

What can entrepreneurs and their business models contribute to accelerating the energy transition?

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1. Introduction

With all the attention the energy transition attracts nowadays, one could easily imagine that doing business in this market is an easy ticket to success. Sadly, this is not the case. In reality, only a relatively small group of entrepreneurs is able to take advantage of this sense of urgency or even challenge the current institutional unsustainable arrangements. We found that those energy service entrepreneurs that manage to build strong business models are successful in making their innovation legitimate and accepted demonstrate very specific behaviour. This behaviour can be defined as the capacity to act for change [1,2], demonstrating the ability to align resources, discourses and social position.

2. Background, History, Review-of Literature, or Methodology

Previous research on the apparent lack of market uptake of energy efficiency found that entrepreneurs that adopt a service-oriented business model and have the skills needed to deliver a service (sensing, conceptualizing, orchestrating and scaling) are usually more successful at creating mass uptake (growing a market share) than those that have a traditional product push approach [2,3,4]. Given the important role entrepreneurship can play in the energy transition, we set out to better understand how the uptake of more radical (i.e. challenging the existing system) business models and services (such as community virtual power plants or microgrids, or retrofitting as a service, heating as a service, demand response as a service) can benefit from such a servitisation aimed behaviour of the organisation. We explored this question with a research team from four countries: the Netherlands

(coordinator), Australia, Ireland and Sweden. The research was based on a dynamic, qualitative research methodology involving desk research, a literature review, more than 75 interviews and more than 60 case studies.ⁱ

3. Results and Findings

Our research found that only a few of the more radical type of energy services and business models are successful at becoming accepted and embedded, and that this usually involves successful attempts of the entrepreneurs at creating changes to technological, infrastructural, regulatory, institutional or cultural arrangements to help embed the service. Most radical services however are not successful. Instead, these business models and services need to adjust to survive, tone their level of innovation down, become more business as usual, and as such the potential transformative contribution they could make to the energy transition is not materialised [5,6].

Those entrepreneurs that are successful at delivering innovative services demonstrate a very specific set of skills, or practices. What characterises these entrepreneurs, or entrepreneurial teams (some of these are consortia or energy communities) is first of all that they have a set of skills that allow them to deal with the specific characteristics of a system in transition, such as the energy sector: complexity, uncertainty, technocracy, organised irresponsibility, and contestation. These skills consist of the skill to mobilise diverse actors and promoting collective action, the skill of creating strong formal and informal social positions in relevant networks, cultivating strong relationships with key stakeholders, securing important resources, and the skill of framing discourses within those networks and on a more societal level.

The second clear characteristic of these entrepreneurs is that they are very capable of turning systemic challenges into opportunities. They use the system barriers as the *raison d'être* and legitimation for their business model. Some of these entrepreneurs even go a step further. They develop their service and business model with the explicit aim to contribute to changing policy, regulations, or providing answers to societal problems, contributing to societal discourses. This type of entrepreneurship is called institutional entrepreneurship and the skills discussed above together create institutional power or agency [7,8,9,10,11].

One example of such an institutional entrepreneur is the Australian case of the Microgrid Electricity Market Operator MEMO. MEMO was set up by Monash University in collaboration with several market actors. Monash explicitly set MEMO up to contributive actively and strategically to the reconfiguration of the electricity system in Australia and were successful in achieving this, with new regulations stemming from this experiment. They demonstrated strong systemic thinking and strategic capabilities, analysing the market in-depth, positioning themselves in a new role in a changing market, taking the lead, being very

ⁱ As part of the annex 'Energy business models and systems' under the Technology Collaboration Programme 'User centered Energy Systems' by the International Energy Agency

agile and adaptive, they used strong lobbying capabilities, mobilising networks, informing policy and regulatory and market design reforms at state level by framing discourses from a strong formal social position.

Discussions and Conclusions

These type of institutional entrepreneurs are very important in accelerating the energy transition. One way of approaching this is to increase the number of institutional entrepreneurs. Training and developing capabilities and adjusting business models towards more service and transition orientation will certainly help. But, apart from the fact that the institutional skills are only transferrable to others to a certain extent, despite their success, and that much more research is needed to understand this specific agency, these entrepreneurs are operating in a system that falls short in supporting them and their transformative or transition-supporting service. At the moment this system is not yet ‘fit to serve’ these more radical energy services and much more research is needed on what such a supporting system could look like.

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