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MORE THAN A FUEL TRANSITION: COMMUNITY SUSTAINABILITY IN THE GLOBAL ENERGY TRANSITION

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ABSTRACT

One relatively under-discussed aspect of the ongoing global energy transition is the slow but insidious shrinking in ambition, from paradigmatic change to acquiescing in a demoralizing 'fuel transition'. Despite the proclaimed necessity of multi-dimensional transitions, the policy paradigm of the fuel transition seems to be the emerging lowest common denominator of national energy transitions worldwide. This is so despite the divergence in overarching goals, i.e. sustainability and access, that appear to guide national energy transitions in high and low-income countries, respectively. The policy drift towards a mere fuel transition is however strongly resisted by committed environmentalists and community energy initiatives. Against this backdrop, this paper asks itself how community energy initiatives that have been thrust into the renewable camp by the excesses of the fossil regime can contribute to bring into reality a more-than-fuel transition. More specifically, this paper scrutinizes: first, how values of 'community sustainability', even though non-related to the environment, inform their business models as well as their ideals about the energy transition; and second, to what extent those values relate to imaginaries of environmental sustainability. To bring fresh air into the increasingly populous academic field of community energy, the paper examines the under-researched domain of long-standing community energy initiatives that have recently joined the renewable camp. In contrast with the archetypical community energy project, these initiatives are animated by motivations other than environmental values. Their motivation often lies, instead, in mobilizing the generation or distribution of electricity as a vehicle to safeguarding and reproducing what they deem inestimable communitarian values threatened by powerful external forces.

Although exploratory, this paper is animated by a broad geographical and comparative curiosity about the diverging policy landscapes of sustainability and access transitions in the North and the South, respectively. Accordingly, it explores the case of one non-militant community energy initiative on each side of the income divide, in Spain and Ecuador. In Spain, it looks at the case of Cooperativa Elèctrica d'Alginet (CEA), a community-owned distribution utility established in the late 1920s and that sells renewable energy to its local customers since 2015. In Ecuador, it investigates the case of HidroÍntag, a community-led initiative that sets up mini-hydro plants as a means to sustain local values in the face of the threat of the adjacent mining industry. The findings draw upon documentary analysis, interviews to approximately thirty informants and participant observation. Preliminary results point to the weight of previous struggles against regime incumbents, i.e. one big electric utility in Alginet and the extractive industry in Íntag, as a force shaping the business model as well as ideals of environmental sustainability. More specifically, these findings show how members of these community energy initiatives associate current ideals and practices that point to a more-than-fuel transition with past conflicts with regime incumbents. Conceptually, this enriches our understanding of community energy initiatives, whilst empirically it speaks to the prospect of enlisting sectors of the population other than deep environmentalists in the agitation for a more-than-fuel transition.

Industrial economies are back in square zero. After two centuries of energy abundance, they have met again the two issues that they considered resolved once and forever: material scarcity and demographic growth on a geometrical basis (Wrigley 1988, 2016). The engineers that made the Industrial Revolution believed to have replaced environmental restrictions in favour of sustained industrial growth (Pomeranz 2000), by unearthing high energy-dense fossil fuels on a scale never seen before (Haberl et al. 2011, 2016). Two centuries and a half later, however, the Anthropocene environmental crisis has shattered the technical, economic, political and social arrangements carefully orchestrated by the industrial regime (Mitchell 2011; Steffen et al. 2011; Swyngedouw 2015). The five technical revolutions since the mid-18th century (Perez 2010) have paradoxically led paradoxically to a new organic threshold. Therefore, present societies seem compelled to embark upon an energy transition that offers an answer, this time organic, to scarcity and demography (Fischer-Kowalski, Haberl, and Krausmann 2007; Friedrichs 2013; Hornborg 2013).[1]

However, the ongoing transition seems to head in a different direction. Policies, whether global or national, seem to have converged over a project for a low-carbon energy transition. The consensus is confining the transition to a mere substitution of the energy base. The dominant assumption is that the energy transition must aspire to a low-carbon economy, which above all means the replacement of fossil by renewable fuels (Baptista and Plananska 2017; Lilliestam and Hanger 2016; Rosenbloom 2017; Strunz 2014). Consequently, progress towards the transition is expressed and quantified in the reduction of equivalent tonnes of CO_2. The climate consensus thus disregards an alternative diagnosis that not only laments the fossil energy base but also the non-sustainable modes of use of energy, and which coherently calls for radical changes in social infrastructure, modes and patterns of life and work, and the distributional aspects involved in sharing the gains and losses associated to the transition (Jasanoff and Kim 2013). The climate agenda which has become dominant after Kyoto and Paris reflects how the climate narrative has progressively reduced sustainability to climate, thus limiting changes in the biosphere to the effects of climate change (Hulme 2011). In this narrative, climate change is presented as a de-politicised account, reduced to a technical order and limited to the goal of reducing emissions to the atmosphere which overrides any other aspiration (Kenis, Bono, and Mathijs 2016; Kenis and Lievens 2015; Swyngedouw 2011, 2015). For instance, the climate consensus has virtually ignored sensible warnings about the inevitable need to reduce consumption, and to undertake attendant transformations in users practices, regulations, industrial networks, markets and infrastructure (Geels 2002; King and van den Bergh 2018; Verbong and Geels 2010). In so doing, the climate consensus has effected a twofold reductionism: from sustainability to climate change, and from climate change to decarbonisation. The displacement from sustainability to climate changes underlies understandings of the energy transition as a mere process of decarbonisation.

Against this backdrop, a sizeable number of grassroots initiatives have raised their voices against the reductionism to a mere fuel transition. The reaction of a plethora of grassroots initiatives motivated by their criticism against several dimensions of the fossil energy regime as well as the explicit aim of fostering the energy transition has been particularly vocal. These initiatives of "energy environmentalism" have fructified in renewable energy companies (Becker, Kunze, and Vancea 2017), community energy projects (Holstenkamp and Kahla 2016; Seyfang and Smith 2013) and campaigns advocating for the public ownership of municipal distribution grids

[1] Alternative socio-political arrangements such as a *Green New Deal* or a green industrial revolutions cannot be ruled out (Jessop 2012; Newell 2015; UNEP 2009).

(Becker, Beveridge, and Naumann 2015). Furthermore, they have contributed to discursive frameworks such as energy democracy, just energy transition or energy transition (Becker and Naumann 2017; Heffron and McCauley 2018; Jenkins et al. 2016). Regrettably, in studying socio-political projects beyond a mere fuel transition, the academia has focused its attention in those initiatives born under the auspices of the energy environmentalism movement (and also, more often than not, only looked at initiatives in Western countries). Consequently, the academia has given relatively short thrift to other grassroots energy projects that, without explicitly aiming to foster an energy transition, are increasingly adopting practices and narratives that are akin to such a transition (Islar and Busch 2016; Seyfang, Park, and Smith 2013). One of such projects underrepresented in the literature are those initiatives initiated by communities with a strong orientation toward mobilising the generation and distribution of energy for the benefit of idiosyncratic societies, territories and cultural forms (Bomberg and McEwen 2012; Klein and Coffey 2016; Wirth 2014). In particular, one question virtually not addressed by the literature is how communitarian forms inform complex conceptions of sustainability, of a marked territorial character. These conceptions are particularly interesting as the accent in communities and local economies may translate into differentiated formulations of sustainability. Ultimately, community initiatives that to date have remained relatively residual might conform an autonomous and differentiated pathway towards a more than a mare fuel transition.

In this study, which is markedly exploratory in character, we set out to offer a geographically broad perspective, if partial, of those grassroots community initiatives that are not inspired by the energy environmentalism movement. We do so by putting together two initiatives associated to the power sectors of Spain and Ecuador. In Spain, we analyse the case of Cooperativa Elèctrica d'Alginet (CEA), set in the region of Valencia. In Ecuador, we study the HidroÍntag project, set in the province of Imbabura. We explore both cases with the aim of finding tentative answers to two question: to what extent do communitarian values inform their recent productive trajectories? And how do these cases formulate aspirations to sustainability for the electricity regime, their communities and society in general.

To do so, we draw upon interviews administered to approximately twenty informants from CEA and HidroÍntag, as we all as to stakeholders of both initiatives, from December 2017 to April 2018. We also draw upon the analysis of texts produced by these initiatives. In the case of CEA, informants were selected by agreement with a gatekeeper in the cooperative. By having done so, we accept an inevitable bias toward the core of staff and board members that have been at the forefront of the strategic turn in the organisation of the last two decades.

COMMUNITY SUSTAINABILITY AND TERRITORIAL EMBEDDEDNESS

Territorialisation has been identified as a key element in energy transition initiatives. An example is Anneleen Kenis' work (2016) that contrasts two climate transition movements, namely the Transition Towns y the Climate Justice Action movement. In singling out two approaches to ecological citizenship, her research identifies a vital difference in terms of what Kenis conceptualises as the five features of collectivity: "how the movements define the boundaries of their collectivity, how they conceive of the social relations within the collective, and, between the community and society at large, where they situate the motor of change and how the common good is understood" (Kenis 2016, 957–58). According to the findings, the emphasis in the local as well as in scale are fundamental in the Transition Towns (vs. a de-territorialised approach in the Climate Justice Action movement); the rejection of the distinction

between they/us, inside the community as well as outside (vs. the accent in antagonistic interests, power relations and conflict); the idea of re-situating change on a local scale (vs. the global scale); and the notion that it is possible to strike a consensus over an idea of the common good at the local scale (vs. notions that are shared only with a given political community).

At the same time, the notion of embeddedness, popularised by Granovetter (1985) but developed much earlier by Polanyi (1944), can help us to grasp the territorialisation of productive activities. The idea in Polanyi is that the actions of economic actors are embedded in relationships and institutional environments that are spatially situated, and that mould to a good extent the purposes and behaviour of such economic actors (Smith and Stevens 2010). In Polanyi, this goes against formal visions of the economy, in which social relations play a minor role, if any, and are presumed to remain disconnected from society. For Polanyi, by contrast, social relations are subsumed and, therefore, commoditised, in the modern market economy. Thereby, the embeddedness that Polanyi refers to concerns the intimate relation between form of exchange and other forms and non-economic institutions in society. In Granovetter, however, the idea of embeddedness takes a different meaning. In his view, embeddedness denotes social relations that generate trust. This includes those relations that take place impersonally between two actors as well as those which happen through the insertion in networks (for our sake, community networks).

In line with this second, broader understanding of embeddedness, the scrutiny of territorial embeddedness in the trajectories of community-led productive initiatives offers at least three analytical angles: the degree of faithfulness to the original purposes; the perceived or claimed benefits for the community; and the forms of participation, ownership and control that the initiative materialises. As regards the original purposes, movements such as those advocating for de-scaling toward local economies have posited territorial embeddedness as the sine qua non for a change in the socioeconomic model (Bailey, Hopkins, and Wilson 2010; Nicolosi and Feola 2016). In the domain of energy, analogue approaches abound. Thus, managers and activists in four Dutch networks of renewable energy production state as the goals of their actions: “promoting and implementing sustainable energy production units on both an individual and a community scale; keeping financial resources in the community with a view to invest profits in local sustainable goals; enhancing democratic influence of citizens on their energy provider” (van der Schoor et al. 2016, 102). As regards the benefits for the community, some authors have suggested how claimed positive effects on the promotion of a civic culture (Hoffman and High-Pippert 2005) and the resilience of communities vis-à-vis negative environmental impacts (Barr and Devine-Wright 2012). Other benefits for communities that embark upon a decarbonisation path include an environment that facilitates sustainable behaviour amongst citizens (Heiskanen et al. 2010), or the diffusion effects from community initiatives toward conventional stakeholders (Yildiz et al. 2015). Lastly, as regards participation, ownership and control, the three are facilitated by open structures embedded in local contexts, even though the scope of the organisation is national (Pellicer-Sifres et al. 2018; Riutort 2016).

The emphasis on territorial embeddedness may inform specific formulations of sustainability. The term “community sustainability” would aim to capture the singular combination of environmental and socio-communitarian sustainability. An illustration of “community sustainability” is offered by the “communities of energy” movement, but also by some projects of community energy in which a concern with environmental sustainability is intimately associated to communitarian values such as the cultivation of local social capital (Devine-Wright, Fleming, and Chadwick 2001; Seyfang, Park, and Smith 2013), trust (Kalkbrenner and Roosen

2016; Walker et al. 2010) or a sense of place (Devine-Wright and Clayton 2010; van Veelen and Haggett 2017). Similarly, community sustainability would underlie those initiatives that have sought inspiration in the search of environmental justice (Holifield, Chakraborty, and Walker 2018; Joan Martinez-Alier et al. 2014; Schlosberg 2013), just sustainability (Agyeman, Bullard, and Evans 2003) or the environmentalism of the poor (Joan Martinez-Alier 2014; Juan Martinez-Alier 2002). By contrast, other initiatives seeking to mobilise local energy resources for the sake of models of local territorial development, although informed by strong communitarian values, have instead sought inspiration in approaches such as sustainable development that, whilst affirming that natural capital can be substituted (Pearce, Markandya, and Barbier 1989), aspires to combine economic prosperity and the protection of the environment (Redclift 2005; Williams and Millington 2004). Not in vain, the Brundtland Report itself already incorporated both a socio-economic and an environmental agenda. The sustainable development approach attained some popularity in public initiatives such as the local Agenda 21 (Calabuig Tormo 2008; Calabuig Tormo et al. 2010), but became easily identifiable in its accent on the substitution of the extant energy base in favour of renewable sources (King and van den Bergh 2018; Redclift 2005).

This section has reviewed a few analytical prisms that may help to interrogate both the territorial embeddedness and the formulations of sustainability adopted by community initiatives outside the umbrella of the energy environmentalism movement. In what remains of the paper we apply those categories to the cases of CEA and HidroÍntag. Firstly, we briefly describe and contextualise both initiatives. From then on, we scrutinise their recent trajectories from the prism of territorial embeddedness. Finally, we tentatively point to some aspects that may characterise how these two initiatives formulate their aspirations to sustainability.

THE COOPERATIVA ELÈCTRICA D'ALGINET AND THE HIDROÍNTAG PROJECT

The Cooperativa Elèctrica d'Alginet (CEA) is a cooperative established in Alginet, a locality in the region of Valencia, Spain, which distributes and sells electricity in the wholesale market. Founded in 1930, nowadays it serves a customer base of approximately 6,000 customers, almost all within the boundaries of Alginet, a small town of about 13,000 inhabitants whose economic activities lie mainly in the services and industry. Compared to other areas of Valencia, however, agriculture remains relevant, as it amounts to 25 percent of local production. CEA has a high profile in Alginet, given the volume of its customer base and the share of it who reside in the municipality. In recent times, CEA has set up a business group which spreads from generation to the distribution and wholesale markets, but has also set up a subsidiary offering telecommunication services in the region. Generating activities are relatively minor, however, as they only cover the project for a photovoltaic plant to be built in Alginet. Overall, the CEA group has grown from a staff of seven to a current workforce of thirty. CEA is one of the sixteen historical electric cooperatives that subsist in the region of Valencia (the total for the whole of Spain amounts to twenty-one), and that are confederated in a regional umbrella platform, the Federación de Cooperativas Eléctricas de la Comunitat Valenciana (Federation of Electric Cooperatives of the Comunitat Valenciana).

In the aftermath of the liberalisation of the Spanish electric sector inaugurated in 1997, CEA has been very active in advocating for the recognition of cooperatives within the legal framework, something regularly disregarded by successive Spanish ministries. At the same time, CEA has also been forced to adapt to a market that has incentivised the consolidation of an oligopoly of

large private companies in the distribution and wholesale markets (the largest five private companies account for 80 percent of the market and about 20 million contracts; for the sake of contrast, the largest renewable energy cooperative, Som Energia, has a customer base of 70,000, whilst the largest municipality-owned utility, Eléctrica de Cádiz, has 62,000). Recently, 18 Spanish electric cooperatives operating in the wholesale market, representing in excess of 25,000 affiliates, have joined forces in Unión Renovables, a lobby aimed at influencing policymakers. Interestingly, Unión Renovables' members include traditional electric cooperatives, such as CEA, as well as renewable cooperatives born in recent times from the energy environmentalism movement.

Over the last fifteen years, CEA has stepped up its core activities. It has set free from being supplied by the regional private monopoly, Iberdrola (by inaugurating in 2012 an electric substation that links its local distribution grid to the national high-voltage grid, thus bypassing the privately-owned regional grid); it has substantially improved the quality of its services, well ahead of other similar companies, private or public (it rolled out completely smart meters in 2008, ten years ahead of the deadline set by the authorities); it has shifted to selling electricity 100 percent from renewable sources (since 2015); it has expanded its geographical reach to the regional and, potentially, the whole national market (since 2017); it has diversified its business activities (telecommunication services since 2014); and it has become the testbed for two European projects in the management of smart grids (NobelGrid www.nobelgrid.eu and Hyrim www.hyrim.net, since 2011). As a result, CEA is today one of the few electric utilities that delivers actual data about daily and monthly consumption to its customers.

The HidroÍntag project was born in 2008 in the Imbabura province, Ecuador, a region in the Andes dominated by agriculture and cattle raising, which hosts a rich biodiversity, low population densities and considerable mineral wealth. Íntag has a population of 17,000, scattered across small communities. The region has become one of the hotspots of mineral extractive activities. In opposition to extractives and their economic model, the local population, led by an umbrella organisation, Corporación Toisán (CT), has embarked upon a range of economic activities – especially, organic coffee production, craft (soap, cabuya and aloe vera derivatives), and tourism (eco-tourism and rural communitarian tourism). The HidroÍntag project offers an additional path to materialise local development alternatives vis-à-vis the extractive model, but it holds the promise to attain a higher volume of turnover than the existing productive activities, with the aim to counterbalance pro-mining economic arguments. By contrast with CEA, HidroÍntag does not pursue the production of electricity per se, nor it aims to ensure access to electricity (when HidroÍntag was born, electricity in Íntag already reached 96 percent of households). The aim is to derive a sizeable source of income for the area. The rationale is that by selling electricity local social organisations will be able to reinvest part of the turnover in productive activities seeking to foster a local non-extractive model of development, thus establishing synergies with already existing productive activities. The participation of social organisations from the Íntag area is guaranteed by means of an escrow fund, which will benefit from a share of the turnover associated to electricity production. This legal and organisational formula is suited to the Ecuadorian regulatory framework, which constraints power generation activities to publicly-owned utilities and companies in which the state has a majoritarian stake, but which simultaneously allows selling electricity to large off-takers, not necessarily state-owned. Despite the fact that HidroÍntag had envisaged to build 10 mini-hydro power plants, currently only two (Central Nangulví and Central Apuela, totalling 11 megawatts) have seen some progress. As of 2018, both have completed their pre-feasibility studies. Each mini-hydro power plant will be set up as a company owned by a state-owned municipal company (Cotacachi,

51 percent of shares) and a private cement company (UNACEM, 49 percent of shares). UNACEM will be the off-taker for both projects. Given some uncertainties about the results of the feasibility studies, as well as about the legal permits, UNACEM has decided to put the two projects on hold until further legislation is passed (which is expected to happen during the summer of 2018).

TERRITORIAL EMBEDDEDNESS IN THE PRODUCTIVE TRAJECTRIES OF CEA AND HIDROÍNTAG

Staff and Board members in CEA refer three key milestones over the last fifteen years of organisational trajectory: the new Board, elected in 2004, which inaugurated a strategic reorientation both as business and social activities are concerned; the construction of the electric substation, initiated in the mid-2000s and completed in 2012; and the deployment of smart meters for all customers, completed in 2008, and which subsequently led to the involvement in two Europe-wide pilot projects in the management of smart grids.

The new Board, elected in 2004, brought about an injection of fresh ideas to CEA. The new intake of Board members was motivated by the will to attain higher levels of affiliates' participation and to expand the activities of the cooperative beyond the mere supply of low-priced electricity. The new Board focused upon two lines of action: on the one hand, to improve the quality of electric supply and, more broadly, of the services offered by the cooperative to its customers; on the other hand, to strengthen the programme of subsidies and grants to a range of social groups in Alginet, especially those most seriously affected by the economic crisis that broke off in 2008. As the quality of supply is concerned, its improvement was premised, in the first instance, upon finding a solution to the recurrent restrictions in the supply of power established by Iberdrola, the second largest private utility in Spain according to the number of contracts, that owns and operates as a monopoly the regional distribution grid from which CEA obtained the electricity.[2] Recurrent restrictions in the amount of power delivered by Iberdrola resulted in blackouts and further restrictions to CEA's customers. As a result, by 2007 CEA had filed 25 lawsuits against Iberdrola. The electric substation completed in 2012 bypassed Iberdrola's grid and linked CEA directly to the semipublicly-operated national high-voltage grid. With a similar aim to improve the quality of supply, CEA embarked upon 2008 in the rollout of smart meters to each customer. Once deployed, smart meters revolutionised the billing process. Costs dropped, and several sources for human error were eradicated: human readings, estimated bills and discrepancies between customer and CEA concerning impromptu lofty bills. Also, the information about consumption supplied by the smart meters allowed CEA to offer better advisory services, especially as energy efficiency is concerned. This became particularly important once instances of fuel poverty increased considerably after 2008. Suddenly, the early and successful deployment of smart meters put CEA under the radar of a number of technological partners interested in implementing pilot projects on the management of smart grids. In particular, the Spanish technological transnational ETRA invited CEA in the early 2010s to participate in two Europe-wide projects (Nobel Grid and Hyrim). Besides helping CEA to acquire cutting-edge technical know-how, both projects also raised its visibility vis-à-vis key Spanish and European actors in the power sector, including policymakers, and facilitated new

[2] Source: Comisión Nacional del Mercado de la Competencia.

technological alliances. At the same time, these projects also boosted CEA's visibility and prestige in Alginet, given the notoriety achieved in the local media.

As social activities are concerned, the new Board soon increased the range and amount of grants and subsidies toward social groups in Alginet. Such allowances had traditionally focused on social and sport clubs. Soon, other organisations started to receive financial assistance from CEA, including music clubs, the local Fallas, the Holy Easter brotherhoods, but also local writers who experienced difficulties in seeing their works published. In 2005, CEA started to subsidise more generously the "day of the electric cooperative" within the framework of the local festivities; in 2008, a discount for those already retired was set up; in 2011, CEA inaugurated a programme that subsidises primary and secondary school textbooks as well as the expenses involved in end-of-course trips; in 2013, it instituted a food subsidy for the neediest; and in 2016 it started to sponsor a "cooperative village" in India. All these subsidies were met with warm approval by the affiliates and the population of Alginet in general. Affiliates began to show an earnest interest in the calendar and modalities of delivery of the subsidies. These programmes were set up with the goal of ensuring that no one in the community was left behind, particularly against the background of the economic crisis. The allowances were designed in such a way as to ensure that beneficiaries would have to spend the amount involved in the largest possible number of local shops, thus boosting the local economy.

Even after the strategic turn inaugurated in 2004, the main purpose of CEA continues to be the delivery of low-priced electricity to the households, commerce and industries in Alginet, as a means of contributing to their welfare and economic development. At the same time, however, the original purpose has expanded in new directions, especially toward the provision of social benefits to the community, but also toward the diffusion of environmental values and the supply of renewable electricity. This shows a considerable expansion of the influence of territorial embeddedness in the productive trajectory. In a similar vein, the participation of CEA's affiliates is also perceived in terms of its embeddedness. Members of the Board point to the fact that the main difference between CEA and the renewable energy cooperatives motivated by energy environmentalism is the territorial scale. Whilst in electric cooperatives such as CEA proximity facilitates effective participation, in renewable energy cooperative with a national scope distance and dispersion constitute a serious obstacle. Participation, it is recognised, has also been boosted by the heightened visibility offered by smart grid projects. The president of the Board thus notes how, after several years in office, an affiliate approached him for the first time asking to be considered in upcoming Board elections, an interest unheard of in previous times.

HidroÍntag was created with the aim to consolidate a territorial, non-extractive model of development for Íntag. A number of motivations led the local social organisations to set up this project, namely: improving public infrastructure and services; quelling immigration to other regions by youth and students; catalysing the local economy, through productive activities and the promotion of environmentally and socially sustainable undertakings over the long term; preserving but also exploiting natural endowments; strengthening social society, especially community bonds; and empowering the civil society with the goal of fostering the co-production of socio-productive dynamics in the territory. Also, since 2009 local organisations have been teaching construction and management skills to local residents for their hire in the project.

These motivations were reflected in the process of siting of the mini-hydro power plants associated to HidroÍntag. In 2007-08, Corporación Toisán, with the help of international development partners, assessed the hydropower generation potential in Íntag. As a result, twenty-seven potential sites were identified. From then on, a participatory process which

involved social organisations and local public institutions defined a number of social, economic and environmental criteria to pick the 10 best sites. Among the criteria, the best sites included those in which hydropower production would entail the lowest environmental impacts, that would not vital productive activities such as tourism, and those with the most positive financial return.

As already mentioned, one chief principle was to strengthen autonomous local entities endowed with the capacity to influence territorial dynamics. This principle translates to the innovative organisational structure of HidroÍntag: a public-private utility associated to an escrow fund, in which part of the turnover (not profits) are reinvested locally with the involvement of civil society organisations. The escrow fund was designed according to turnover and not profits to avoid that in the event of losses the utility eludes its responsibility to contribute to local development. Moreover, the legal specifications of the escrow fund shield off the project from potential changes in the incumbents in the municipality of Cotacachi, or in the management of UNACEM. The exact amount to be reinvested is yet to be decided however, depending upon the results of the feasibility studies and the passing of remaining pieces of legislation nationwide. Part of the resources generated will be directed to the councils that manage the river basins in the area. The Nangulví council, the most advanced, has already ruled that 50 percent of the financial resources allocated to it will be invested in environmental conservation and recovery of water resources in the basin; 35 percent in productive activities, such as existing ecotourism, agroecology or cattle raising undertakings, but with a stronger sustainable profile; 5 percent to organisational strengthening, community leadership and capacity building; and the remaining 10 percent to socio-cultural and sport activities.

It is important to note that an extensive network of social and productive organisations has grown in parallel to the resistance against mining activities. This hints to the emergence of an "imagined community" (Anderson 1983) in the Íntag Valley. This sense of belonging to a social group in the area is expected to project and materialise a representation of Íntag on non-extractive terms, thus helping not only to quell mining but also depopulation and the weak dynamism of traditional agriculture that was already present even before the extractive threat.

COMMUNITY SUSTAINABILITY IN CEA AND HIDROÍNTAG

The parallel trajectories of CEA and HidroÍntag reveal two differentiated pathways in the deployment of a notion of community sustainability. The analysis that follows show that at the core of a discrepancy between two forms of community sustainability lie distinct accents between environmental and socio-communitarian sustainability. Whereas in the recent trajectory of CEA socio-communitarian sustainability continues to prevail over environmental sustainability, in HidroÍntag the balance is more even. As a possible explanation, the discussion below points to the different status of sustainability in the diagnoses about the energy regime and the overall socioeconomic system.

In CEA, the recent trajectory unveils two emphases in terms of environmental sustainability: efficiency and renewable generation. The environmental diagnosis shared by staff and the board members is that the central issue that contemporary societies face is the depletion of resources due to excessive consumption. To address this problem, different actors must collaborate to increase the environmental awareness of the population, in particular as more efficient uses of

energy are concerned; also, the negative impacts of electricity generation must be considerably attenuated or eradicated by means of a full shift to renewables. Over the last years, CEA itself has promoted environmental awareness in energy efficiency and renewables. For instance, it launched a campaign against "energy vampires", to incentivise the substitution of inefficient domestic appliances, stand-by consumption, etc.). It also participated in a number of demonstrative workshops in schools and social gatherings. As renewables are concerned, the recent trajectory of CEA has only incorporated that aspect very recently through a project launched in late 2017 to build a photovoltaic plant in the terrains of the substation. It is worth mentioning that the promotion of environmental awareness is also one of the motivations for this project, given the visibility of the site. However, photovoltaic projects like this one have not been implemented in previous years despite the self-stated commitment to renewable production amongst CEA staff and the Board, due to insufficient financial returns. If environmental sustainability has progressively informed the recent trajectory of CEA seems to owe more to the growing exposition to European and Spanish renewable energy initiatives instigated by the energy environmentalism movement (and instantiated by means of Europe-wide innovation projects and the newly born Unión Renovables). Nonetheless, the expansion of environmental sustainability has not dethroned the original purpose of delivering access to electricity in an affordable manner to the local community. Understandably, then, actions in relation with environmental sustainability have been directed to raising the awareness amongst the community and have permeated to a lesser extent the core business of CEA (even considering the shift in 2015 to supplying renewable electricity). Overall, environmental sustainability has remained weakly associated to socio-communitarian sustainability which, by contrast, strongly pervades the core business.

The recent trajectory of Hidroĺntag has invoked formulae of sustainability that point directly to the social and environmental impacts of the extractive economic model. A prominent theme in the narrative of Hidroĺntag is environmental (un)sustainability. Thus, this narrative insists upon the negative effects of large-scale mining: the excessive occupation of land, soil and water polluting, problems of access to water and sanitation and the overall degradation of ecosystems. Additionally, in the narrative of Hidroĺntag issues of environmental (un)sustainability are intimately connected to the socioeconomic sustainability of the community. The extractive threat bears directly upon the livelihoods of communities that draw upon agriculture and the exploitation of water resources. Likewise, large-scale mining jeopardises income-generating activities such as craft, ecotourism and rural communitarian tourism. Understandably, the core business of Hidroĺntag, which involves the production of electricity from mini-hydro, constitutes a strategy of income generation for the communities but also a means of acknowledging the value of ecosystems and water resources vis-à-vis the extractive model. By contrast with CEA, in Hidroĺntag environmental and socio-communitarian sustainability are closely intertwined.

It might be the case that the discrepancy between formulae of sustainability in CEA and Hidroĺngar could be related with different diagnoses. In CEA, their main criticism to the electricity regime concerns the injustices that it perpetrates against cooperatives. CEA points to the lack of recognition of the specificities of electric cooperatives, in particular the lack of full legal recognition to operate in electric markets[3]; as well as to the asymmetries between small electric cooperatives with a few thousands of customers and large, private utilities that have millions of customers, and for which the requirements of information are the same. Therefore,

[3] Before 2007, the regulatory framework mandated electric cooperatives to register in the Commercial Register, which according to Spanish law can only register private companies.

neither the diagnose incorporates sustainability nor it points more than indirectly beyond the electricity regime. Understandably, in CEA the initiatives that are motivated by environmental sustainability aim first and foremost to improve the environmental attitudes and uses of energy in the proximate community, even though it cannot be denied that they also seek to transform the electricity regime in a direction that is fairer with cooperatives and that does not deplete the planet resources. By contrast, since its very origins, in HidroÍntag the central problem to be addressed entails an intense sense of environmental sustainability but, also, has a strong systemic character. Accordingly, the response put forth by HidroÍntag (selling electricity to generate income for activities that contribute to a form of local economic development alternative to the extractive model) combines environmental and socio-communitarian sustainability.

CONCLUSION

In this paper we set out to redress the limited attention in the literature to community initiatives not motivated by the energy environmentalism movement. We also set ourselves the goal to explore to what extent it can be legitimate to affirm that a differentiated project of energy transition is emerging, a project that diverges from dominant pathways toward a mere fuel transition but also from the alternative given by energy environmentalism.

This study has made two fundamental findings. Our first finding is that the recent productive trajectories of CEA and HidroÍntag have been strongly permeated by their territorial embeddedness (as expressed in the faithfulness to the original purposes of the initiative, the search of benefits for the community and the will to increase participation, ownership and control by the community). Furthermore, in both cases, but especially in CEA, territorial embeddedness has asserted itself on equal footing with a self-identification with the objectives, forms of intervention and organisation of the social economy. Our second finding postulates that what we have called community sustainability adopts different formulae in the cases of CEA and HidroÍntag. In CEA, environmental sustainability is subordinated to socio-communitarian sustainability, whilst the relation between both is more equitable in HidroÍntag.

Our findings are relevant for two reasons. First, they point to the emergence of a project of energy transition beyond the mere fuel transition but at the same time sufficiently differentiated from the pathway of energy environmentalism. Even though neither of the two initiatives commits itself to helping to make the energy system sustainable as a strategic goal, taken together they suggest the emergence, if already embryonic, of an autonomous project of transition in which the emphasis on communitarian values and practices, as well as the promotion of local, territorialised economies, makes a difference. Second, our findings suggest that the notion of community sustainability, even though still requires further conceptual refinement as well as additional empirical contrast, may be useful to outline the contours of the antagonist conceptions of sustainability in the global energy transition.

Additionally, our two findings pave the way for a future avenue of research intent to explore the ongoing rapprochement between the project of energy transition animated by energy environmentalism, centred upon energy democracy and an eco-social transition, as well as heavily influenced by a climatic diagnosis, and the project of energy transition materialised by community-led productive initiatives such as those included in this study. One sign of the rapprochement in place is the foundation of a common platform in Spain, Unión Renovables. This future avenue of research might also look at potential barriers along the process. One

possible barrier might stem from the differentiated respective programmatic accents in community sustainability (electric cooperatives in Spain and community initiatives in Ecuador) and climate justice or energy democracy (energy environmentalism and the environmentalism of the poor). To interrogate the foundations and barriers that determine the pace of rapprochement promises to deliver not only a more precise characterisation of the multiplicity of projects of energy transition. It also points to the possibility of a broader discussion about the projects of energy transition beyond the mere fuel transition, and the wider transformation of national and global energy regimes. This discussion can be approached not only from the prism of the antagonistic conceptions of sustainability, but also from the angle of the multiple interactions and trade-offs between sustainability, affordability and security of supply, the three vertexes of the energy trilemma.

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