Decoding design characteristics of local flexibility markets for congestion management with a multi-layered taxonomy

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Abstract-

**Local flexibility markets are becoming increasingly popular smart grid solutions. They connect customers who require flexible electricity supply and demand with local flexibility providers. However, the growing number of diverse solutions has led to a proliferation of concepts, projects, and companies in this market, with this diversity making understanding and comparison difficult. To tackle this challenge, we propose a multi-layered taxonomy of local flexibility market solutions. This focuses on Smart Grid Architecture Model to describe these markets comprehensively. We employ an iterative taxonomy-building method, refining and evaluating it through insights from ongoing implementations and twenty-eight expert interviews. Moreover, we present a complete **

Index Terms- Local flexibility markets; Smart grid architecture model; Congestion management service; Electricity flexibility serviceTaxonomy; Classification

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