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PERSPECTIVES OF POWER-TO-X **TECHNOLOGIES IN SWITZERLAND**

T. Kober¹, C. Bauer¹, C. Bach², M. Beuse³, G. Georges⁴, M. Held⁴, S. Heselhaus⁸, P. Korba⁵, L. Küng⁴, A. Malhotra³, S. Moebus⁶, D. Parra⁷, J. Roth¹, M. Rüdisüli², T. Schildhauer¹, T.J. Schmidt¹, T.S. Schmidt³, M. Schreiber⁸, F.R. Segundo Sevilla⁵, B. Steffen³, S.L. Teske²

¹ Paul Scherrer Institute (PSI); ² Swiss Federal Laboratories for Materials Science and Technology (EMPA); ³ ETH Zurich, Department of Humanities, Social and Political Sciences, Energy Politics Group; ⁴ ETH Zurich, Department of Mechanical and Process Engineering, Institute for Energy Technology, Aerothermochemistry and Combustion Systems Laboratory; ⁵ Zurich University of Applied Sciences (ZHAW), School of Engineering; ⁶ Hochschule für Technik Rapperswil (HSR), Institute for Energy Technology; ⁷ University of Geneva, Institute for Environmental Sciences; ⁸ University of Lucerne, Faculty of Law

Perspectives of Power-to-X technologies in Switzerland

A White Paper

NEW ENERGY LANDSCAPES

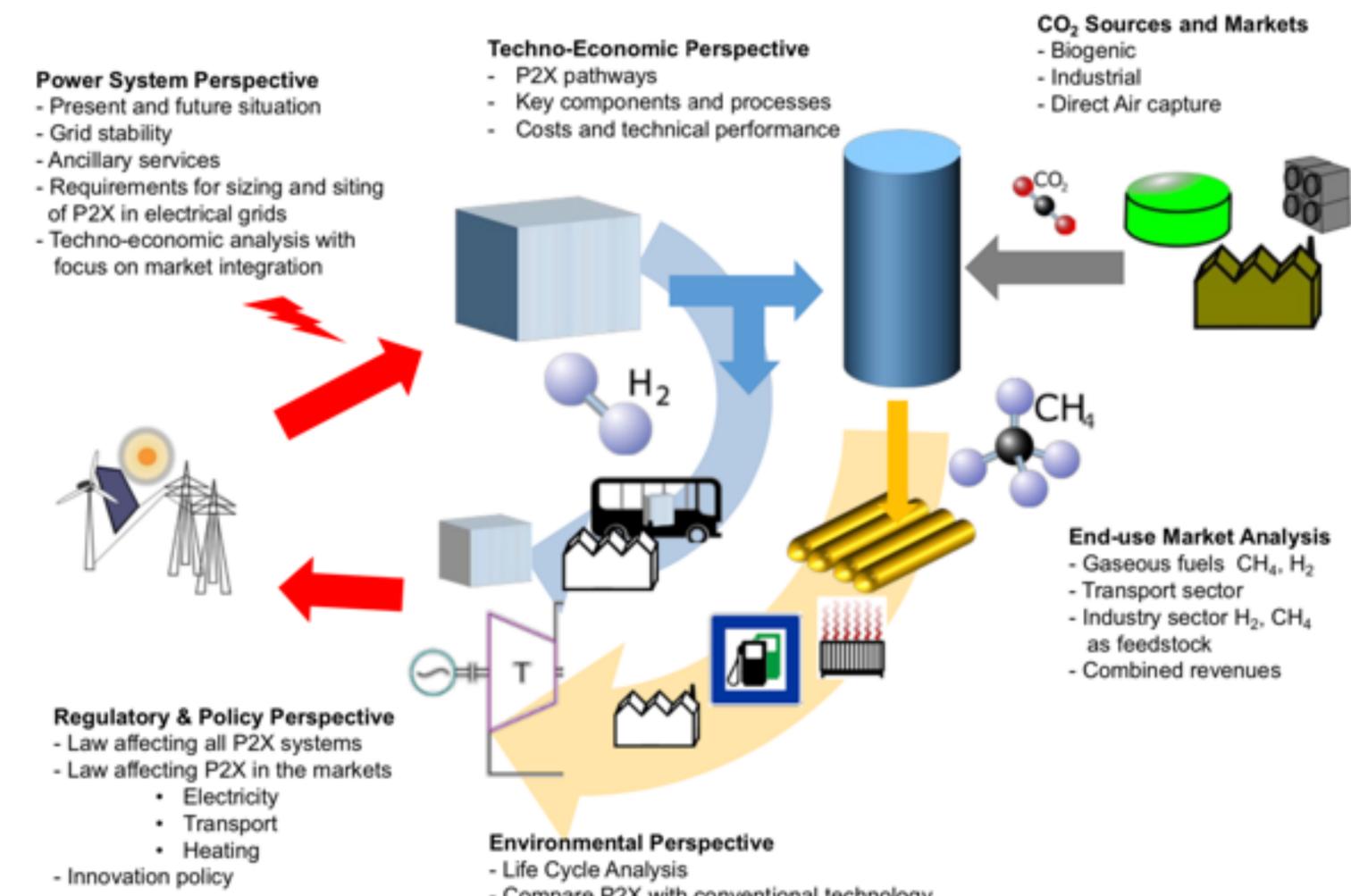
- Growing share of intermittent renewable energy, acceleration in future
- Increasing challenges of temporal and spatial grid balancing
- P2X technologies represent future potential solutions for this balancing challenge and for supply of clean fuels

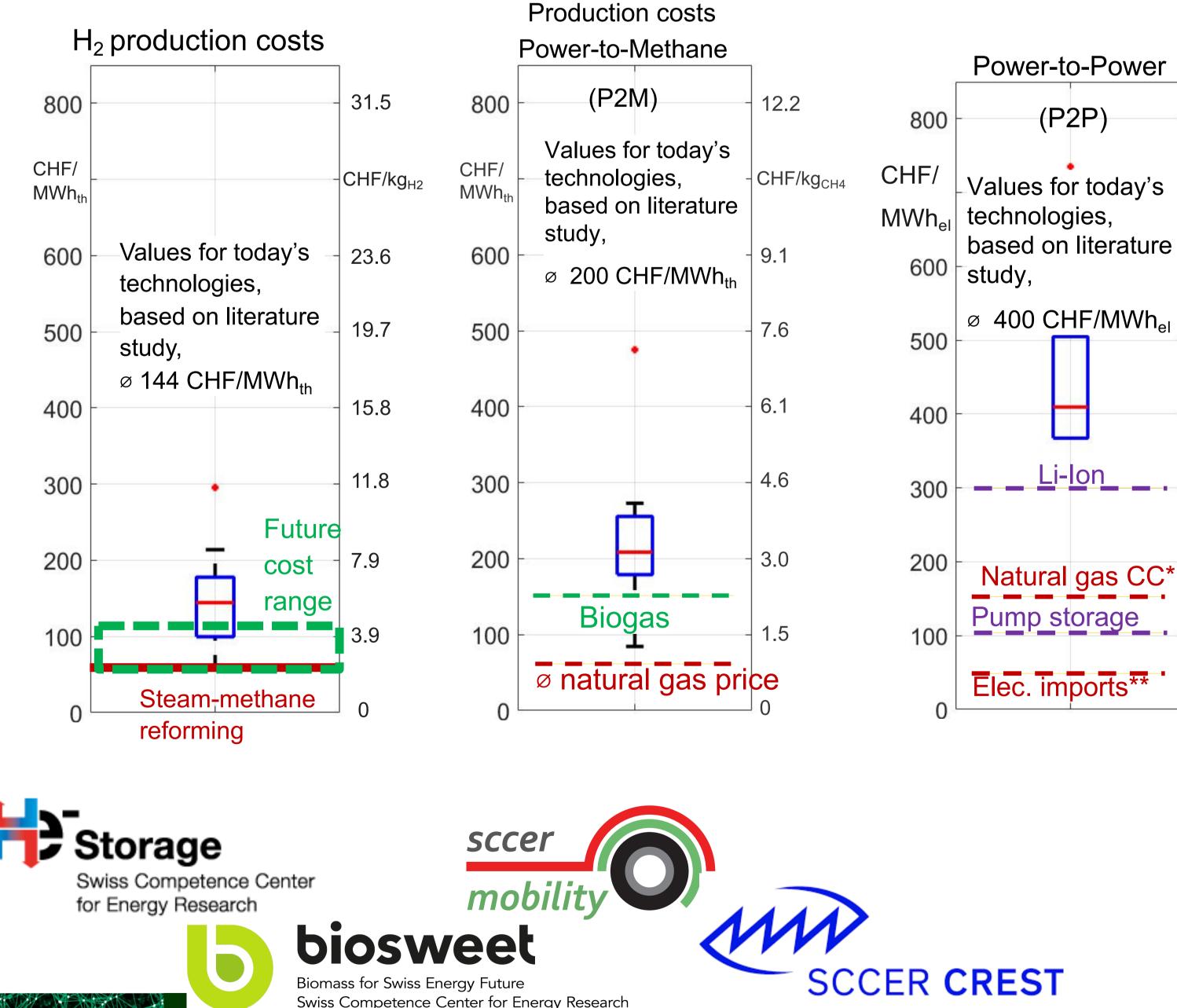
OBJECTIVES

- Collect the major existing P2X knowledge
- Provide a synthesis and evaluation for the Swiss energy market
- Derive a technical, economic and environmental assessment of P2X in the energy system, with a focus on interdependencies on the gas market, the mobility sector and the electricity market

P2X COST EVALUATION

MULTIPLE PERSPECTIVES





Compare P2X with conventional technology

KEY RECOMMENDATIONS

- Ambitious goals for domestic reduction of CO₂ emissions are required
- Ambiguities in the regulation framework should be eliminated acknowledging the benefits of P2X
- Upscaling of pilot P2X plants should be supported in order to reach commercial unit sizes
- Innovation policy should strengthen the domestic market for **P2X products** and support learning-by using P2X technologies in comprehensive project setups covering complete P2X value chains
- Clear rules for accounting for potential environmental benefits of P2X
- The role of P2X and the optimal use of P2X to achieve long-term energy and climate goals should be deepened in holistic studies, with particular attention to system integration and local aspects.





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🤪 Empa Materials Science and Technology

Research supported by: Innosuisse Swiss Federal Office of Energy

HOCHSCHULE FÜR TECHNIK

Energy research conference, 20 November 2020, Biel