ONLINE APPENDIX TO THE RESEARCH ARTICLE "NAVIGATING DISRUPTIONS IN ELECTRICITY RETAIL: THE ROLE OF IS FOR DYNAMIC TARIFF ADOPTION"

Online Appendix to a Completed Research Paper

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Introductory Note and Disclaimer

We created this online appendix as an addendum to the full research paper "Navigating Disruptions in Electricity Retail: The Role of IS for Dynamic Tariff Adoption" at the 33rd European Conference on Information Systems 2025 in Amman, Jordan. The information presented in this document is attributed to the full research paper and does not stand alone but complements it.

Appendix A: Participants

Table 1 presents background information on the expert domain of the participants of the group discussions.

Stakeholder group	Identifier	Expert domain
Business practitioner	BE1	Strategy and innovation in electricity retail
	BE2	Innovation and product management in electricity retail
	BE3	Innovation and digitalisation in electricity retail
Policymaker	PE1	Energy policy
	PE1	Energy policy
Researcher	RE1	Smart energy systems and technology; involved in industry partnerships
	RE2	Energy economics; involved in industry partnerships
	RE3	Smart energy systems and technology; involved in industry partnerships
	RE4	Behavioural science; involved in industry partnerships
	RE5	Energy/behavioural economics; involved in industry partnerships
	RE6	Energy Economics; involved in Industry Partnerships

Table 1: Participant information

Appendix B: Moderation Guide/Questionnaire

The moderation guide/questionnaire is presented in Table 2. It includes an introduction to the specific topic (if necessary), the main questions, optional follow-up questions, and the motivating rationales based on the sociotechnical system (STS) framework.

Introduction to discussion format:

"Hello, thank you for agreeing to answer some questions today about dynamic electricity tariffs and their implementation from an energy company perspective. I would like to remind you that everything we talk about will be anonymised and that your identity will not be disclosed to third parties. Only the summarized responses of the group discussions will appear in our research articles. Please answer our questions honestly and completely and let me know if there is anything you would like clarified. Please remember that you can refuse to answer questions and stop the discussion at any time. Let's get started..."

Main Question	Follow-Up Question	STS Rationale of Authors
Section 1: "The new regulation" The European Union forces energy suppliers with their "Clean Energy for all Europeans" package to offer dynamic electricity tariffs - tariffs that reflect spot market prices (day-ahead and intraday; Electricity Market Directive 2019/944, Article 2 (15)). They are supposed to encourage consumers to demand electricity during - renewable or low demand - low price periods, thereby reducing strain on the grid and promoting more efficient and green energy use.		
In general, what do you think of this policy and the underlying motivation of the policy makers?	Which opportunities and risks do you see for consumers compared to a fixed price tariff?	The main question was chosen to analyse whether the stakeholders within the sociotechnical system understand the underlying motivation of the changes to the traditional sociotechnical electricity retail system. The follow-up question was chosen to gain insights on the expected effects on residential consumers who are historically contracted in fixed pricing structures. It focuses on changes in the interaction between the consumers (human) and social structures and their consumption behaviour (tasks).
Do you think consumers are sufficiently or excessively aware of risks and downsides?		This is an extension to the first main and follow-up question. It aims on exploring whether the consumers understand the associated changes within the STS.
How do you think customers will perceive and ultimately deal with dynamic tariffs?		This question focuses on resilience. It points to the consumer's capability (human) to contribute to the system's resilience and functionality.
Section 2: "Implications for the consumers" Studies and real-world experiences imply, especially in Scandinavian countries, the effectiveness of dynamic pricing on household electricity consumption – with little savings but great consumption shifting effects.		
Would you expect similar results for other countries in Europe?	Do you agree that dynamic tariffs will mainly result in consumption shifts to low-peak times rather than conservation?	The sociotechnical electricity retail system is not unique. Other countries have already introduced dynamic tariffs and changed previous structures within electricity retail. Can we learn something from foreign electricity retail systems, and can we expect similar developments in all countries? Can we expect similar adaptability to disruptive regulations?

Section 3: "Analogies to other markets" In a sense, the official definition of dynamic tariffs require households to actively participate in real-time in electricity markets – with anticipatable changing conditions every 15 minutes.		
Do you know of other real-time markets that require households to actively participate?	What can we learn from those/this market(s)?	The main and follow-up questions aim at identifying other STSs that show similar developments, and which offer knowledge transfer for resilience.
	Can you think of specific strategies that energy companies or policymakers could copy from these experiences?	Focusing on the component of social structures and organisations within the STS. What is their role based on existing knowledge and best practices to support the system's functionality?
Section 4: "Consequences for energy businesses"		
How exactly do you expect dynamic tariffs to shape and change the business model of energy suppliers?	Do you expect a co-existence of dynamic and fixed price tariffs and how could this look like?	The main and follow-up question aim at shedding light on the immediate effects of dynamic tariffs on the tasks and social structures of energy retail businesses within the STS.
Section 5: "Consumer enablement"		
What technologies could support residential adoption of dynamic electricity tariffs?	What specific role do you think information systems could play?	The main and follow-up question target formulating the role of physical systems within the sociotechnical electricity retail system, and how the introduction of dynamic tariff might change their role and ultimately the relationship with other system components.
Literature suggests that providing the right information at the right time and in the right format can contribute to the empowerment of consumers to exploit the advantages offered by dynamic tariffs. What do you think about that?	Research also suggests not just informing households about dynamic prices but complementing this with additional feedback and information about environmental and social impacts of their consumption behaviour. How important do you think this is?	This main and follow-up questions are extensions to the previous ones. They connect existing knowledge from Information Systems and Energy Research literature to the real-world, aiming at discussing its relevance for the STS and ultimately for its resilience.
Section 6: "The long-term perspective"		
What do you think will be the role of the automation of the home in the future?	What does it mean for the transition towards dynamic tariffs?	Especially the role of automation is discussed in literature. What is the opinion of the experts on the role of automation, not just as a component of a hardware-software infrastructure, but as a means of supporting the STS's functionality and alignment of technical and social components?
Dynamic tariffs are not the only change in residential electricity consumption – like the electrification of the heating and mobility system and prosumage.		This question aims at getting a glimpse into the future. The experts can express their opinion on the co-evolution of dynamic tariffs together with further disruptive technologies that change how

What consequences do these trends hold in regard to all the endeavors of implementing dynamic tariffs in the long run?		the electricity retail system of tomorrow will look like.

Table 2. Questionnaire and STS relevance

Closing to discussion format:

"Thank you for sharing your valuable insights during today's discussion. Your perspective is incredibly important to us and will significantly contribute to our understanding and future initiatives. Is there anything else you want to discuss or mention before we conclude? As for the next steps, we will be compiling the key takeaways from our discussion and will share details about the results soon. Additionally, we may schedule follow-up discussions to dive deeper into some of the topics we touched on today.
Thank you once again for your time and contributions.
We look forward to our continued collaboration."