IEA Users TCP
Social License to Automate

Dr. Selin Yilmaz

Bern, 24 May 2022
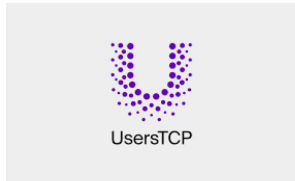
The IEA Users TCP Social License to Automate

**User-Centred Energy Systems**

About Us

The User-Centred Energy Systems mission is to provide evidence from socio-technical research on the design, social acceptance and usability of clean energy technologies to inform policy making for clean, efficient and secure energy transitions.

David Shipworth: Chair

- Task of the IEA Users TCP.

- The Annex was launched in October 2019 and now concluded (October 2021).

- The participating countries are Australia (operating agents), Austria, the Netherlands, Norway, Sweden, and Switzerland.

- Swiss academic coordinators: Dr. Selin Yilmaz (UNIGE) and Dr. Christian Winzer (ZHAW)

The concept of a 'social license'
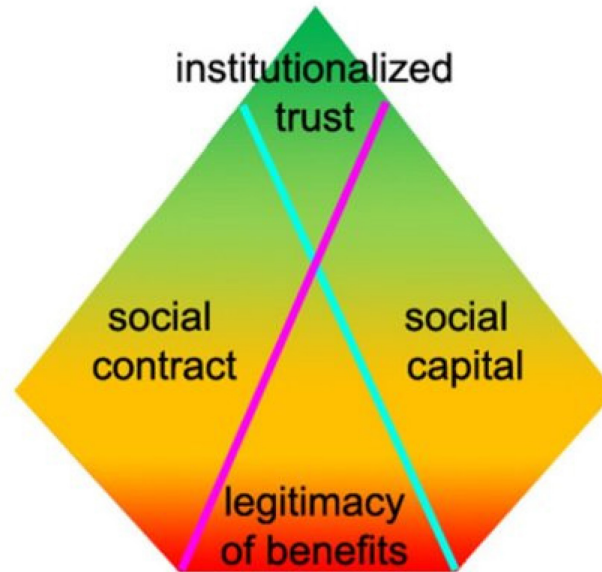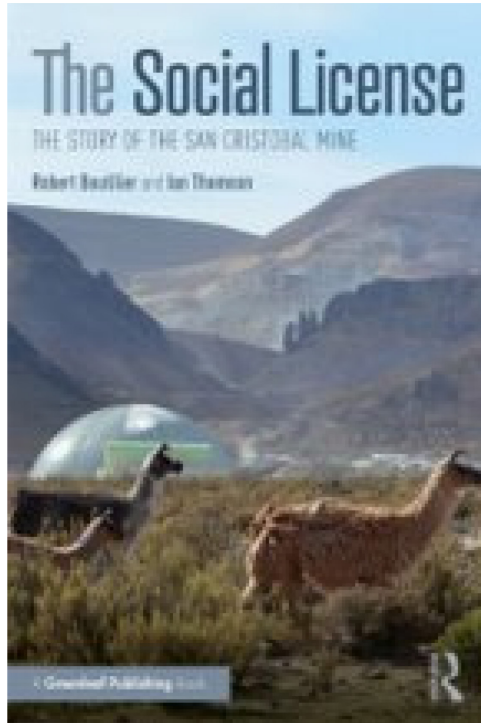
® Reference: Boutilier, R. G., Black, L., & Thomson, I. 2012. From metaphor to management tool: How the social license to operate can stabilise the socio-political environment for business

Aim of Task

To understand and find evidence:
- what social and practioner variables are there
- how trust between people and industry is built and maintained across different contexts

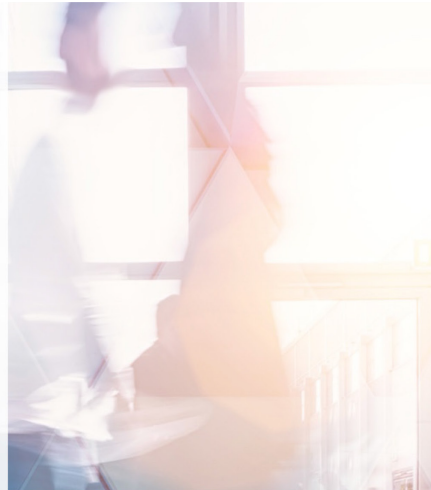to achieve Social License to Automate

Our team & work

Expert research groups in **six** countries
26 cases: feasibility, trial, demonstration and mature automation projects with over **6000** participants in surveys, interviews and active case feedback.

Social License to Automate

Emerging Approaches to Demand Side Management

Sophie Adams [a] [⊠], Declan Kuch [b] [⊠], Lisa Diamond [c] [⊠], Peter Fröhlich [c] [⊠], Ida Marie Henriksen [d] [⊠], Cecilia Katzeff [e] [⊠], Marianne Ryghaug [d] [⊠], Selin Yilmaz [f] [⊠]

Methods
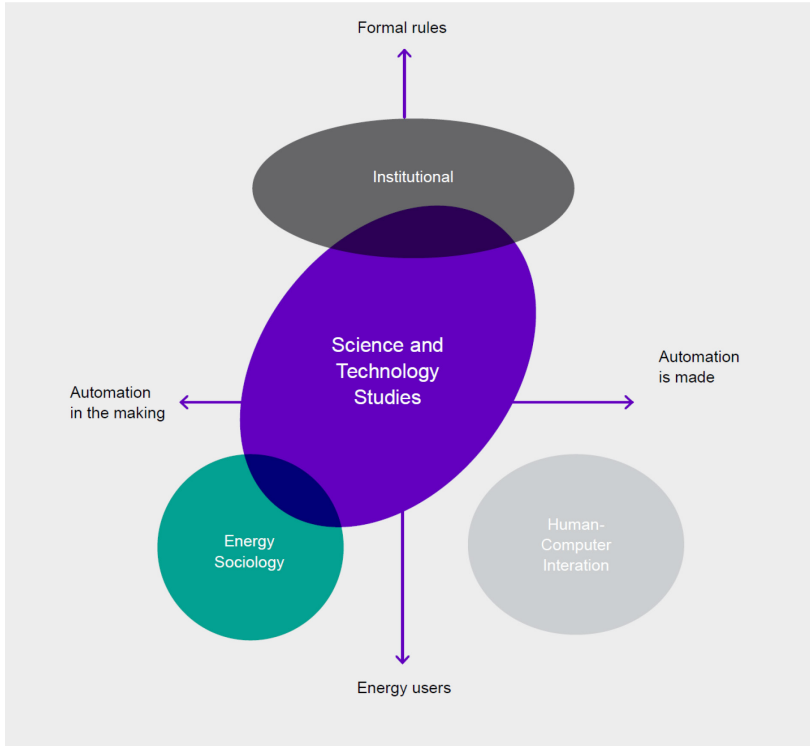
Figure: Workstream approach to automation and scale
(Source: IEA Users TCP SLA

- **Human-Computer Interaction (HCI) studies**
How can communications and interfaces be designed to meet the needs of users?

- **Energy sociology**
Which energy activities can be time-shifted through automation?

- **Science and Technology Studies (STS)**
What are the solutions offered by automated DSM and to what extent are they do these aligned with users' values and interests?

- **Institutional and policy studies**
How can common electricity resources be effectively governed?

Analytical framework

- Context, aims and framing
- Project details
- Involved Actors and regulatory aspects
- Technical parameters of the automation and impact
- **Analytical framework**
- End-user interaction with the automation System
- Incentive
- Information provision and data sharing
- Project results
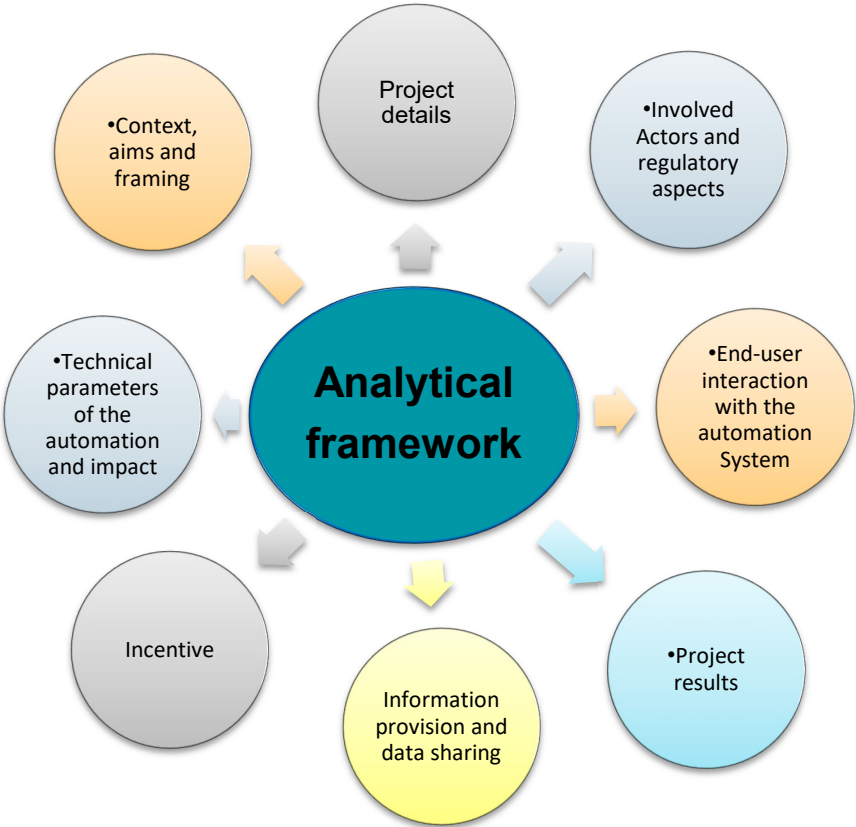
Very quick glimpse at the Swiss cases

Kaufmann, Künzel et Loock 2014

Yilmaz et al. 2020

Ludwig et al. 2021

Soland et al. 2018

Moser 2017

Kubli, Loock, et Wüstenhagen 2018

Broman Toft, Schuitema, et Thøgersen 2014a

Gamma 2016

Broman Toft, Schuitema, et Thøgersen 2014b

Gamma et al. 2021

Gamma, Loock, et Cometta 2014

Systematic reviews of Surveys

10
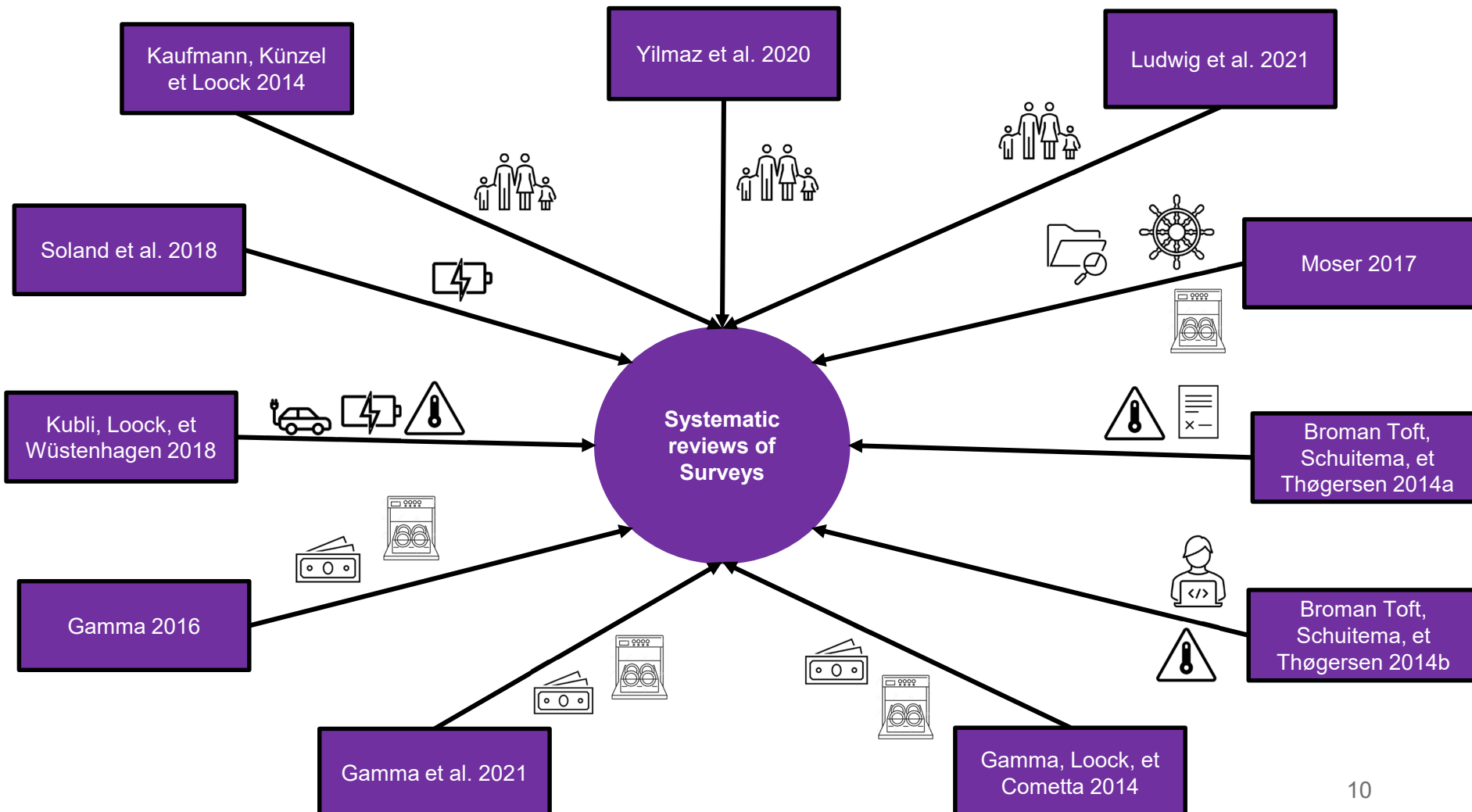
Pilot projects & programmes

Tiko

Innovative self-consumption optimization

Luggagia Innovation Community

Quartierstrom

Trials and programs analysed

Frequency control balancing

Peak load shaving

Self-consumption of individuals and/or communities

Bidding into spot, futures and wholesale markets

Decentralised flexibility – Démonstrateur Smart Grid

OKEE

Warm up

GoFlex

Links for publications

Academic publications:

- S., Adams, D., Kuch, L., Diamond, P. Fröhlich, I.M. Henriksen, C., Katzeff, M., Ryghaug, S., Yilmaz (2021). Social License to Automate: A Critical Review of Emerging Approaches to Electricity Demand Management. *Energy Research and Social Science.* Vol: 80, 102210*.* https://www.sciencedirect.com/science/article/pii/S2214629621003030

- P. Fröhlich, T. Esterl, S. Adams, D. Kuch, S. Yilmaz, C. Katzeff, C. Winzer, L. Diamond, J. Schrammel, Z. Lukszo, T. Fullelove. **(2020).** Towards a Social License to Automate in Demand Side Management: Challenges, Perspectives and Regional Aspects. 16. Symposium Energieinnovation, 12.-14.02.2020, Graz/Austria. Available from: https://userstcp.org/wp-content/uploads/2020/03/Fr%C3%B6hlich_et_al_2020_Towards_a_Social_License_to_Automate.pdf

Final reports
Social License to Automate International Final report (208 pages).
Social License to Automate Executive summary report (32 pages).
Social License to Automate Switzerland country profile report (60 pages)

Outlook: Social License to Automate V2

- Early adopters (PV & EV owners, already a community member), mostly men,
- Casts doubts on issues such as equity, gender balance, inclusiveness therefore the scalability of the projects.
- Community engagement is complete another story!

Follow-up (Version 2):
- Gender, diversity factors in motivations
- Roles of cooperatives, communities (links with P2P) in Social License.

13

Thank you very much!

Selin.Yilmaz@unige.ch