

# A Social Practice Perspective on Smart Grids

Summary of workshop at ICT4S 2014

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**Abstract**—This is a summary of the workshop that was held as part of the ICT4S conference with a focus on the topic of social practices and smart grids. Here we present an overview of the five invited paper contributions to the workshop, as well as a summary of the plenary discussion, and our final conclusions.

**Keywords**—sustainability; ICT; social practice theory; smart grid; design

## I. INTRODUCTION

Today citizens are being ascribed increasingly (re)active roles in sustainable development, as captured in concepts such as ‘prosumers’. As prosumers, citizens are often still subordinated to larger and top-down socio-technical agendas, such as local energy production and ‘load management’ in smart grid districts. Further, the effects of such agendas are often unrealized, partly due to an underestimation of the power and complexity of social practices and partly because ‘lock-ins’ and ‘rebound effects’ in consumption habits continue to counter efficiency gains.

A social practice perspective may open up new opportunities for understanding and potentially change everyday practices in a sustainable direction. The perspective entails that human actions are viewed as part of an ecological system rather than isolated phenomena. They are considered as part of a whole. This may facilitate for a reformulation of the commonly posed question “How may we change people’s behaviour?” to more fruitful formulations in terms of relationships and dependencies between for instance everyday practices and electricity companies.

The workshop had three major goals: To identify research directions and researchers within the field of social practices and smart grids; to build a community around the research field and to plan for subsequent workshops. During the three-hour workshop an introduction to the topic and goal of the workshop was presented by us, followed by presentations of the five position papers. Then, we facilitated a general discussion, and finally future plans were decided upon. In total 11 researchers from Sweden, Denmark, Belgium, Netherlands and the UK participated in the workshop (Figure 1).

## II. PAPER SUMMARIES

Two of the papers focus on actor perspectives on the smart grid. Bartusch and Perna’s paper “Key actor perspectives on



Figure 1. Workshop participants at the introduction on social practices and smart grids

smart grids: A qualitative study on barriers and incentives for the development of smart grids in the Swedish power market” poses the research question as to how different actors perceive the smart grid. The authors present an exploratory study aiming to assess the motivations and incentives of key actors in order to identify potential barriers and opportunities - financial, technological, political and psychological - when smart grids are implemented. Theories of technological development and industrial networks are applied to analyze the results. A preliminary analysis concludes that the *financial dimension* constitutes the greatest barrier, mainly because of the electricity price level and monetary flows from financial investments.

Another focus on actors is presented in the paper “Social practice theory on tour: Venturing beyond household aspects of smart grids”. Here, Langendahl, Cook and Potter argue that

reducing smart grid ecologies to everyday household practices may limit the potential of practice theory to understand development of smart grids. In their paper they, thus, explore the potential of practice theory to account for practices performed by actors associated with smart grids beyond households.

Kortuem, Bourgois, Van der Linden and Price's paper "Participatory Data Analysis: A New Method for Investigating Human Energy Practices" describes a method for enabling people to reflect on their own behavior. In the method also lies an ambition to gain insight into factors that influence people's behavior. The paper shows examples of how the method could be applied. In his paper "The role of learning and social interaction for changing practices?", Christensen attempts to combine social practice theory with Kolb's theory of experiential learning. The aim is to inspire to further thinking about how to make practice theory more "applicable" for designing changes towards a low-carbon energy system.

Finally, "Multidisciplinary smart Grid research and the design of users" by Gaye and Wallenborn, has a user- and design-oriented perspective on the smart grid. The paper argues that users can be "designed" as interested in and open to devices that concern them. They criticize the notion of users as passive consumers and through the use of the social practice framework they describe how energy may be redefined in a way, which also gives a new configuration of the grid.

### III. DISCUSSION

The discussion started off with the observation triggered by the papers on actor perspectives that there are many different actors involved and consequently various actor perspectives on smart grid developments that do not necessarily coincide. This contributes to the complexity of the development of smart grids and also indicates the need for a multidisciplinary approach. Questions arose as to how the various actor perspectives can be nurtured in a good way, and which can be beneficial for society.

One viewpoint arising from the papers on learning processes could be to take such processes as a guideline for working with smart grids rather than implementing technocratic developments in society. However, this learning process takes place on all levels and is not systemized or synchronized. This calls for theories such as Actor Network Theory (ANT) and Science and Technology Studies (STS), but the performative character of learning processes may be more appropriately addressed through Social Practice Theory. Social Practice Theory could help in analysing and understanding how such learning processes take place for different actors by studying the actual performance of such learning activities in relation to smart grids, in order to understand various actor perspectives better.

Then the discussion arose how to work with Social Practice Theory as a way of looking at existing situations and understanding the complexity of changing those situations, but not to change or transform consumers in a way that is more desirable or compatible with Smart grid functionalities. Here, a challenge was seen to work with this theory in a way that does justice to its ideas. This forms a new breeding ground for future work, our network, and new conference discussions to be shaped and nourished.

### IV. CONCLUSIONS

The workshop created a forum for knowledge sharing, lively discussion, and plans for further research exchange. An embryo for a European community around the research field of a social practice perspective of smart grids was formed. The paper presentations and discussion presented a variety of different viewpoints and methods that cast a different, albeit diffused, light on smart grids and actor perspectives. The wish for continuous research exchange was demonstrated by the joint request of the members of the group to continue the discussion forum through growing the network and extending the workshop to a new session in ICT4S 2015.

### V. ACKNOWLEDGEMENT

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### VI. WORKSHOP PAPERS

- [1] C. Bartusch, and A. Perna, "Key actor perspectives on smart grids: A qualitative study on barriers and incentives for the development of smart grids in the Swedish power market".
- [2] T.H. Christensen, "The role of learning and social interaction for changing practices?"
- [3] G. Gaye, and G. Wallenborn, "Multidisciplinary smart Grid research and the design of users"
- [4] G. Kortuem, J. Bourgois, J. van der Linden and B. Price, "Participatory Data Analysis: A New Method for Investigating Human Energy Practices"
- [5] P.A. Langendahl, M. Cook and S. Potter, "Social practice theory on tour: Venturing beyond household aspects of smart grids".