

Whose 'flexibility'? – Analysis of Austrian end-users' perspectives on demand-side flexibility and potential conflicts of use with their own interests

Andrea WERNER⁽¹⁾, Kurt LEONHARTSBERGER⁽¹⁾, Susanne SCHIDLER⁽¹⁾, Daniel BELL⁽¹⁾,

(1) FH Technikum Wien, Department Industrial Engineering, Competence Centre Renewable Energy Systems

The decentralization of the renewable energy system increases the challenge of balancing the intermittent supply and demand. Expanding automated demand-side-management measures to private household technologies (e.g. heat pumps, e-vehicles, battery storage or e-boiler) is one solution to raise the “flexibility potential“, thereby increasing the grids' balancing capacities. However, it requires households to allow external control over said devices limiting their own “flexibility“. Users initial buying motivations and expected benefit of the devices may conflict with grid-relevant strategies. Additionally, other aspects that determine technology acceptance following an adaptation of the comprehensive acceptance framework [1] may be relevant, e.g. need for technology control, perceived risks, data security, trust in the provider, environmental consciousness or technical affinity. So far, empirical insights on households' perspectives on grid-relevant usage of their devices are limited. Within FLEX+[2], end-users' perspectives, motivators, expectations, compensation and non-monetary incentives for grid-relevant services are assessed with focus groups and validated by an online survey among Austrian households. This contribution shows empirical insights on end-users' perspectives and discusses implications on user-oriented business models for demand-side-flexibility.

[1] Huijts et al. 2012. Psychological factors influencing sustainable energy technology acceptance: A review-based comprehensive framework. *Renewable and Sustainable Energy Reviews* 16 (2012) 525– 531.

[2] <https://www.flexplus.at/>

¹ Giefinggasse 6, 1210 Wien, +43 1 333 40 77 - 585, andrea.werner@technikum-wien.at, <https://www.technikum-wien.at/forschung/forschungsschwerpunkte/renewable-urban-energy-systems/>.