

Title:

Providing energy management services for prosumer communities

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Abstract:

Recent years have shown the emergence of numerous Dutch local energy initiatives (*prosumer communities*). Many of them aim at establishing a local and sustainable energy provision on a not-for-profit basis, while stimulating local economic activities. In this study we conducted explorative case studies on a number of Dutch prosumer communities, in order to analyse their development process, examine the barriers they encounter while organising their initiative, and how ICT could be applied to counteract these barriers and support communities in reaching their goals. The study showed that prosumer communities develop along a stepwise, evolutionary growth path, while they are struggling with organising their initiative, because the right expertise is lacking on various issues (e.g. energy technology, financial and legal constructs). Participants stated that there is a strong need for information and expertise, depending on the development phase of their initiative, and with the foreseeable growing complexity (e.g. local balancing, flexible tariffs) they indicated that they wanted to be unburdened with the right tools and services at the right moment. Based on these findings we developed a generic solution through the concept of *an energy management shopping mall*. The concept provides an integrated and scalable ICT environment, offering a wealth of smart energy management services that supports prosumer communities in every phase of their evolutionary growth path. As such it operates as a clearing house between prosumer communities and service providers, where the service offerings grow with the needs and demands of the communities, all along their evolutionary growth path. The energy management shopping mall can operate for multiple prosumer communities, thus providing economies of scales, where each prosumer community is presented its own virtual mall, with specific content and a personalised look-and-feel.