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## Book of Abstracts

## HOW TO IMPROVE ENERGY BILLING INFORMATION TO INDUCE ENERGY SAVINGS? INSIGHTS FROM SWITZERLAND

**Uros Tomic<sup>1\*</sup>, Vicente Carabias-Hütter<sup>1</sup>, Tobias Kuehn<sup>1</sup>, Francesca Cellina<sup>2</sup>, Roberta Castri<sup>2</sup>, Nikolett Kovacs<sup>2</sup>, Stéphane Citherlet<sup>3</sup>, Sara Eicher<sup>3</sup>, Pierryves Padey<sup>3</sup>, Bastian Burger<sup>4</sup> and Jürg Bichsel<sup>4</sup>**

1: Institute of Sustainable Development (INE), School of Engineering (SoE), Zurich University of Applied Sciences (ZHAW), Technoparkstrasse 2, 8400 Winterthur, e-mail: {uros.tomic, vicente.carabias, tobias.kuehn, evelyn.lobsiger-kaegi}@zhaw.ch, web: <https://www.zhaw.ch/ine>

2: Institute for Sustainability Applied to the Built Environment (ISAAC), University of Applied Sciences and Arts of Southern Switzerland (SUPSI), 6952 Canobbio, Switzerland, {francesca.cellina, roberta.castri, nikolett.kovacs}@supsi.ch, <http://www.supsi.ch/isaac>

3: Institute for Thermal Engineering, University of Applied Sciences of Western Switzerland (HES-SO), 1401 Yverdon, e-mail: {sara.eicher, pierryves.padey, stephane.citherlet}@heig-vd.ch, web: <https://heig-vd.ch/en/research/igt>

4: Institute for Energy in Building (IEBau), University of Applied Science and Arts Northwestern Switzerland (FHNW), St. Jakob-Str. 84, 4132 Muttenz, {bastian.burger, juerg.bichsel}@fhnw.ch, web: <https://www.fhnw.ch/de/die-fhnw/hochschulen/architektur-bau-geomatik/institute/iebau>

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### 1. INTRODUCTION

Many industrialised countries including Switzerland have set ambitious energy reduction goals in response to challenges imposed by climate change. Thereby, private households play an important role, since they are cross-nationally responsible for around 30% of the total energy consumption [1]. Energy feedback has been found to be an effective instrument for motivating households to reduce their energy consumption by up to 20% [2]–[6]. An important branch of this research deals with energy bills as a most widespread feedback medium [7]–[13]. However, since the scope for motivating households to change their energy consumption through informative billing is dependent on national legislation and technology level, it is important to conduct country-specific analyses in order to develop tailored recommendations. Against this background, the potential of low cost, quickly realisable measures to improve information on energy bills in order to motivate households to reduce their energy consumption has been assessed for the Swiss context. As an outlook, some ideas of what the trends of digitalization and market liberalization might imply for demand-side information (DSI) measures in general and energy billing in particular will be discussed.

### 2. METHODOLOGY

The analysis was based on: (1) literature review, (2) online survey of 54 Swiss utilities, (3) content analysis of exemplary bills of 91 Swiss and 175 foreign utilities from 25 different countries, (4) content analysis of websites of 309 Swiss and 200 foreign utilities from 15 different countries and (5) survey of 400 German-speaking, 426 French-speaking and 1520 Italian-speaking utility customers, exploring in particular their satisfaction with current energy billing and assessment of the preliminary

proposals for improved billing developed within the project.

### 3. PRELIMINARY RESULTS AND CONCLUSIONS

Literature review reveals that effective energy feedback including billing: (1) is frequent, (2) involves comparisons (with past consumption, reference group, goals), (3) is possibly provided in interactive, computerized form, (4) involves environmental impact of own consumption (especially for certain target groups), (5) is as specific as possible (consumption per device or activity), (6) is intuitively/easily comprehensible (graphs rather than tables and numbers) [14]. However, our survey of Swiss utilities shows that current DSI landscape in Switzerland is marked by: (1) low incidence of remote readout implying low billing frequency (2) paper bills as dominant billing practice, (3) comparisons only with regard to own historical consumption, (4) rare deployment of graphs for presenting data. Analysis of the DSI practices on the international level shows a slightly larger diversity of approaches especially regarding appealing designs. Based on those international best practices as well as on examples from Swiss pioneer utilities, five design proposals to improve billing effectiveness were developed, which will *be presented at the conference*. The focus thereby is on short term, low cost solutions, easily deployable on energy bills as a prevalent energy feedback medium in Switzerland. Our survey of utility customers suggests that Swiss households show interest in receiving evaluative judgment of their own consumption presented in a visually appealing manner, including the information on whether and by how far they overshoot or fail a reference level of consumption.

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