lost two thirds of its population, and we got used to that, the inland territories of the country are losing population for 60 years or more, we got used to the idea that this is unavoidable, it's a law of nature, the inland territories of the country lose population as the sun rises every day. (Participant 2)

Everything [hospitals, schools, public transports, ...] has been taken away bit by bit, and people kept living with that taking away, with that disinvestment here from the region (...) here we feel abandoned of everything. (Participant 1)

These extracts plainly describe how these rural territories became ‘territories of material and psychic abandonment’ (Dhillon, 2021, p. 1) ever since these infrastructures were constructed – with the dams being retrospectively used to materially and chronologically mark the beginning of that slow necropolitics. The dams could have been built to also contribute to the socio-economic maintenance and quality of life of these territories throughout the years. Instead, the abandonment and associated territorial and long-term injustices that these infrastructures produced are very well described here as a form of slow violence (Nixon, 2011), enacted throughout time ‘bit by bit’ in a way that helps to hide those (collective and cumulative) injustices (Goldstein, 2017), so as to normalize and naturalize them, thereby rendering them familiar and becoming as taken for granted as the sun rising every day. The agents of this slow death of a territory, a community, and its culture (including the *mirandês* language), are also clearly identified by participants in the *Terra de Miranda* movement:

Douro Hydroelectric [responsible for constructing Picote, Miranda and Bemposta dams], ceased being a local company, the nationalisation of EDP happened and EDP stopped having the sense of redistributive justice that Douro Hydroelectric had, I think the country initiated an extractive attitude in relation to that territory. (Participant 2)

We are not against the dams (...) the dams are well done, they generate wealth for the country, the only problem is that they only create wealth to a country which is the coast (...) we are here fighting against a power which is almost a country within a country, EDP (...) EDP is here only with an attitude of extracting wealth and of not hearing the populations. (Participant 1)

Hydrocolonialism is clearly described in the above quotations as based upon and reproducing urban core-rural periphery territorial power relations (Finley-Brook & Thomas, 2011) and associated circuits of privilege and dispossession (Fine, 2016) enacted both materially and infrastructurally. These colonial underpinnings of hydroelectric power in Portugal seem to traverse the country from the dictatorship to democracy (with, of course, extreme differences between regimes – see Silva & Ferreira, 2019), and to be perpetrated through the promiscuous relations between the central governments and EDP, and the centralization and commodification of the governance of hydropower. In turn, the way this hydrocolonialism was materialized infrastructurally simultaneously revealed it and made it invisible. This was clearly stated by Participant 1 from the *Terra de Miranda* movement:

The wealth [generated by the dams] leaves through the high voltage cables, if it left from here in trucks, like in the region where they produce shoes, they have trucks filled with shoes, people would already have become aware of it a long time ago, isn't it? (...) the dams are buildings that are there, more or less hidden, and they don't stand out much, they are gigantic buildings that are put under the mountains and also under the riverbed. And so, they go unnoticed. (Participant 1)

In the case of the Miranda, Picote and Bemposta spillway dams, their characteristics allowed them to be hidden in the landscape in such ways as to also hide the infrastructural harm (on local ecosystems and livelihoods, on people's relations with place, etc.) and the injustices fostered by them. As Ferrario and Castiglioni (2017) have argued, whereas this 'hiding' can be seen as trying to include social considerations in the deployment of the dams, it can also be seen as helping to conceal associated harm and injustices, which, coupled with the invisibility of electricity (that leaves the region hidden in high voltage cables), thereby becomes easily silenced and thus normalized. This same psychosocial colonization – which created a subjectivity that accepts and naturalizes the local and individual harms and injustices created by the dams – occurred also in relation to the quarry built in order to allow the construction of the Miranda dam and which was then left open in the middle of the town. This is explained by Participant 2 of the movement:

I often say that that quarry was my kindergarten, that quarry with a 40 m height, ok? It is a hole located in the middle of the town and has 20.000 meters of diameter. (...) And I never had the awareness of the seriousness of that, of the monstrosity that it is, and only now I became aware of that, that it is inadmissible that that is there like that (...) But I was born there, that's it, I was born there. I played there, I fell from the quarry and I don't know how I didn't die. (Participant 2)

This normalization of the harm caused by the quarry is illustrative of the hydro-colonial subjectivities which these infrastructures created. Only now, many years after the construction of these dams, local communities have become aware of the infrastructural harm they cause. This consciousness was further fostered by testimonies, registered in literature and oral history (Ferraz, 1960), that were recovered by the movement *Terra de Miranda* and which give an account of the different necropolitical entanglements of these dams over long-term timescales. These include

the many deaths of men who worked in the dams and quarries, due to the lack of safety measures and to the toxicity of the materials they were exposed to.

5.3. *The spatio-temporalities of the psychosocial impacts and contestations to hydrocolonialism*

The dams and their infrastructural harm are then simultaneously in and out of sight (Davies, 2019): simultaneously materialized in the fatalities caused during their construction, and in the slow disappearing and death of the rural communities living nearby and their socio-cultural practices; simultaneously materialized in the cumulative local impacts on the environment and related livelihoods (Rede Douro Vivo, 2021), and in the clear socio-economic abandonment of these rural regions. However, the violence generated by this energy colonialism takes place not only during dam construction and operation phases, but also when communities faced long ‘waiting’ times of uncertainty, not knowing if and when the dams would be constructed (and with said construction, submerge entire villages and uproot communities from important places of attachment and socio-economic activity). This is clearly put, as shown below, by local residents affected by the Fridão dam in 2010, a dam which was many times planned, projected and delayed, only to be eventually cancelled in 2019:

I have seven mill wheels grinding, if they take that away from me, only if I go to the entrance of the town hall to beg with a bag. Because I do not have, I still have a daughter studying and, of course, we will really be left with nothing. (RTP Archive, 29-03-2010)

Do you see that house over there? The dam will reach the middle of my house. (...) But I still do not know about anything, nobody has warned me of anything, that I will have to leave [my house]. (RTP Archive, 29-03-2010).

In the first quote, a resident highlights how their family livelihood and future, reliant on seven mill wheels to be submerged by the Fridão dam, would be completely destroyed if this dam is built. The same is stressed by the resident in the second quote who highlights that despite the tremendous impacts of these plans on people’s lives and senses of being, they are not recognized at all as being profoundly affected nor as being sufficiently relevant to be informed about those plans. In short, they are ignored and erased as if not existing. These quotations illustrate well then how one of the key components of energy colonialism is to assume these rural areas as *terra nullius*, nobody’s land, free to exploit and extract, to plan and project, even before any infrastructure materially exists. Moreover, there is seemingly no reason to recognize or even understand local rural communities as political subjects. Rather, their subjective agency is subjected to a forced erasure via the ruthless logic of hydrocolonialism. This spatial amnesia (Nixon, 2011) is also clearly expressed by a local resident at the Alqueva dam in 1993:

It’s going to happen and it’s going to be underwater, isn’t it? [referring to Aldeia da Luz, to be submerged with the construction of the dam] ... And us, where are we going? (...) nobody tells us anything. They only make the construction works and that’s it ... we do not know anything more. [RTP Archive, 26-02-1993]

We can see that these infrastructures have direct effects in the lives of local communities from the very moment they start to exist as an idea, often even before any specific projects are formulated. This is also clear in a newspaper article published in 2019 in relation to the cancellation of the Fridão dam:

The death of the project will definitely remove the weight that has been hanging over the population of Amarante about a possible leakage of the dam and it will allow that 120 families of Mondim can, from now on, sleep calmly, after eleven years of anguish. [Público, 16-04-2019]

Alongside the clear psychosocial distress and health-related harm provoked by these infrastructures ‘hanging over the populations’ (Kirchherr et al., 2018), such as anguish and lack of sleep, uncertainty and helplessness, these omnipresent projects colonize both the aspirational and imagined futures – including intergenerational ones – of these communities and their associated hopes and desires. They often gain the contours of myths, something that gives hope (in cases where they create imaginaries of infrastructural protection through their discursive construction as generating socio-economic development and security); or, instead of an over-looming threat.

These prospective injustices (Velicu, 2020), posed by these slowly building, appearing and disappearing, dams, create then a kind of suspended ontological existence – or vaporized, non-secure, dwelling (Nixon, 2011) – for the communities affected by the planned dams. There is a suspension and delaying of the future for those who are staying (the dam that might come and improve local livelihoods) and for those who are leaving the homeland because the dam might or might not come, but with the haunting uncertainty of what will happen to the place that was now left behind. This is expressed by a local resident who lived in Luz, the village that was later submerged by the Alqueva dam:

To me it is a big sorrow that I have, I was born here and I would like to die here. [RTP Archive, 02-01-1980]

Other residents express similar feelings and emotions of loss and grief, already in 1993, when the Alqueva dam was eventually built:

We cry so much because of this. It is going to happen and stays under water, isn't it? [RTP Archive, 26-02-1993]

People are all resentful, after all it is a big sorrow that they feel, of abandoning their homeland, having to go to other lands, that's it, to other areas, for getting a job given that here they can't manage. [RTP Archive, 29-05-1993]

The violence inflicted upon people's lives and place attachments by the submersion of the Luz village by the Alqueva dam is heard very clearly in the voices of these residents (see also Luís et al., 2015). But the colonization of people's past-to-future place attachments also happens when dams create false hopes and promises or risks and menaces that *might not* become real for those who want to stay in their homelands and to have the right to remain and continue to live there with dignity. In turn, this often leads to people's disempowerment and disappearance as political subjects, as a RTP journalist reports in 1993 in relation to the Alqueva dam:

It is curious to notice however the fatalism with which the inhabitants of Luz accept their destiny. To abandon their house and pathways, the places where one has played in their youth, the church or the loved ones that rest in the small cemetery, is a fatality that many say to be in the name of progress. [RTP Archive, 26-02-1993]

This well summarizes the strength of the in/visible hand of the state – especially of the repressive fascist state – and of the progress rhetoric it has insistently espoused and materialized throughout the decades in terms of shaping people's conformity to their hydrocolonial destinies. In many cases, the dams thus acted as unquestionable infrastructures, used to remind, and reproduce the force and immovability of capitalism – again, especially due to the dictatorship with its censorship and

intergenerational psychocultural repercussions (Silva & Ferreira, 2019) – in its need to colonize rural territories and their socio-ecological systems.

However, this psychosocial historiography also revealed that these infrastructures do not need only to be harmful actants (Sarrica et al., 2016), but also offer opportunities for contestation and resistance (Giovanopoulos et al., 2020). A key example of this is the movement *Terra de Miranda*. In the quotation previously shown concerning the quarry built for the construction of the Miranda dam, Participant 2 said: ‘I never had the awareness of the seriousness of that, of the monstrosity that it is, and only now I became aware of that’. It is clear in this quotation that the infrastructural harm caused by the dams and their psychosocial impacts – namely, the normalization of that harm – were only realized and discursively articulated now, at the point when the dams became infrastructures of contestation. This ‘revolutionary consciousness’ (Fanon, 2015) or decolonial resurgence (Barnwell et al., 2021) is based not only on becoming aware and critical of the infrastructural colonization process over time, but also of the possibilities for actively and collectively protesting and reclaiming the right to the territory even now, many years after the construction of the dams.

Importantly, this decolonial resurgence as experienced and enacted by the movement *Terra de Miranda* enabled it to recover and bring to the fore not only the contested past relations of the local communities vis-à-vis the Miranda, Picote and Bemposta dams, ever since they were planned in the 1950s, but also other examples of contestations and protests against diverse dams in Portugal across the years. This is exemplified by the following quotes:

The city [Miranda do Douro] always had a not very pacific relationship with the dams, initially the populations did not want the dams, when the process began in the middle of the 50’s the populations revolted against the dams, ok? [see quote presented at the beginning of the article] (...) People did not know what was a dam, when the idea showed up that there would be a construction that would cut the river. And so the people protested saying we do not want the “corta” (“cut” in *mirandês*), ok, we don’t want the dam (...)

The construction of the dam of Côa [referring to Foz Côa dam which was successfully contested by civic society and suspended in 1996] (...) it was the civil society that rose against a brutal economic power, against the political power. (Participant 2)

These other examples reveal how contestations against hydropower plants in Portugal were mainly active, community-based and collective forms of resistance. This has also been reported by other researchers (see Silva, 2007; Wateau, 2014), and is also illustrated in the quotation below, which provides another example of contestation. In this case, it relates to the Alto Lindoso dam which affected both Portuguese and Spanish communities, as reported by a RTP journalist in 1991:

The arguments announced [by the local communities/protesters] get summarised in sentences like ‘this people and this church do not surrender! Together until we die!’ and they use the church as a symbol of dignity. It is a building of the 18th century that will become submerged when the dam starts to fill in. (...) Most of the Spanish have already conformed to the fact that they will have to leave. However, a small group resists, more or less the same than two months ago, through a hunger strike (...) the Spanish already managed to agitate the Portuguese in the area of Várzea. Together, on New Year’s Day, they are going to protest at the border between Portugal and Spain. [RTP Archives, 30-12-1991]

These examples show that there are several cases of protests against Portuguese hydrocolonial politics. These protests illustrate that dams, as infrastructures, act not only as the ‘subject that empties a territory’ (Sarrica et al., 2016, p. 225), but that they can also, over the course of time, make visible and expose the workings of the state, of energy colonialism, and associated territorial and historical injustices. It was often the awareness of the territorial and time dimensions of the infrastructural

‘doings’ of these dams – as projects, plans, ideas, hearsays, construction sites, tunnels, *cuts* in the river or quarries – that allowed their politicization and contestation.

6. Conclusions

The brief and exploratory psychosocial historiography of hydroelectric power in Portugal just presented indeed clarifies that energy colonialism continues apace, not only in the Global South, but also in the Global North – now in the guise of ‘renewable energy transitions’. The above analyses demonstrate that unveiling this renewable energy colonialism demands going beyond mainstream and processual dimensions of energy/environmental justice – such as distributive and procedural – and considering more structural dimensions, based on historical and territorial power dynamics, such as between the urban and the rural.

The analyses also illustrate how this energy colonialism is enacted at once discursively, infra-structurally, and psychosocially, including storylines of resistance, that rendered ‘infrastructure space [...] a site of socio-political antagonism’ (Giovanopoulos et al., 2020, p. 34). Adopting renewable energy colonialism as a lens of analysis allowed us to expose the necropolitics of place (Davies, 2019) generated via Portuguese hydrocolonialism across different political regimes, and its implications not only of direct harm and toxicity (as during the dictatorship), but also of slow and progressive abandonment (Dhillon, 2021), of negligence and letting die as fostered across time by assemblages of simultaneously visible and invisible infrastructures, and the rhetoric of ‘progress’ and ‘growth’ (Ferrario & Castiglioni, 2017; Goldstein, 2017). We also illustrated the different psychosocial layers and temporalities of both the prospective and material violence enacted by these dams, created not only by more immediate psychosocial harm – such as grief and anxiety – but also by diverse layers of uncertainty (Groves, 2015; Velicu, 2020), generative of an ontological suspension that kidnaps peoples’ futures.

In sum, we have demonstrated that Portuguese hydroelectric power politics have continuously enacted an energy colonialism with large hydropower plants functioning as infrastructures of the capitalist dynamics of accumulation by dispossession (Dunlap, 2018), amenable to extremely different political regimes, and which managed the normalization of ruralized socio-ecological harm over time. This sustained ideological stigmatization of rural territories seems to result in the demand that ‘rural people resign their rights’ (Ashwood et al., 2019, p. 89/90) and, as such, has clear implications for democratic citizenship, namely creating first- and second-order citizens (Andreouli & Howarth, 2013) – or ‘uninhabitants’ (Nixon, 2011) – in Portugal, defined principally by where they live.

Nevertheless, this psychosocial historiography of Portuguese hydrocolonialism also allowed us to amplify the voices of some of the instances of resistance against dams throughout time and across Portugal – and during the democracy, when active resistance was not repressed with violence and imprisonment, as during the dictatorship –, revealing how these infrastructures can also be politicized before, during, or many years after their construction. In the case of the Picote, Miranda and Bemposta dams, it was the agency of the very dams as capitalist actants amenable to profit transactions that created an opportunity for contestation and resistance, 60 years after they were first built. As such, these analyses call for an in-depth and updated social historiography of energy infrastructure contestations in Portugal (see also Figueiredo & Fidélis, 2003): one which examines when, where, how and with what psychosocial, community, and political repercussions local communities have contested and resisted energy infrastructures and resource extraction in Portugal (cf. Fernandes & Fernandes, 2019).

In fact, the analyses also contribute to counteract the cultural narrative of the lack of an active civil society in Portugal, often used by governments and energy companies to justify the lack of public engagement (Santos et al., 2019). Our analyses also highlight that Portuguese democracy, despite its radical differences to the *New State* dictatorship and unquestionable role in improving people's rights and freedom, is still double-edged, at once allowing resistances to be expressed, whilst also colluding with capitalism/colonialism, as highlighted by Participant 2 of the *Terra de Miranda* movement:

I am sure that democracy will know how to correct this (...) Democracy allows us this, to denounce this, raise awareness to this with freedom (...) but democracy still has many steps to take regarding the reduction of territorial inequalities. (Participant 2)

It seems then that it is these contestations from below that play a key role in correcting territorial and historical inequalities, such as the movement *Terra de Miranda*. Such contestations can help in creating networks of solidarity and care against energy colonialism not only in Portugal, but also in cross-country and even global alliances (Shah et al., 2019). A civil society aware of this energy colonialism and the role of energy infrastructures thus helps to bring to the fore how considering (in)justices in (renewable) energy transitions implies not only considering their socio-environmental, but also their colonial – territorial and historical – dimensions.

Notes

1. Allowing transparency, participation, and influence in the decision-making process (Carvalho et al., 2019).
2. The fair distribution of the rights and responsibilities of a given project (Walker, 2009).
3. Recognizing and involving all voices in the decision-making process, as well as the recognition of people's attachments and cultural values (Groves, 2015; Zanotti, 2015).
4. However, see Bouzarovski and Simcock (2017) for spatializing energy justice in relation to energy poverty.
5. In this paper, psychosocial impacts are defined as those that affect individuals' and communities' subjectivities, their feelings, emotions and power, and related well-being and health (Woodward, 2015).
6. Fascist as in restricting liberty of expression, repressing any type of opposition, perpetrating violence against civilians through a political police force, and aiming to create a patriarchal, white, and heterosexual order without individual freedoms (Castán Broto, 2016; Silva & Ferreira, 2019).
7. During the dictatorship, the construction of dams was accompanied by the construction of a small village for the dam engineers, which included a church and priest. The book by Telmo Ferraz was published only in 1975 as censorship under Salazar prevented the book from being published earlier.
8. All ethical requirements were approved by the Ethics Commission of the University Institute of Lisbon (No. 09/2021). The informed consent of all interviewees was audio and video recorded.
9. To suggest 'not as much a true *transition* involving a clear-cut change of political regime and the construction of new socioeconomic structures, as a *transaction*, a deal between old and new political elites to preserve the socioeconomic status quo' (Franquesa, 2018, p. 42).

Data availability statement

Some of the data that support the findings of this study are available through RTP's audiovisual archives at <https://arquivos.rtp.pt/>.

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