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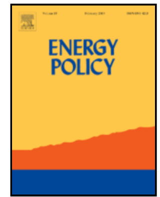

How to change the sources of meaning of resistance identities in historically coal-reliant mining communities

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ABSTRACT

This paper explores the sociocultural identity debate surrounding coal mining and coal combustion infrastructures in Aragonese coalfields (Spain) to better understand local and individual resistance to energy transition. Adopting the Touraine-Castells sociological perspective and using an interpretive approach and a qualitative research design with in-depth interviews, this article focuses on cultural attributes that give meaning to resistance and project identities under construction. It also explores how resistance identities are linked to climate and energy policies and proposes an analytical framework to understand and to design decarbonisation pathways from resistance identities to project identities. The following conclusions are drawn from this study: a) the sources of meaning supporting current resistance identities are similar to juxtaposed, legitimising coal-phase identities (occupational, class-belonging and community identities), are reactive and founded on coal dependence, solidarity and justice; and b) resistance can only be overcome by a sustainable territorial project with a social base, which is why the adaptive dilemmas of historically coal-reliant mining communities (HCRCs) must be resolved. This research paper demonstrates the need for innovative governance to promote a transformative transition that addresses the sociocultural identities of HCRCs in the design of ecological transition contracts.

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1. Introduction

Decarbonisation of the energy system, considered essential to reduce climate change, has gained major importance worldwide (Paris Agreement COP21, United Nations, 2015a; Agenda 2030, United Nations, 2015b) and seems to be indisputable and beyond any doubt (Loorbach et al., 2017). However, empirical evidence continues to highlight barriers to energy transition at local and community levels (Kuchler and Bridge, 2018) and in national and international energy policies (Leipprand and Flachsland, 2018). The link between technological and social factors is such that any significant change in technology affects society and shakes up values and identities (Miller and Richter, 2014). The 're-coupling' process does not always occur within a consensus framework.

Energy transitions are causing protests, especially in areas highly reliant on extractive industries and in historically coal-reliant mining communities (HCRCs). This social protest has not always been understood and the moral positioning of resistant communities has also been seriously questioned (Ayling and Gunningham, 2017). Individuals and groups in these minority communities develop resistance identities to oppose the new framework—the global decarbonisation process—by creating social movements to defend their 'cultural rights' (Touraine, 1978) and their socioeconomic, cultural and territorial environment.

In this article we argue that resistance during the coal phase-out stage can be partly explained by the conceptual category of identity. This ensues from individuals and groups giving priority to a set of cultural attributes that provide meaning in both the process of defending coal identities and the emergence of new collective sociotechnical imaginaries.

Some communities worldwide continue to design imaginary sociotechnical collective futures based on coal (Kuchler and Bridge, 2018), while others have reinvented themselves using the environmental paradigm and have rejected the extractive industry as they believe it is a threat to their new community identity (Connor, 2016). Both analytical approaches explain already defined community positions and dominant/institutionalised identities. A third and broad group of communities, which includes those analysed here, is now in the midst of an identity debate. This paper delves into a third analytical approach to complete the existing literature focusing on the process of sociocultural changes resulting from sociotechnical changes in HCRCs, and it adopts the Touraine-Castells sociological perspective (Hannigan, 1985). Individuals and groups in HCRCs face adaptive dilemmas with three main tension binomials to resolve: conflict–change, individual–society and resistance–adaptation.

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They have to reflect and shift to find new identities and their still to be defined territorial political project.

Neither the academic literature nor the design of energy-transition policies for the affected areas do sufficiently address the cultural bases of opposition to decarbonisation through the analysis of the changing sources of meaning of resistance identities in HCRCs. However, resistance management should be incorporated as a key aspect in political agendas promoting ecological and societal transitions, considering which factors form the basis for resistance and which are the organising and 'disorganising' factors of the opposition.

The objective of this article is to bring research on sociocultural identities into conversation with literature on resistance to an energy transition, by making two contributions: firstly, to examine juxtaposed identities that strengthen resistance and some of their change dynamics; and, secondly, to explore how identities are linked to climate and energy policies. Therefore, this paper shows the implications of the coal legacy in HCRC identity changes by using a qualitative methodology. It also proposes possible paths for new legitimising identities based on majority and agreed identity devices. All this can only be possible from an innovative transition governance that includes the design of transition contracts focused on individuals and groups.

The paper has the following structure: section 2 contains the theoretical background and literature review while section 3 describes the contextual and methodological framework. Section 4 shows the key results and analysis for pathways to overcoming resistance and building project identities in HCRCs. It concludes by emphasising the main policy implications (section 5).

2. The literature on coal identities and energy scenarios

Protest, accommodation or acceptance—as local collective responses to coal phase-out in mining regions—and their relationship with identities have been studied with a variety of approaches (Frantal, 2016; Della Bosca and Gillespie, 2018; Mayer, 2019). This section briefly introduces a body of sociological literature on the relationship between identities (linked to energy infrastructure such as coal mining and coal combustion), and social movements. Both issues are inseparable in current societies.

Alain Touraine proposed an important paradigm in the field of social movements of sociological theory to analyse the way a dominated actor participates in a socially conflictive relationship (Touraine, 1978; Wieviorka, 2012). Manuel Castells analysed urban social movements and social change, underlining the relevance of identity as an interpretive category. This author defined identity as a source of meaning and a constitutive element of individuals and groups. Identities imply a process of constructing meaning by which stakeholders give priority to a set of cultural attributes over other sources of meaning (Castells, 2000: 29). However, identity is neither one-dimensional nor static. Firstly, different levels of identity can be observed (depending on the area where the individual is located: individual, family, professional, community, etc.). Secondly, identity is dynamic because individuals and groups are constantly changing. Concerning social change, Castells differentiates between three types of identity: resistance identity (opposing that which has been established or imposed), project identity (building to transform) and legitimising identity (represented by dominant institutions).

Coal identities are presented below in relation to two energy scenarios: a) 'minescapes' or coal infrastructure-based situations that have been legitimised for over a century; and b) a decarbonisation scenario, as a project in the legitimisation process, which HCRCs oppose.

2.1. Minescape and legitimising identity

Coal-based infrastructures have had the enormous capacity to configure the geographical spaces they occupied impacting economically, politically and culturally and affecting social relations, due to their systemic and fundamental character (Bridge et al., 2018). As far as the mining fields are concerned, coal explains and pervades everything, forming what Ey and Sherval called a 'minescape' (2016), even beyond the shutting down of the mines (Sánchez, 2003; Wheeler, 2014; Grubert and Algee-Hewitt, 2017). Coal infrastructures have had the capacity to produce symbolic meanings (Larkin, 2013) and cultural attributes that facilitate the rapid construction of institutionalised identities (legitimising identities). Thus, the production of minescapes readily feeds collective imaginaries of prosperity and those who labour in these energy landscapes and the communities give the mines symbolic and material power.

Coal and mining are 'identity devices' that give continuity and represent an anchor point as they support a collective memory that has crystallised in narratives, spaces and times (Sanz-Hernández, 2008). Looking after mining heritage is one example of communities' need not to break with their mining past (Ballesteros and Ramírez, 2007; Sanz-Hernández, 2013). In HCRCs, the links that have been established between mining concerns and their workers are so close that shutting down the mines is seen as a betrayal of the community (Grubert and Algee-Hewitt, 2017). Energy infrastructures, however, present a great paradox: they are meant to last, yet they are also doomed to be exceeded (Howe et al., 2016), and with them, the identities that feed.

2.2. Decarbonisation as resistance or project scenarios

Markard et al. (2012: 956) defined sustainability transitions as 'long-term, multidimensional and fundamental transformation processes through which established sociotechnical systems shift to more sustainable modes of production and consumption'. Sustainability transitions and decarbonisation can be considered the great project of the current society around which new identities are being built (project identities). Over the past 20 years, transition theories have been developed to account for the sociotechnical changes we are experiencing as a result of the decarbonisation process (Williams and Doyon, 2019), without paying too much attention to sociocultural dimensions. Understanding the effects of climate change and perceiving the need for an energy transition occur within a specific cultural frame of reference (Adger et al., 2013) in which the positive or negative impacts of change processes are experienced. Sociocultural dimensions, such as identity, place attachment or emotions linked to loss in communities with generational coal mining have been underestimated in energy-transition designs, even though they can shape more effective and efficient energy-transition strategies and help minimise social perception of the numerous threats change poses (Della Bosca and Gillespie, 2018).

Despite all this, most future energy scenarios are being designed at national level, leaving out the local-individual level. Stirling (2014: 62) distinguished between transition and transformation and described two completely different change scenarios with disparate society roles. The first scenario, designed by elites, institutionalises and preserves power relationships and relegates most of society to a passive role. The second transformation scenario makes bottom-up logic and social activism possible. Both scenarios, transition and transformation, demand 'the capacity to imagine futures' (Jasanoff and Kim, 2015). These authors coined the term 'national sociotechnical imaginary' to refer to the 'collectively imagined forms of social life and social order reflected in the design and fulfilment of nation-

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specific scientific and/or technological projects' (2015: 121). This approach is based on the design of 'dreamscape of modernity' (Jasanoff and Kim, 2015) and highlights how space is socially-constructed through energy infrastructure (Bridge et al., 2018). However, these transformative projects are born legitimised and are imposed on individuals, groups and communities, thus promoting the emergence of resistance identities with a) a strong emotional base and b) a solid anchor in the territory.

In relation to the emotional basis, although classical sociology played down the importance of analysing emotions, they became more relevant as a basis for examining collective actions after pioneering authors—such as Scheff, Hochschild and Kemper—began referring to them in the 1970s (Bericat, 2000). Since then, a great deal of literature has accumulated on collective action and new social movements and it has included an interesting debate among key authors—such as Melucci (1994) and Goodwin et al. (2000) —to understand the cultural slant of emerging social conflicts.

In relation to territory anchorage, the notion 'place attachment' gains strength. It is understood as an 'ecological, built, social and symbolic' link (Hummon, 1992: 253) between individuals and the place where they live, but has not been adequately considered in policies (Manzo and Perkins, 2006); however, several research studies show that place attachment forms the basis of facilitating behaviours of territorial strategies and policies (Masterson et al., 2017) and of social-hindering behaviours (Bartel et al., 2014). These ties to the place where people live not only mould their own individual behaviour (Hernández et al., 2010) but also that of the community. This can lead to partisan conflicts and clashes between individuals and groups.

In summary, empirical evidence suggests that industrial fossil-fuel transitions: a) depend on many conditions (contingency), which include technological, political and social aspects (Sovacool, 2017); b) are perceived as being more just if policies address stakeholder interests (Reed, 2008; Simpson and Basta, 2018; Bedi, 2018); and c) are more successful if they recognise the emotional and life-changing impacts of these transitions (Hall et al., 2013; Evans and Phelan, 2016; Johnstone and Hielscher, 2017). Considering all this, it is foreseeable that the project identities will arise from within the communities, although this is a framework of political dispute revealing conflict between actors promoting a renewable energy system and those defending a traditional energy system. Indeed, disputes about energy infrastructure projects are not only resource struggles, but 'become focal points for broader struggles involving the terms of citizenship, the nation, rights and identity' (Perreault and Valdivia, 2010: 691).

3. The Spanish coalfields to energy transition

3.1. Contextual framework

Between May and August 2012, workers in Spanish coalfields organised a strike lasting over 60 days, sit-ins, marches and protests. They raised one of the first Spanish 'tides' that formed in the spring of 2012 (known as the *indignados* anti-austerity movement or the 15-M movement). It was during this time of deep recession that the citizen movement to support miners began in Spain, supported by a great deal of activity on social networks (Facebook, 1 June 2012). This was the origin of the 'black tide' supporting mining and defending all Spanish mining regions, thus emulating others using a colour to identify their demands, such as the 'green tide' for education and the 'white tide' for health.

This protest movement was a collective action of resistance to the nearing of the end of government aid for the sector and, as a result, the end of coal mining in Spain. The events, widely covered by the national and international media, shone a spotlight on a sector that after 'coal's second golden age' (1973–1979) saw its quantitative importance drop in the Spanish job market. The five coal-mining restructuring plans in Spain between 1990 and 2018 have involved a drastic decrease in companies, workforces, production and aid, as well as an accelerated social and cultural transformation of HCRCs (Fig. 1).

In the 2000s, Spain was one of the main countries leading the energy transition in Europe (Haas, 2018); however, the recession in

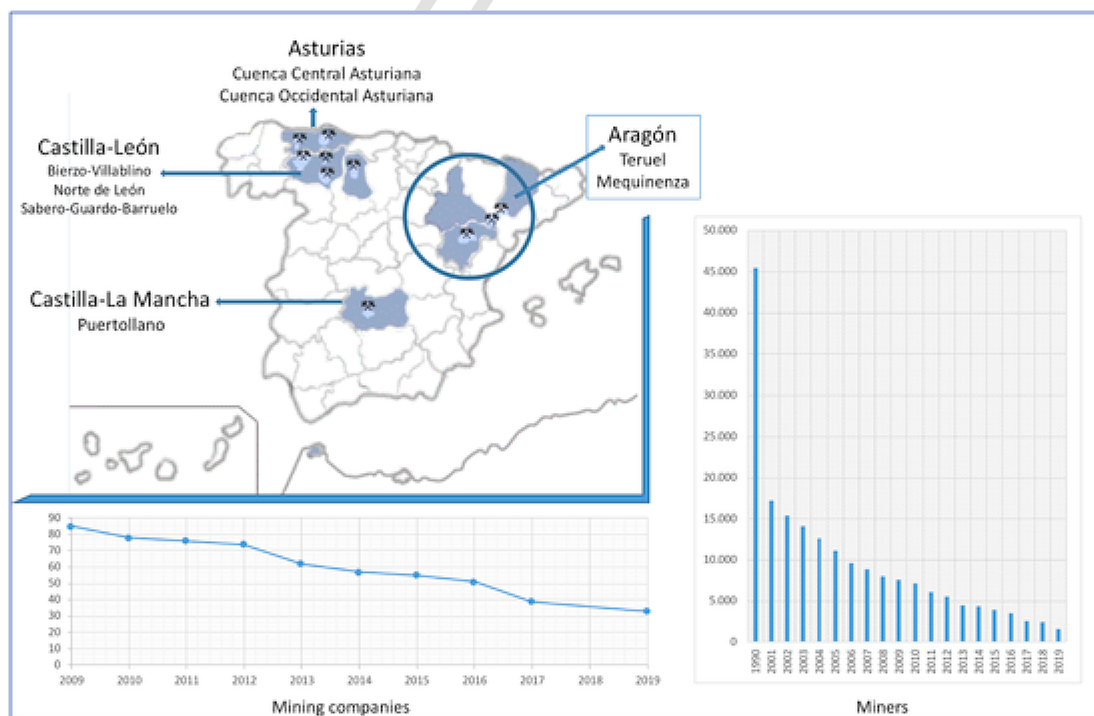

Fig. 1. Location of HCRCs and development of Spanish coalmining companies and workforce.

2008 and the conservative change in energy policies hampered progress. Questions surrounding coal were answered with more political clarity after the Spanish Ministry for Ecological Transition (MITECO) was created by the socialist government on 7 June 2018, the announced closure of mines began and June 2020 was chosen as the date by which to close thermal power plants (this is the case of the thermal plant in Andorra, Aragon, where the HCRCs analysed here are located). This has reactivated public debate on the post-coal future and social mobilisation in Spanish mining territories, characterised by extreme demographic vulnerability. Over the past 25 years, the main Spanish coalfields in Asturias, Castilla-León and Aragon have lost between 20–25% of their population.

Recently, the Spanish socialist government announced that the next Climate Change Act will especially address rural mining areas with demographic problems to ensure a sustainable and inclusive transition that leaves no one behind (in line with the United Nations Agenda 2030). Public debate on how HCRCs can transition fairly is ongoing and stimulated by the promise of strategies in the justice framework for the most vulnerable territories. Implementation of these strategies is now up in the air because of the prolongation of the general election process in Spain.

Erratic and unstable Spanish policies have not managed to prevent the impacts of decarbonisation in Spain nor halt the demographic emptying of all Spanish coalfields. Authors such as Haas (2018) argue that the lack of progress in energy transition in Spain is due to society's passive attitude. This statement requires a more in-depth sociocultural and political analysis. However, there are clear indicators of strength in Spanish society, especially after the recession began. This revival of the commitment shown by civil society and social protest (after the 15-M movement) led to positions that both supported a shift in energy model (Sanz-Hernández, 2019a) and defended the traditional coal-based system (black tides). Policies, in this sense, have been neither stable nor efficient in breaking any deadlock. Over the past three decades the backdrop to decarbonisation in Spain has been an erratic economic context and an unstable and cyclical political framework with an energy policy and energy-transition dynamics that are seriously threatened by the Spanish energy model, Spain's strong dependence on energy imports and its high electricity deficit (Fabra Portela and Fabra Utray, 2012; Haas, 2018). Furthermore, alternating between models blocking the transition with strategies such as the removal of support for renewables and the famous sun tax (brought in by the Partido Popular government) and pro-transition models (promoted by socialist governments) have excessively extended the change process and complicated the planning, implementation and sustained monitoring of transition policies.

Support plans (called MINER investment funds) have been criticised by the very coalfields themselves as their design is opaque, their implementation has been badly managed and their impacts have not been evaluated. However, they have been especially called into question because they cannot guarantee social sustainability. Policies have promoted a top-down compensation transition rather than territorial transformation within a justice framework that would address the people, territories and culture that have arisen as a result of coal. Furthermore, the powerful position of the national government with competence over energy and the lack of an institutionalised citizen participation system (Sanz-Hernández, 2019b) reduces trust and credibility of the governmental decision-making process.

Consequently, the political framework has led to mistrust and has aggravated scepticism and protest in the HCRCs. The political framework has not conveyed credibility and, therefore, it has created insurmountable distances between governments and the civil society, although it tries to blame the private sector instead. Until these distances are reduced, there will be no consensus to tackle such an inescapable challenge as energy transition. The clearly interventionist and imposed process has also been inefficient by applying a badly understood model that has ended up severely impacting vulnerable territories. The political strategies of the past give us a lesson on consensus failure or prosperity and sustainability success (Jasanoff, 2018). Convincing alternative futures have neither been envisaged nor constructed (Mayes et al., 2014; Marshall, 2016). Therefore, the current political proposal for a just transition inevitably leads to the informants to formulate the following rhetorical question: 'Just for whom?' (I-20) (see Appendix).

3.2. Methodological framework to study resistance in HCRCs

Understanding the processes of identity change linked to the decarbonisation process and associated resistance behaviours requires a qualitative research design that delves into the everyday situation of HCRCs in coalfields in Aragon and highlights social cultural dimensions (Lincoln and Denzin, 1994; Lichtman, 2014).

The cultural attributes linked to carbon configure identity devices based on uses of time and space, habits, and relationships; these, in turn, can be traced from the narrative in which the memory of individuals and groups crystallises (Ricoeur, 1987; ;Halbwachs, 1968; Sanz-Hernández, 2008). Therefore, analysis of vital stories enables us to identify the constitutive elements of sociocultural identities.

This research adopted a multi-method qualitative methodology, using both the case study design for the research plan (Stake, 2006), and grounded theory (Glaser and Strauss, 1967; Charmaz, 2008), for data analysis and theory building (Eisenhardt and Graebner, 2007; Díaz Andrade, 2009). It is based on in-depth interviews about the vital trajectory of the informants (in the fields of employment, family and territory), their position in relation to coal phase-out process and their vision and perception of future scenarios (also in the three mentioned areas). The interviews were held at different times from 2012 to 2019 and all the interviews were recorded and later analysed. The attributes of the data, dimensions, codes and relevant subcategories and interpretative categories were obtained from two inductive strategies: the constant comparison method and the theoretical sampling. (Table 1).

The network of 26 key informants was established after the miners' industrial action in 2012, following a theoretically led sampling in which the starting organising element was the level of economic and employment dependence (Appendix). The process implies the advance and regression in the phases of sampling, data collection and analysis, until the data saturation or the lack of relevance in the new collected information (Mason, 2010).

An interview matrix was designed that included: 1) working, retired and early-retired miners (the latter understood as miners that have taken advantage of one of the government's early-retirement schemes) and subcontracted miners (in the mine or the thermal power plant); 2) people in their closest circles, for example their wives or relatives (mostly women); and 3) people with no direct economic dependence on coal. Including informants in the network from the local authority (both politicians and officers), from trade unions (some ex-mining ones) and from a variety of associations was also considered appropriate. They all live in four municipalities (HCRC) with a different situation in the whole coal phase-out process: Andorra, Ariño, Escucha and Utrillas. This choice of contexts allows us to compare the views/perceptions of subjects in different localities who, over the past three decades, have experienced mobilisation in a variety of individual and collective circumstances, although as part of the same general social and sectorial context (minescape). They include men and women from municipalities where: 1) coal is no longer a source of employment after being one for a

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Table 1
Methodological framework to study resistance identities to energy transition.

IN-DEPTH INTERVIEW	DATA COLLECTION	CODIFICATION	BUILDING THEORY			
Relevant areas in the interview script	Data attributes	Codes/subcategories	Similarities, differences, interactions	Conceptual categories		
Work trajectory	Current job Trades Mining Works Experiences in the mine	Work life styles Spatial perception of the mine Temporary uses Work habits Work Relations Sense of class belonging	Self-Identification Continuity Reaffirmation Emotional and cultural dependence Economic dependence Social dependence Solidarity	Occupational Identity Class-belonging identity	**Identity Planes**	**IDENTITY**
Family trajectory	Current family situation Members linked to the mine and their experiences	Family lifestyles Family Mining Tradition Temporary uses Habits Intra and intergenerational relationships	Economic dependence Social dependence Solidarity Continuity Reaffirmation	Familiar Identity		
Life experiences in the territory	Place of birth Place of residence Motivation to remain in the territory	Place attachment Connection Rootedness Self-community Security Membership Sense of belonging	Territorial dependence Solidarity Justice	Community identity		
Position in relation to coal phase-out process	Personal attitude Behaviour Feelings Opinion on position other local groups	Opposition Reactive response Conflict Continuity Discontinuities Loneliness Inability Passivity Distrust	Resistance Dependence Solidarity Justice Awareness Dilemmas	Legitimising Resistance Project	**Identity Types**	
Perception future scenarios	Needs Expectations Wishes Proposals for action	Scepticism Negation Distrust/trust Uncertainty	Negation Negotiation Compensatory transition Transformative transition Protagonist transformation			
CONSTANT COMPARISON METHOD AND THEORETICAL SAMPLING						

century—this is the case of Escucha and Utrillas (where the main mine, operated by Minas y Ferrocarriles de Utrillas, closed in 1991); 2) extractive work has less quantitative significance, such as Andorra, which, nevertheless, has a high dependence on the thermal power plant fed by coal from the area (in November 2018 the electricity company ENDESA announced it would close by June 2020); and 3) they are the locations of the last Aragonese mines—this is the case of Ariño, where the last 200 Aragonese miners have worked and where mobilisation has been the most significant in the past decade (2010, 2012, 2016, 2018 and 2019).

The methodological process enables us to identify the main ideas and results of this article (Fig. 2): a) the constitutive elements of relevant coal-resistance identities (dimensions, plans and types) and their properties, differences, similarities and interactions shown between individuals or groups; b) the factors promoting the reactivation of the meanings linked to legitimising minescape identities; and c) change dynamics related to awareness of the end of the cycle, and also related to the transition from opposition to accommodation (identity debate and adaptive dilemmas). This process enables the acceptance of new cultural attributes that support a new energyscape. The results are shown in Fig. 2 and discussed below.

4. Results and discussion

4.1. Resistance identities to an energy transition: constitutive elements

Aragonese communities analysed have been HCRCs for a long time and view coal mining, which is now at risk, as an integral part of their identity and also as a determinant of their survival as a community (Sanz-Hernández, 2013; Della Bosca and Gillespie, 2018).

The agonising four-decade-long journey has been intermittently, yet constantly, protested publicly, even after 2010 when the European decision to end coal mining in Spain by 1 January 2019 was adopted (2010/787/EU: Council Decision of 10 December 2010 on

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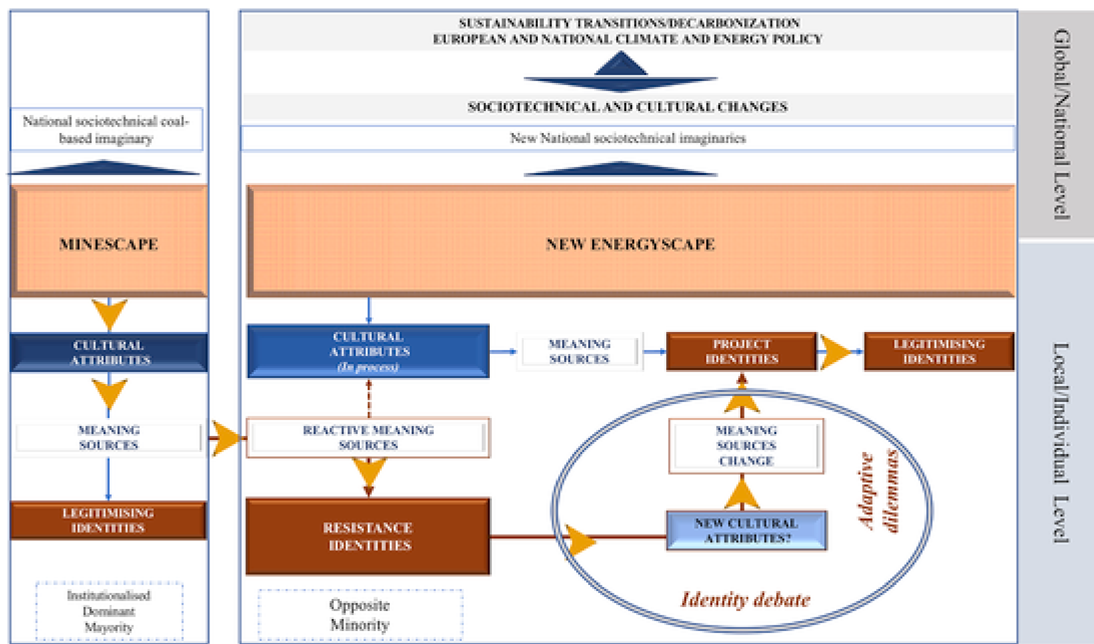

Fig. 2. Pathways to overcoming resistance and building project identities.

State aid to facilitate the closure of uncompetitive coal mines). The announcement of the closure of coal mining and coal combustion infrastructure leads to a change scenario that questions the legitimising of coal identities.

While new cultural attributes linked to new sociotechnical imaginary (new energyscape) are yet to be defined, dynamics closely related to the emergence of resistance identities are taking place.

The resistance identity devices are (re)defined over time as they are affected by discontinuities and ruptures altering the ties of dependence (socioeconomic, cultural and territorial) created by 'coal' over a century. Resistance identities cling to the institutionalised cultural attributes that made up the legitimising identities in minescape. Energy transition calls into question the legitimacy of HCRCs daily life, vital experiences linked to mining past and, consequently, the coal identities. However, many subjects revalue and give priority to a set of coal-based cultural attributes as reactive response to energy transition (reactive meaning sources). This is both a process of (re) building coal identities and (re) establishing oneself as an individual and as a collective, in which the resistance category wields a strong presence in many identity planes.

4.1.1. Reactive meaning sources and resistance identities: dimensions and planes

Under a structural perspective, Aragonese local resistance is measured by a) three relevant dimensions: employment, family and territory, and b) three main identity planes: occupational identity, class-belonging identity and community identity (local and supra-local) (see Fig. 3).

Concerning the dimensions shaping resistance identity, energy transition affects the employment dimension by disrupting identities built on people's relationship with their work environment (occupational identity and class identity). It also affects a territorial dimension by redefining community (local and/or supralocal) identity. Energy transition involves change processes imposed on territories whose production systems at one time created strong dependencies and industry–place–community links, in three major aspects: social, territorial and economic.

The employment dimension is emphasised in the informants' accounts enabling us to distinguish between two types of links to coal and two classes of associated identities: occupational and class-belonging identities. The territory dimension is associated to community identity.

Regarding the planes shaping resistance identity, an *occupational identity* (mining) corresponding to the mining identity principle is visible in most of the individuals interviewed (including the women). At its height it is linked to the features of:

(a) High degree of self-identification: 'The mine forms part of us, of our very being' (I-06). 'Being a miner' is also having been one and it translates into an indelible dimension of people's personal and social image (García, 1997).
(b) Proud reaffirmation 'You wear the pride you feel for having been in a mine like a war medal' (I-07).
(c) Strong perception of continuity: 'Whoever has been a miner never stops being a miner' (I-23). As other studies have highlighted (for example Della Bosca and Gillespie, 2018), identification with coal tends to be continuous, even after the mine has closed or the employment relationship with the mining concern has ended (which could be understood as a connection severance factor): 'It seems we can't talk about anything else. We still tell mine stories' (I-01).
(d) An emotional and cultural dependence. Expressions certainly differ depending on the speaker's level of emotional bond. For some groups (workers or retirees), their life and future continue to revolve around the mine and coal (coal's second life, which is talked about in the area). In these cases, their lives and emotions have not become independent after their economic and employment autonomy and an emotional and cultural dependence has developed.

> 'We've lived in and we're from a poor area, really fucking poor. People couldn't earn a living here. We won the coal lottery and we have to continue backing the coal lottery. If we can't burn it, we'll just have to find other uses for it' (I-24).

A second manifestation of occupational identity is sustained by the collective of workers performing a variety of trades in the mine (often subcontracted). This group recognises that working in the

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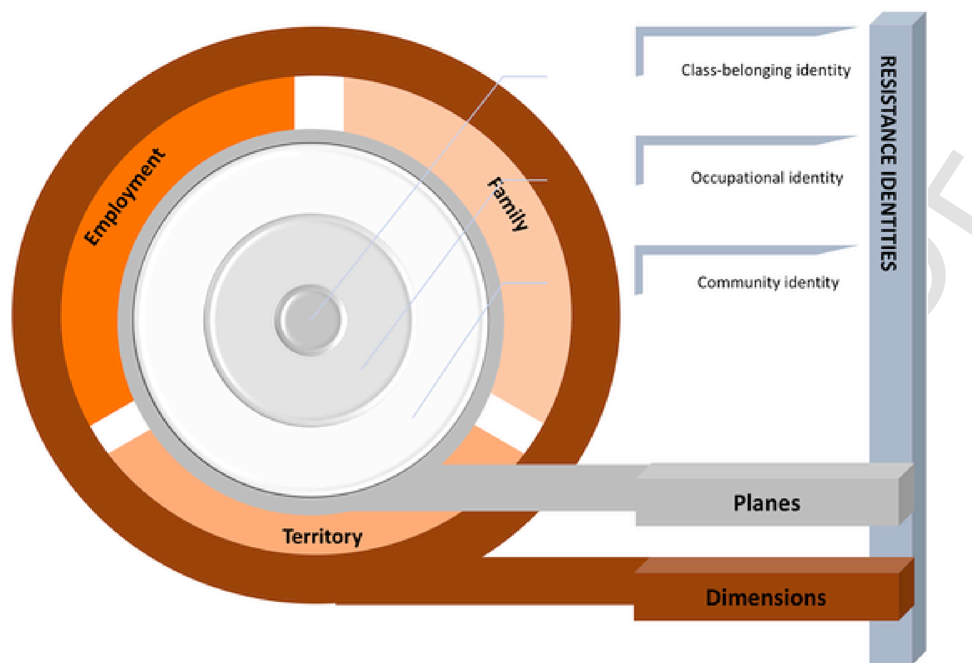

Fig. 3. Dimensions and planes shaping resistance identities.

mine defines them, but their accounts differ to those of 'lifelong miners'. The feeling of identification in this collective is essentially one of employment and it is based on economic dependence: 'We've always lived from coal; it's put food on the table for our kids' (I-08). They prefer an apolitical discourse and they avoid the trade union issue.

This occupational identity, shared by several interviewee groups, is associated with an average level of dependence and emotional bond. Perhaps that is why this identity is more accommodating or passive and, to a certain extent, residual. It is basically expressive, taking shape in accounts and discourses, and it is rooted above all else in past mining experience.

Although people who have shown a more resistant attitude towards coal output usually have very different profiles, they also share common features. All of them have high economic dependence on coal infrastructure (mining or thermal power plant in Andorra), show concern for their employment and their family, oppose the change of their lifestyle, actively participate in protest actions, show strong emotional ties with their minescape and build stories around the risks associated with mine and thermal power plants closure: social exclusion, cultural disconnection and territorial vulnerability. Most of them also show class identity.

A class-belonging identity has been assigned to this group of interviewees who have been associated with coal for a long time. They distance themselves from the general basis of occupational identity to instead follow a principle of opposition. This identity is active, rooted in the future and, as a result, targets collective action. They all feel proud of being miners and, in some cases, they define themselves as 'members of the working class'. This statement is supported, for example, by the fact that leftist governments have enjoyed a majority in mining areas, which strengthens a classist tendency. In accounts in which the *class* condition is assumed more explicitly, it is associated with having 'left my life in the mine … ' (I-17); in other words, a reference that ultimately alludes to an employment relationship of power. This identification is even seen in the wives, especially those that come from several generations of mining families.

Further, resistance is mediated by two other dimensions besides the above-described occupational one: family and territory. The family dimension stands out in the discourse of the women (who the press called 'the coal wives'). They are especially active and embody an expression of community identity that especially highlights the idea of sustainability of a mining lifestyle with the focus on younger generations. They argue that their mobilisation was based on the 'threat to a way of life and family' (I-01). In addition, as other groups of informants, they highlight the cultural revindication features of the minescape, continuity and economic dependence.

Finally, the third important identity in this analysis, community identity, transcends the strictly occupational identity as it includes both employment and territorial aspects. The time basis of community identity points to the future, a future that is not only based on employment but also on the community's way of life.

4.1.2. Interaction spaces between identity planes: opposition pathways and discontinuities

A dynamic and process-oriented perspective of the data allows us to observe similarities and differences in planes and how the gap between them is bridged. These interactions reveal discontinuities and opposition interpretive keys that are shown below:

a. Identity-opposition. In line with Touraine's theoretical proposal, we can confirm that the principle of identity remains in all workers who remove themselves from the sector, through retirement or early retirement, but the principle of opposition—which appears together with resistance identities—does not last in all of them. This is especially significant because as far as this author is concerned, conflict associated with the principle of opposition 'causes the enemy to emerge and forms the conscience of the stakeholders present' (Touraine, 1997: 415).

The difference between occupational and class-belonging identities is a permanent, everyday process, but situations of conflict and uncertainty have made it visible. The interviewees with a high-class identity demonstrate a narrative in which resistance is associated

with being a miner and they boast of being one of the first Spanish ‘tides’ in the spring of 2012.

This sense of belonging has complexities and controversies, above all in the framework of a long sector reconversion process that is eroding the continuity coal gave and whose ultimate aim is to make it disappear. The first controversial element altering continuity in ‘being a miner’ is the early-retirement scheme. This has been an especially controversial practice due to ‘bad governmental management and trade union behaviour’ (I-17), ‘the age of many of the early-retired workers’ (I-03) and the high economic compensations associated with this scheme, which is viewed as ‘badly distributed privileges’ (I-19). The way in which they were agreed, the trade unions' mediating attitude and the blessing of socialist governments could have lessened the discord they caused. However, they have made individual interests clash with social ties and interfered with future communities.

In general, early retirees make two opposing interpretations of continuity in the sense of belonging to the mining collective. The first interpretation preserves continuity, even after retirement or early retirement: ‘You never stop being a miner’ (I-17). The second arises in conflict scenarios because it is there that belonging is tested: previously working as a miner is not enough as they are called on to demonstrate this fact, and demonstrating it means participating in collective resistance: ‘There are many retired or early-retired miners that have been involved in everything, even though they had already stopped working’ (I-10).

However, the lack of commitment in defending coal is interpreted by subjects with a resistance-oriented vision as a renouncing belonging. ‘Some people here were miners until they took early retirement’ (I-08).

They are also especially intolerant and critical of the beneficiaries of early retirement: ‘There are a thousand retired people here. Where are they? On the beach … Doesn't this have anything to do with them? Come on mate, this is a fucking social problem!’ (I-05).

The second and definitive controversial element altering continuity in ‘being a miner’ is the announcement of the end of aid to the sector and the closure of coal mining infrastructures. This accelerates disconnection, whose expressive forms vary, such as a) practical accommodation: ‘We've been living with this issue for years and there's nothing we can do about it. Protesting on the street is a waste of time. Everything's already been decided’ (I-13); and b) as a defensive and defeatist attitude: ‘Everything I've seen over the years makes me sad and angry. I prefer not to be there’ (I-07).

Individuals with a high resistance-oriented vision find these passive adaptation or intentional estrangement attitudes difficult to understand. ‘Why haven't they got involved?’ (I-04). However, they are pathways that all individuals and groups of communities travel along at different times.

b. Community and opposition. Community identity strengthens the resistance and the project components (Castells, 2000: 30–32) of class-belonging identity. First, resistance gains a sense of community that transcends employment, and, second, project gives rise to subjects viewed as the collective social stakeholder whereby individuals' experience becomes holistic; in other words, they give meaning to an individual's entire range of experiences throughout their life. Some informants associate the emergence of these subjects with ‘being together’, which points towards the *being-in-common* defined by Nancy (2001). Occupational identity, which even lasts in those that steer clear of all conflict, has a *personal* character based on individual experience; class identity is *collective*, extended and strengthened by the *community* identity of the town, region and entire territory influenced by coal.

It is precisely this mediation of community that transforms the sense of class, which is no longer associated with *conscience*—a word only present in the discourse of informants directly connected with the work of trade unions and absent in the other interviewees—and instead is associated with *identity*. Thus, a new meaning is given to the relationship between the individual and the collective in two scenarios that intertwine and permanently connect in everyday life, even after the end of the relationship with the coal mine: employment and local aspects. This connection reveals a twofold process:

(1) Community identity is contaminated by occupational identity, accompanied by an expressive omnipresence of coal: ‘You go outside and it's the mines, you go to the bar and you talk about the mines … It's as if you're reporting on work. But that's the environment we have here and that's how we live’ (I-10).
(2) The overlapping of class-belonging identity and community identity. Its expressive dimension is, above all, collective industrial action, resistance. It demonstrates a more complex interrelationship between individuals and the collective and it gives solidarity a central role. This is because the ‘solidarity that's created down there’ (I-08) mostly contains a strong component of family and generational tradition (which is, after all, cultural): ‘You trust your colleagues like you do your own family, well, they are part of your family’ (I-15). Informants from families with mining tradition, which are the majority, confessed that this feeling starts when they are children, ‘watching my father come home from the mine every day’ (I-18). Thus, the family dimension of this process directly links emotions to community identity, which connects with class-belonging identity in the local collective space: the town. This is one of the most important characteristics influencing and, consequently, modifying, over time, *class* feelings in the coal-mining collective.

Finally, (dis) continuities in the sense of belonging, feeding resistance identities, would be influenced by an individual mediation that, in recent decades, has revealed major contradictions between private interests and perceptions and collective demands (García, 1997: 21), which have been resolved differentially. As a result, there are informants that, after mine closure: a) continue their links with trade unions or political parties, even with responsibilities in them; b) have channelled their activity through participation in community associations (homeowners, sport and culture) and mining museums; c) have become involved in productive enterprises; and, lastly, d) have completely removed themselves from the sector, from any collective action and, in some cases, from the territory.

4.2. Reactivating factors of meanings linked to legitimising coal identities in the minescape

People give the mines symbolic power that is based on the past lived and is projected into the shared future. Aragonese ‘coalscape’ generates resistance responses to the change of the traditional model. The organising factors of these resistance responses are fundamentally: dependence, solidarity and justice. The priority granted to these sources of meaning lies behind individual and collective resistance behaviours.

Dependence or the degree of individual/social (economic, sociocultural and territorial) connection has become a clear organising factor of collective attitudes and responses to energy transition in HCRCs. Social reliance stems from a long process of collective construction of time, place, relationships and habits around coal mining. Territorial reliance is linked to rootedness and place attachment and establishing feelings of safety, security, belonging and trust on a

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shared future in the inhabited place. Finally, minimal production diversification in these communities has resulted in high economic reliance.

Dependence was the main meaning source in legitimising identities. With the changes marked by decarbonisation, other reactive meaning sources based on solidarity and justice emerge.

Solidarity. The configuration of the identities presented and the way they are connected are based on the emotional foundation of sociality (Collins, 2001, 2009). Community and class identities seem to have more ties with a complex form of solidarity with strong roots in 'the sociality in the here-and-now' (Collins, 2009: 17). Solidarity associated with class-belonging identity has arisen in everyday life through being together in the mine, which becomes what Nancy (2001) terms being-in-common. It is 'comradeship' or 'camaraderie' that is essential, given the inherent danger involved in mining activity and the certain fact that 'colleagues are the ones who risk their lives for you' (I-08). This characteristic, in the opinion of the interviewees who have worked in other employment environments, differentiates mining from other sectors and, consequently, differentiates miners from other workers. Individuals forge a different kind of relationship that is also strengthened by the long time they spend together in the mine.

In crisis scenarios, solidarity expands from being specifically employment related to being community related: 'Coal puts food on the table for all of us. We'll keep fighting for investment and aid to come to the area' (I-20).

Consequently, social protest for many informants is a way to be together again for a shared future, as a source of what Collins calls 'emotional energy'. Individuals' participation in collective actions is experienced as a source of feelings, sense of community and motivations with a strong symbolic and emotional content, in which emotions bring together social aspects and mobilise resistances.

'On the mining march from Andorra to Madrid there were really emotional moments. There were all kinds of people there … but you were thinking: this is hugely complicated and despite that the conflict and despair brought us together, even though you would have thought otherwise' (I-05).

Justice. Given the immediacy of mine closures, another resistance identity based on justice emerges. As it has a low-profile expression, justice-based resistance is further from opposition pathways and closer to negotiation, transfer and adaptation pathways.

'They tell us to stop the protests because they'll bring companies; but absolutely nothing is happening here. One day they tell you they're going to need people here and another that the company will give you work 400 km away' (I-21).

The justice factor is expressed especially by informants aware of the irreversibility of a mine closure and the end of a coal cycle. Their narrations are constructions to express their vulnerabilities to the new energyscape, a feeling of emptiness, uncertainty, community incapacity and especially the two below:

- Sense of abandonment. 'They haven't been clear. During the elections they all said they supported coal, but when they announced the aid was ending, ENDESA (an electricity company) disappeared and left us in the lurch' (I-23).
- Breakdown of some chains of trust (Dwyer and Bidwell, 2019): 'Offering millions is sometimes neither good politics nor governing. So, when the millions really did run out, they slammed the door shut. We don't want promises any more. We want justice and action' (I-20).

Paradoxically, success in the decarbonisation process equates to a process of loss and a social death foretold within the HCRCs. Individual impotence and collective incapacity become resistance that projects responsibility outside communities, 'demanding institutional attention' (I-03), and territorial justice.

4.3. Overcoming adaptive dilemmas to generate new project identities

Resistance identities have three strong components: a) opposition to the disappearance of coal: 'Yes to coal', b) the refusal to renounce identity: 'we don't want to stop being what we have been for 100 years' (I −15), and c) the inability to imagine futures without carbon: 'It was a death foretold given the European energy policy, but nobody wanted to pay attention or think about the catastrophe the entire province was facing' (I-25).

Now that reality has set in and awareness processes have been activated, since global decarbonisation is irreversible, other inevitable future scenarios have led to identity debates with individuals facing adaptive dilemmas that will be resolved differently depending on the community (Table 2).

Incorporating the notion of justice in resistance identities points towards complex change, which is hindered by the consequences of the captivity that the mining-energy sector and the industrial monoculture have imposed upon the HCRCs: low economic diversification, narrow set of professional skills and qualifications in the area, or non-entrepreneurial culture.

Once the denial phase is over and the path towards change has begun, two approaches are possible according to Stirling (2014): transition and transformation. Concerning the former, recent decades have witnessed failed attempts to move forward with a compensatory transition. Nevertheless, as a discourse and perspective, it still enjoys a great deal of acceptance and suggests the inherited dependencies of the minescape.

Compensatory policies for mining regions have been largely economic and have eschewed the social (Miller et al., 2013), cultural and territorial relevance of energy transitions. Although compensating stakeholders has been deemed inevitable in all contexts (Strunz and Schindler, 2018), the strategies of advantageous early-retirement packages and grants to help companies create alternative employment do not appear to have proved efficient in persuading people to accept transition in HCRCs or to perceive hastily-devised alternatives within the framework of justice.

The result of these policies is that many informants feel like the 'losers' in the transition (van Steenbergen and Schipper, 2017) because the continuity that carbon gave them is broken and they feel unable to build a territorial political project that is adapted to the new sociotechnical conditions.

Designing a governance framework that minimises threats arising from the change, incorporates palliative strategies and meets the demands made by a population still highly dependent on carbon is

Table 2
Identity debate and adaptive dilemmas in Aragonese HCPCs, linked to awareness of the end of the coal cycle.

Adaptive dilemmas	
Resistance identity	Project identity
Resistance	Project
Reactive action	Proactive action
Conflict	Change
Continuity	Adaptation
Opposition	Acceptance
Compensatory transition	Protagonist transformation
Distrust	Trust
Dependence	Interdependence
Scepticism	Participation

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complex: 'People want a large company to replace ENDESA' (I-25). However, which projects or infrastructures could replace carbon infrastructures, feed an imaginary of prosperity and promote the rapid reconstruction of new legitimate identities?

The second major pathway is transformation. However, since it needs to become prominent for the sake of individuals and communities, HCRCs do not seem prepared for it. Individuals as agents are an essential part of any transition model (Moreau et al., 2017; Sanz-Hernández et al., 2019), but they must first become aware of the break with the minescape and recognise themselves as necessary stakeholders.

5. Conclusions and policy implications

HCRCs have recently endured an agonising history with a high loss of employment, population and hope for the future. The lesson for HCRCs is that global processes mean local, social and personal losses (Tschakert et al., 2017). One of the main collective losses that can be observed in HCRCs is uncertainty and incapacity in accounts of possible futures.

Coal's decreasing importance as a main power source and the worldwide reconfiguration of the energy sector (International Energy Agency, 2016) are having a sociocultural impact on communities and their identities. Despite the interest shown by social sciences in energy as a topic, these impacts have not yet been sufficiently analysed in the current literature on energy transition.

Compared with other societies that are more active in their defence of energy transition, the Spanish society's attitude has been ambivalent. Besides the specific motivation of coal workers' mobilisations from 2010, and their intermittent recurrence since, they have been structured in a scenario in change in which two circumstances have converged, one long-term and one short-term: 1) a long process of reducing the number of workers in this economic activity, the announced disappearance of mining and the coal phase -out process; and 2) the short-term emergence of social movements in the Spanish scenario with the subsequent increase in social mobilisation. Both contextual factors are difficult to differentiate in the analysis but converge to amplify the collective action to defend coal and to reactive coal-based meaning sources and resistance identities.

HCRCs in a Spanish coalfield were analysed to understand how the change in the sources of meaning of resistance identities occurs and to help stakeholders and decision makers move forward in the process of cultural adaptation to new energy systems.

Most of the interviewees (both men and women) recognise their ties with coal (occupational identity), some are 'miners' above all else (class-belonging identity) and, in general, all (mine/thermal power plant workers, subcontracted personnel and retirees) want their community to survive (community identity). That is why they have built resistance identity in response to the end of coal infrastructures. However, social resistance efforts to energy transition also highlight discontinuities and rifts in the midst of an intense identity debate: 'Now you know you're not going to earn anything. You turn up so that if they see you there, they don't say: but you're a miner for God's sake' (I-07).

Global decarbonisation parallels a process of 'personal and social disengagement', and some of its manifestations have already been seen in the discontinuities that have emerged and their impacts, for example the sense of belonging and identity redefinition.

The informants mention that the social ties of the past—when coal kept active all the economic, sociocultural and territorial aspects—have disappeared or are becoming weaker. These discontinuities are the main indicator that identification with the profession and the class is slowly vanishing as time passes, although the emotional bond with the community and its mining culture legacy is still going strong. This emotional bond manages to tap into solidarity and bring individuals together to revive their protest at specific times.

Protesting and defending coal have evolved as the ways in which workers and their families relate to coal have changed. The territorial component is currently stronger than the employment component and it mainly conveys a collective concern for the survival of the communities in their area. This article argues that public protest to coal phase-out is based on a strong personal and collective dependence highlighting three essential dimensions: economic, sociocultural and territorial. Understanding the position of HCRCs is difficult without considering all three of them. This reliance on coal has moulded identities juxtaposed with emotional bonds stoking social protest and the lack of acceptance of energy transition. The first two, occupational identity and class identity, are based on employment. The community identity (extendable to the entire coalfield) has a territorial basis (rootedness, place attachment). It is the territorial component that has highlighted the HCRCs' vulnerability in this article and the paradoxes surrounding a just transition when so many detractors and defenders of phasing out coal resort to justice arguments, but using their own frame of reference.

The justice factor can promote pathways towards future legitimising identities based on majority and consensual identity devices. However, this will only be possible if they are based on innovative governance that avoids past political errors and shifts the emphasis from a compensatory to a truly transformative transition. Such a transition should include the design of transition contracts to adequately structure political strategies at three levels—individual, local and national—and integrate all stakeholders and HCRCs.

On an individual level, transition contracts can favour pathways from resistance to adaptation based on inclusive and sustainable projects that facilitate new cultural attributes and a progressive cultural transition: a) guaranteeing employment, b) ensuring welfare for families, and c), guaranteeing the social sustainability of communities. However, without individual awareness and personal acceptance of the change there is no project for the future.

The local level is also relevant, since no future scenario is viable, sustainable or equitable without social acceptance. HCRCs should drop their resistance identity and trust that a new project identity can be created. Although decarbonisation is a project that can integrate legitimising identities, mining communities build a resistance identity to it based on questioned or stigmatised positions or conditions. Confrontation between the legitimising identity and the resistance identity has resulted in three tension binomials (Castells, 2000) in HCRCs that require more attention from policymakers: conflict–change (adaptive dilemmas), resistance–adaptation (identity re-configuration) and community–individuality (spaces of dialogue between individuals' aspirations and collective interests).

Finally, the role of a nation state in stabilising energy scenarios and governing the resources necessary to attain them is closely associated with the 'power to imagine futures' (Kuchler, 2017). Thus, the national level is very relevant in this matter since government institutions have the capacity to promote collective technoscientific visions (Ballo, 2015) and to put some imaginary ones on the political agenda or reject alternative ones (Levidow and Papaioannou, 2014). The consideration of vulnerability in transition strategies so that the notion of justice is useful at both a community and global level should also be included. Both discourses must be managed by understanding their context, their historical situations and their future possibilities. A future that is created together respects the community's baggage and is just for the most vulnerable territories.

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Appendix A. Supplementary data

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