

6: Capacities for Change: Understanding Citizens and Local Contexts

Pathways towards affordable electricity access: Solutions and challenges for village-level solar power supply in different socio-cultural and political contexts

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Abstract

This paper combines three case studies in Senegal, Kenya and India on village-level solar PV based electricity systems, including two cases of mini-grids and one case of energy center services including charging of portable lanterns. The three cases demonstrate the importance of understanding socio-technical change in view of the societal context where it takes place, and the paper discusses how the involved actors might consider this context. The analysis shows the struggles of project implementers both from the private and public sectors, and identifies a range of factors that influence the social and economic sustainability of the electricity provision they create. The paper also highlights the households' perspective and the difficulties for some social groups to get access to affordable electricity. Social scientists and technical experts have carried out this research in close cooperation, shedding light on the dynamics between technical aspects and socio-cultural contexts including social practices. The analysis further demonstrates the dynamics between the local processes and the wider contexts of socio-technical systems in transition ("regimes" and "niche" systems). The paper discusses how various system elements at different geographical levels influence the shaping of the local electricity systems, and argues that access to electricity for all is not possible without much larger context sensitivity than what is common today, and a much stronger focus on affordability by both project implementers, policy makers and regulators. This research strongly supports suggestions from the literature on transitions to sustainability that up-scaling of decentralized electricity supply should be acknowledged as broad, social processes of learning and building up of novel socio-technical systems. This includes inevitable setbacks and struggles to overcome political, practical and economic barriers.

How do laypeople categorize energy transition pathways?

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Abstract

Climate change mitigation has become an important issue for policymakers, particularly the transition towards a low-carbon society. One prerequisite for this transition is to change how energy is generated and consumed per today. This change requires action from various societal actors including (but not limited to) individual members of the public. Therefore, understanding how the public views different pathways to energy transition can provide possible insights for policies directed at mitigating climate change.

This research is part of an ongoing project that explores mental models about energy transition pathways, with an emphasis on their categorization and their anticipated impacts. A convenience sample of $N = 61$ students was given the task to sort paper cards into separate piles based on what they considered belonging together. Responses were coded according to the groupings of the cards; each paper card represented one specific energy transition pathway that was derived from pilot interviews and desk research.

The objective was to explore how laypeople categorize different energy transition pathways in terms of their similarity, and if possible, to identify patterns underlying these categorizations. Three separate clusters emerged from the statistical analysis: pathways located at the individual level (e.g., vegetarian food, avoid long flights, walking and cycling), pathways located at the societal level (e.g., taxes, regulations, urban planning), and pathways concerned with technological solutions (e.g., nuclear power, wind farms, solar panels). Possible implications for policy communications that employ information on these pathways will be derived from these findings.

Moving beyond oil – A capabilities perspective on oil and gas supply firms’ diversification challenges in Norway

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Abstract

Internationally, the oil and gas (O&G) sector is currently exposed to, at least, two forms of transformation pressures that motivate supplier firms to enter other markets as a survival strategy i.e. to diversify. First, the sector has in recent years suffered under relatively low oil prices – this is particularly true for high-cost producing regions as the North. These developments put firms under pressure to reduce cost by e.g. applying new materials, designs, or organizational principles but also to seek entry on other markets to diversify sources of revenue. Another—and more abstract—type of transformation pressure arises from the increasing focus on climate change mitigation. Although this has had little impact on the supply side (i.e. in form of mandatory production cuts), changes in demand signal a steady decline for oil markets over the coming decades. Even though the latter does not constitute an imminent economic risk for O&G supply firms, it strongly indicates that they operate in a “sunset industry” from which they should seek to diversify.

Due to these transformation pressures, there has in Norway been public attention around whether and how the economy can move beyond oil. This paper explores one concrete way, among many others, of moving beyond oil. We seek to understand the drivers and barriers O&G supplier firms face when trying to enter new markets—something which could soften impacts of the recent downturn (e.g. in terms of employment) as well as plant the seeds for a future post-oil economy. The underlying question driving this paper is thus whether and how the vast resources (e.g. human capital, physical capital, infrastructure, and financial capital) embedded in O&G activities can be redeployed in other promising industrial activities. Theoretically we see diversification as a process very similar to innovation, i.e. it is systemic, path-dependent and influenced by technological, social and political developments inside and outside firms (Helfat & Lieberman, 2002). We base our analysis on interviews with 14 O&G supply firms; some of them with successful diversification processes, others with attempts with unclear results.

Our analysis hold lessons, first, for policy makers in oil economies about how oil industry transformation can be supported and, second, for company managers about the main challenges involved in moving beyond oil. Lastly, it also holds important lessons for scholars interested in sustainability transitions (Markard, Raven, & Truffer, 2012) as our paper partly illustrates what “regime destabilization” (Turnheim & Geels, 2012) looks like on the ground (i.e. when jobs disappear) and gives suggestions for managing such processes.

Norwegian petroleum workers on climate change and energy transitions

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Abstract

Global discourses become continuously more concerned with the fact that humans are altering the climate on Earth and that a transition towards a low-carbon society is necessary. The petroleum industry is, however, still strongly rooted within the Norwegian society. Especially in Stavanger, frequently called ‘the Oil Capital’, this industry holds a strong position. This paper asks how petroleum workers living in Stavanger perceive the coming energy transition. How do they estimate the impacts of what is basically a shift away from the region’s main identity builder, as well as the industry they are, themselves, employed in?

In many recognized theories on human-place bonding, place identity is seen as dynamic and flexible. This could also go for the identity of Stavanger as the oil capital. Now, the stated aim of the Norwegian government, as well as Stavanger municipality, is that Stavanger will move beyond being the oil capital and become something more: The Energy Capital. In the future imaginaries presented by the petroleum workers, however, Stavanger still very much holds the identity of the oil capital. These workers do not see real alternatives to expand this image, nor to exchange it with something new. Thus, one can see the place identity of Stavanger as being more rigorously intertwined with the petroleum industry than previous theories suggests. This paper outlines the petroleum workers’ rationalisations as to why the petroleum industry needs to continue, and thus to why Stavanger would, for all foreseeable future, continue to be the oil capital: 1) Petroleum is tantamount with money and welfare, 2) Norwegian petroleum is superior to other forms of energy, 3) the climatic crisis is not the responsibility of the petroleum industry per se, 4) the petroleum industry is a highly environmentally concerned industry, and 5) the environmental movement is naïve and unrealistic.