

# Master's thesis

In cooperation with  
Energienetze Steiermark GmbH



## Styria Smart Meter – Extended White Hacking

### Current Status and Motivation:

Smart Metering has gained significant attention in recent years due to its potential to enable more efficient energy management and promote sustainability. However, one of the challenges associated with Smart Metering is the presence of electromagnetic interference (EMI) signals that can among others disrupt accurate energy consumption measurement and data transmission. Since the Smart Meter Roll Out in Styria is already up and running, the aim of this thesis is to detect and recreate interference signals, which can specifically detract the meter functions.

### Research Topic(s):

- Identification and characterization of different electromagnetic interference (EMI) sources related to smart meter functions (hard- and software)
- Observance of smart meters of two different manufacturers
- Reconstruction and verification of a targeted malfunction on the smart meter in laboratory environment

### Approach / Methodology:

- Constant exchange with company partners and experts incl. temporary workplace
- Literature and data research – regarding already conducted studies
- Electrotechnical test setup in the laboratory (company and IFE)
- Recreation and documentation of interference signals and their effects
- Preparation for a potential further project phase

### Organisational Matters:

- Start of work: October 2023
- Workplace: IFE/TU Graz and Energienetze Steiermark GmbH/Technikzentrum
- Language: German (preferred) or English

### Contact person / Supervisor:

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