

Autonomy and pluriversal energy futures in Ladakh, India

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Abstract

In Ladakh, a trans-Himalayan region of India, two drastically opposite visions of energy transition are colliding head-on. The first is a grassroots, indigenous approach that emphasises on low-impact and socioecologically just energy practices, meant primarily for local consumption. The other is a government and corporate driven, technocratic vision pushing for large-scale energy infrastructure and critical mineral mining, to supply energy to high-consumption areas outside Ladakh. At the heart of this conflict lies the issue of governance and democracy, decision-making regarding ‘development’ and the use of land and local resources. Since early 2023, drawing on a longer history of struggles, a movement for autonomy, constitutional safeguards and statehood for Ladakh has intensified. The top-down and large-scale energy projects planned for the region have been challenged in this movement. The hope is that autonomy would empower locals to control their lands and resources and steer their futures, including those related to energy. Analysing these protests, we argue that constitutional safeguards and autonomy are essential for protecting and promoting socioecologically just energy practices. The demand for autonomy challenges the extractive view of Ladakh as a peripheral sacrifice zone for modern energy needs. Instead, it could be the basis for promoting local pluriversal technologies, low-impact lifestyles and democratically run and managed energy systems. At the same time, Ladakhis have to deal with internal contestations regarding visions of ‘development’ and prosperity.

Keywords

Energy transition, carbon neutrality, autonomy, land, governance, democracy, Ladakh

लद्दाख में स्वायत्तता और बहुविध ऊर्जा भविष्य

Abstract

भारत के ट्रांस-हिमालयी क्षेत्र लद्दाख में ऊर्जा संबंधी दो विपरीत दृष्टिकोण आमने-सामने हैं। पहला, स्थानीय दृष्टिकोण, जो कम प्रभाव वाली और सामाजिक-पारस्थितिक रूप से न्यायसंगत ऊर्जा प्रथाओं पर जोर देता है, जिसका मुख्य उद्देश्य स्थानीय उपभोग है। दूसरा, सरकार और कॉर्पोरेट संचालित तकनीकी दृष्टिकोण, जो लद्दाख के बाहर उच्च-उपभोग वाले क्षेत्रों में ऊर्जा की आपूर्ति के लिए बड़े पैमाने पर ऊर्जा अवसंरचना और महत्वपूर्ण खनजि खनन पर केंद्रित है। इस संघर्ष के केंद्र में शासन और लोकतंत्र, ‘विकास’ पर निर्णय लेने की प्रक्रिया, और भूमि एवं स्थानीय संसाधनों के उपयोग का मुद्दा है। 2023 की शुरुआत से, संघर्षों के लंबे इतिहास को ध्यान में रखते हुए, लद्दाख के लिए स्वायत्तता, संवैधानिक सुरक्षा और राज्य का दर्जा प्राप्त करने के लिए आंदोलन तेज हो गया है। इस आंदोलन ने केंद्र सरकार द्वारा प्रस्तावित ऊर्जा परियोजनाओं को चुनौती दी है। उम्मीद है कि स्वायत्तता लद्दाख के लोगों को अपनी भूमि और संसाधनों पर नियंत्रण स्थापित करने और अपने ऊर्जा भविष्य को संचालित करने के लिए सशक्त बनाएगी। इस आंदोलन का विश्लेषण करते हुए, हम तर्क देते हैं कि सामाजिक-पारस्थितिक रूप से न्यायसंगत ऊर्जा प्रथाओं की रक्षा और संवर्धन के लिए संवैधानिक सुरक्षा उपाय और स्वायत्तता अनिवार्य हैं। स्वायत्तता की मांग लद्दाख को आधुनिक ऊर्जा आवश्यकताओं के लिए एक परधिय बलदान क्षेत्र के रूप में देखने के शोषणकारी दृष्टिकोण को चुनौती देती है। इसके विपरीत, यह स्थानीय “प्लुरिवर्सल टेक्नोलॉजीज,” कम प्रभाव वाली जीवनशैली, और लोकतांत्रिक रूप से संचालित एवं

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प्रबंधित ऊर्जा प्रणालियों को बढ़ावा देने का मार्ग प्रशस्त कर सकती है। हालाँकि, इस प्रक्रिया में लद्दाख के लोगों को 'विकास' और समृद्धि के दृष्टिकोण पर आंतरिक विवादों से भी जूझना होगा।

Keywords

ऊर्जा, कार्बन तटस्थता, स्वायत्तता, भूमि, शासन, लोकतंत्र, लद्दाख

Understanding contentious energy transitions in Ladakh

In Ladakh, an ecologically complex trans-Himalayan region of India, two visions of energy transition are in conflict. The first embodies a place-based, time tested, indigenous-led, and socioecological understanding of transition. This conception of transition emphasises on low-impact passive energy development and lifestyles as a model for both regional and global climate action (Norberg-Hodge, 1991; Prakash, 1991; Wangchuk, 2024b). The second is a top-down and technocratic approach, championed by the Government of India. This vision aims to open up Ladakh to large-scale solar farms, geothermal and green hydrogen explorations, and critical mineral mining. The objective is to transmit so-called 'renewable' energy to high-consumption centres in India (Government of India, 2023).

To determine which of these contrasting and competing visions prevail lies the pivotal question of autonomy for Ladakh. This is being demanded through inclusion under the Indian Constitution's Sixth Schedule, and conversion into full statehood. The Sixth Schedule of the Indian Constitution (Articles 244(2) and 275(1)) provides for autonomy and self-governance to tribal areas in four states of Northeast India. It facilitates the creation of autonomous councils vested with legislative, judicial, executive, and financial powers (Government of India, 1949). Decisions regarding land use are vested to these councils. The Sixth Schedule was established to preserve the distinct culture of tribal areas in India. Its implementation in Ladakh is also argued from the point of view of climate change and the urgent need to preserve sensitive landscapes and cultures and to strengthen grassroots governance (Pandey, 2024). The Sixth Schedule would grant the local Indigenous¹ population, through their political representatives, formal control over their lands and resources. Additionally, there are demands to convert Ladakh from its current status of a Union Territory, under the control of the central government, to a full state. This is meant to provide Ladakh with democratic self-governance through an elected legislature.

Based on our understanding of a series of protests in 2023 and 2024, we argue that autonomy is a crucial precondition for safeguarding and further developing pluriversal futures. These protests are led by groups like the Leh Apex Body and Kargil Democratic Alliance, and individuals like climate activist Sonam Wangchuk. The concept of a pluriverse challenges the idea of a single modernist and universal reality, driven by ideas of development. Instead, it

proposes a world where many worldviews and practices exist, grounded in diverse ontologies, epistemologies and ways of being (Kothari et al., 2019b). In this paper we focus on pluriversal futures connected with the ideas of energy transition.

The call for autonomy challenges extractive notions of transition. Such notions perceive places like Ladakh singularly as peripheral and potential sacrifice zones for the modernist energy transition. What Ladakh is facing is representative of many 'peripheral' territories, especially those inhabited by Indigenous Peoples and other traditional communities, and/or by nonhumans. The term green colonialism is increasingly being used to describe projects that focus solely on the decarbonisation credentials of energy to acquire and transform land, while ignoring to address the socioecological impacts of these projects (Dunlap, 2020, 2021; Fairhead et al., 2012; Hamouchene and Sandwell, 2023). Furthermore, green colonialism ignores socioecological ideas and practices of transformation (Rudolph, 2023). In the case of Ladakh, the term internal colonialism is appropriate, where the government exercises control over the lives and lands of minority groups, without granting them full democratic rights (Dey, 2019; Kothari, 2022a). Under these circumstances, Indigenous and rural populations are especially vulnerable to green infrastructure colonialism and risk losing access to their traditional lands (Lamhamedi and De Vries, 2022). Ironically, it is these very Indigenous Peoples that are actively engaged in combatting climate change (Etchart, 2017). Indigenous Peoples are holders of pluriversal knowledge of how to harness energy without negatively impacting relationships to the land and its nonhuman inhabitants (Velasco-Herrejón et al., 2022). From a pluriversal perspective, the so-called peripheries, resisting green colonialism, then become central sites of differently seeing, organising and thinking about nature and climate (Bresnihan and Millner, 2023).

The protests in Ladakh are demanding autonomy and rejecting autocratic top-down developmental projects. Additionally, the protests have become a moment to foreground the existing and functional pluriversal technologies like passive solar construction and practices like low-impact living. These practices exist and flourish within local socioecological boundaries in Ladakh (Namgail, 2024). The act of resisting, in this case, is not merely to the act of stopping extraction and the imposition of modernist development by the Indian Government (Joshi, 2023). Rather, it points towards alternative relations and practices, that people have with the land and the sun that shines generously on it.

In writing this article, we acknowledge our positionalities as non-Indigenous, non-Ladakhi researchers and activists. We, however, do identify as people who have frequently visited Ladakh and collaborated with several local groups in research and action. This includes participation in the co-creation of pluriversal technologies like solar-earth buildings (Joshi, 2013); and carrying out in-depth research on aspects of traditional and new governance, tourism, and other current concerns (Bajpai et al., 2022; Kothari and Deachen, 2024). We have witnessed an immense wealth of pluriversal knowledge and innovation with regards to care for the local landscape while generating sustainable livelihoods and technologies (including those for energy) in Ladakh. It deeply concerns us to see the violent exclusion of pluriversal knowledge in the top-down imposition of a universal hegemonic idea of energy transition.

This piece has two objectives. First, to foreground some of the pluriversal renewable energy technologies that exist and flourish in Ladakh. We do this to broaden the imaginary of what a locally rooted and socioecological just energy transition might look like. Second, we argue that constitutional autonomy and radical form of democracy grounded in local communities, are indispensable for realising pluriversal visions of energy transition within a larger vision of socioecological well-being. Before we do that, a brief introduction to Ladakh would be necessary.

Locating Ladakh

The Ladakh region is located, at an average altitude of 3000 metres above sea level, in the trans-Himalayan part of India, between Tibet and Kashmir. It covers a total area of 59,146 sq.km. and is classified as a cold desert landscape, with winter temperatures falling to -20°C (Kale, 2014). Annually, Ladakh has an average of 300 days of clear sunshine, making it an ideal location for harvesting solar energy. Ladakh's socioecologically rich landscape (including fauna like Snow leopard, Blacknecked crane and Tibetan antelope) has flourished in challenging geographical conditions (Norberg-Hodge, 1991; Rizvi, 1983; Namgail et al., 2023). It is estimated that 97% of the 274,289 Ladakhi population is Indigenous¹, with a wide range of lifestyles and customs (National Commission for Scheduled Tribes, 2019). This socioecological diversity is central to the demand for protection under the Sixth Schedule of the Indian Constitution as well as full democratic rights to make developmental decisions (Namgail, 2024; Pandey, 2024) (Figure 1).

Politically, Ladakh was an independent kingdom for over a thousand years, before being subjugated by rulers from Kashmir. It was made part of the state of Jammu and Kashmir (J&K) when India became an independent country in 1947. Calls for autonomy for Ladakh, given its distinct socio-cultural structure, have existed since then. These



Figure 1. A view of the Zaskar river flowing through Ladakh's landscape (Source: N. Joshi).

include struggles, in which protesters have been killed by state forces, to obtain the status of Scheduled Tribes under India's Constitution, and to get a Union Territory status. As an interim measure, Ladakh was able to obtain relative autonomy through the Ladakh Autonomous Hill Development Council Act 1995 (Kothari et al., 2019a). In 2019, the state of Jammu and Kashmir became a Union Territory as part of the Government of India's abrogation of Article 370. At the same time, Ladakh became a Union Territory. This means Ladakh is directly controlled by the central government through an appointed Lieutenant Governor.

The conversion to a Union Territory status was initially celebrated by people in the district of Leh. However, it was soon clear that without having its own legislative assembly, this was only transferring power to New Delhi. Quickly, Ladakhis realised that constitutional safeguards would be needed to protect their socioecological diversity from external commercial and political interests (Kothari, 2024c). Furthermore, full democratic rights, exercised through elected representatives in the state assembly, are equally necessary to take decisions on land and resources.

In its election manifesto in 2019, the Bhartiya Janata Party, which currently forms the government in New Delhi, promised Ladakh the Sixth Schedule status. It is the non-fulfilment of this promise, and the absence of a legislative assembly that has triggered a series of protests in Ladakh in 2023 and 2024. Climate activist Sonam Wangchuk was instrumental in galvanising the recent agitations. He highlighted that an ecologically complex region like Ladakh needs constitutional safeguards. This is critical for Ladakh, being on the frontlines of the impacts of climate change from glacial melts. Constitutional safeguards are equally necessary for preserving place based indigenous ways of being, knowing and governing (Kothari, 2024c).

Plural ways to knowing and harvesting the sun

Ladakhis have a long tradition of living lives synchronised to harvest the power of the sun in non-extractive and non-exploitative ways. In this connection we find useful the term, pluriversal technologies, defined by Velasco-Herrejón et al. (2022) as *'technologies that embrace ontological and epistemological diversity by being co-designed, co-produced and co-owned by the inhabitants of the socio-cultural territory in which they are embedded'*. The concept expands the universal imaginary of renewable energy infrastructure dominated by large-scale solar farms and wind turbines set against inert landscapes. Additionally, the concept of energy sovereignty demands that for as fundamental a human need as energy, people and communities should have control over how it is generated, distributed and used (Del Bene et al., 2019).

The passive solar-earth buildings of Ladakh are an excellent case in point. Ladakh has a long tradition of building with earth, the locally available carbon-neutral building

material. An outstanding example of this is the nine-storey high Leh Palace in Leh, Ladakh, built in the 17th century (Sharma, 2003). With time, the earth buildings have been adapted to include passive solar technologies like southern glazing combined with a Trombe wall system to keep the buildings warm (Nasir and Arif Kamal, 2021). Passive solar heated houses drastically reduce the demand for burning carbon-based fuels for indoor heating during cold months. In winter, when the external temperatures fall to $-20\text{ }^{\circ}\text{C}$, passive solar-earth buildings can maintain an ambient temperature of $+15\text{ }^{\circ}\text{C}$, without additional mechanical means (Nasir and Arif Kamal, 2021). Passive solar earth houses are a synthesis of local knowledge of the climate as well as intelligent use of local resources of the sun and earth (Joshi, 2013). In addition to the basic structure of earth, passive solar houses adopt a gamut of intelligent ideas like parabolic reflectors for cooking as well as dry toilets to save water (Clouse, 2020). Many Ladakhi homes have greenhouses on the southern side which are used for growing food during winter, further reducing the energy footprint associated with food (Angmo et al., 2019) (Figure 2).

Other than passive solar-earth buildings, Ladakh has well-functioning decentralised active solar systems as well. The SECMOL (Students' Educational and Cultural Movement of Ladakh) school campus located in Phey, Ladakh is a synthesis of both. The residential school for 40 students and supporting staff members is completely off-grid. The energy used in the school for pumping water and electricity is produced on campus through solar panels (SECMOL, 2024). There is however a conscious restraint on the use of active solar energy, which is substituted by passive earth buildings as well as conscious lifestyles that are synchronised with the sunlit hours. The energy system at the SECMOL campus is democratically managed by the students of the school, further deepening energy sovereignty and independence (Figure 3).

Some future looking renewable energy systems include the innovations in developing agri-photovoltaic system by the Himalayan Institute of Alternatives that provide food security for the regional Pashmina goat while harnessing solar energy (HIAL, 2024). Appropriate technology developed by the Ladakh Ecological Development Group (LEDEG) utilises solar energy as a means of addressing basic community needs around food, water and shelter (LEDEG, 2024). Another example stems from the Pishu village in the Zaskar Valley, an area already stressed by water scarcity and further exacerbated by climate change. Here, the local community and the Navikarana Trust have collaborated to use solar energy to pump water from a nearby water reservoir (Shah, 2023; Wangtak and Ashbaugh, 2021). This has helped the community to access water for their everyday needs at a time when glacial water is increasingly becoming unpredictable.

These examples exhibit important lessons for designing future energy systems that are co-created with local knowledge, address societal needs and respond to the ecological



Figure 2. Changthang school, an example of a solar-earth building created locally in Ladakh (Source: N. Joshi).



Figure 3. Pop-up music system set up by students of SECMOL on a sunny spring day (Source: N. Joshi).

limits of the local geography. The ownership of these systems also lies with the community, while being open to knowledge exchange and improvement.

External imaginaries of a carbon neutral Ladakh

In 2020, the Indian Prime Minister Narendra Modi announced a vision for developing Ladakh as a carbon neutral region. However, there was limited to no acknowledgement that Ladakh is already carbon negative, given its large landmass, sparse population and low-impact lifestyles (Kothari, 2024c). Furthermore, there was no engagement with the existing wealth of Ladakh's pluriversal knowledge and practices of low-carbon living. Instead, most of the ideas were towards implementing new (supposedly) carbon neutral technologies like electric buses to ameliorate the anticipated increase in emission arising from opening up Ladakh to future development (TERI, 2021).

The national level budget of 2023 earmarked a sum of Rs 8300 crore (approximately 994.17 million USD) towards a 13-GW solar and wind energy project in Ladakh. This project would 'evacuate' energy out of Ladakh through a 900-km-long intra-state transmission system (Goswami, 2023). While this project has been lauded nationally for showing India's commitment towards an energy transition, environment and livelihood rights activists in and outside Ladakh have raised concerns about the siting of the solar farm in the Changthang area of Ladakh. This would enclose pasture lands, disturb wildlife habitats, and stress local water resources. Furthermore, the absence of consultation with the impacted population as well as the elected representatives has been the cause of protest and mobilisation against the project (Ganguly, 2024; Paljor, 2024). The planning and implementation of large-scale solar parks, like the one in Pang, are a stark contrast to the tradition of how solar power has been understood, developed and shared in Ladakh. The absence of constitutional autonomy, environmental safeguards and statehood, make it difficult to oppose the influx of such projects in Ladakh.

Sonam Wangchuk, during his climate fast for autonomy in Ladakh in February 2024, criticised the autocratic imposition of the so-called 'renewable energy' projects. He pointed to the general willingness of the people of Ladakh to collaborate as equal partners creating energy solutions that do not harm local socioecological interests. Problems arise when the government plans and policies disregard the knowledge and ownership of Ladakhis, and announce and execute projects without prior consultation, do not share the benefits and take no accountability for the socioecological impacts (Wangchuk, 2024a). It is against these colonial tendencies of land and resource capture, and lack of democratic processes, that the people of Ladakh are protesting and demanding full democratic rights and autonomy.

Autonomy for safeguarding and developing pluriversal energy futures

The protests demanding autonomy in Ladakh nudge us to see that resistance movements do not always create new alternatives. Many a times, they are defending well-working, pre-existing, and evolving systems. However, these socioecological practices or ways of life often clash against mainstream ideas of technological development, progress and energy transition (Rudolph, 2023). The act of resistance is then towards defending autonomy that allowed for such alternatives to flourish in the first place.

The Indian government and multiple energy companies may just be 'discovering' Ladakh as a resource to power their energy future. However, the people of Ladakh have a long-standing and non-extractive relationship with solar energy. Their methods, technologies and practices may not look similar to modernist universalist notions of energy transition. Rather, they are a stark reminder of what place-based pluriversal alternatives can look like. In their insistence for autonomy, Ladakhis demand a democracy that is different from today's dominant liberal or electoral form. Instead of concentrating power in national and state capitals where elected parties rule, Ladakh prefers decentralisation, mindful of ecological and cultural conditions, in what could be called *eco-swaraj* or radical ecological democracy (Kothari, 2022b). As Ladakh mobilises to protect its unique ecology and culture, the rest of India and the world need to understand and stand in solidarity with it.

In writing this piece, we are conscious that, in some sections of Ladakh, there is a changing mindset towards conventional forms of development, as seen in the frenetic construction boom in Leh town. Autonomy and constitutional safeguards are a necessary, but not sufficient condition, to generate pathways that achieve well-being without sacrificing Ladakh's unique environment and people (Umdor and Vanlalhruiatluanga, 2024). In the recent past in India, several new states have been created through struggles characterised by arguments of cultural and ecological distinctiveness (e.g. Adivasi identity and forest-based livelihoods in Jharkhand and Chhattisgarh, mountain-based uniqueness in Uttarakhand). Amongst the factors that have not allowed them to adopt development or well-being pathways to maintain such uniqueness, is the absence of clear alternative visions by those in power, and continued inability to empower grassroots communities. Ladakhi leaders like Chhering Dorjey Lakruk, and youth like Akhtar Ali, are placing socioecological struggles at the centre of the movement for autonomy (Kothari, 2024a, 2024b). National networks like Vikalp Sangam have also argued that, in addition to the Sixth Schedule, Ladakh should be brought under the Fifth Schedule² of the Constitution of India, which empowers village assemblies in areas inhabited by Scheduled Tribes (Vikalp Sangam General Assembly, 2024). An insistence on decentralised governance, facilitated

through the Fifth and Sixth Schedules and building capacities for local decision-making, is a safeguard against capture of power and resources by elites at the state and national level. This is crucial to lay the foundations of a socioecologically just future in Ladakh.


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Notes

1. We note here that the term ‘indigenous’ is not recognized by the Government of India; the more officially accepted terms are ‘Scheduled Tribes’ and ‘Adivasis’ (original peoples). However, such peoples do often refer to themselves as ‘indigenous’, and we use the term respecting such self-recognition.
2. The Fifth Schedule provides for declaration of ‘Scheduled Areas’, under which subsidiary legislations such as the Panchayat (Extension to Scheduled Areas) Act 1996, empower village assemblies to take decisions pertaining to their territories and interests.

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