

The Energy & Strategy Think Tank (ESTT) at WU's Institute for Strategic Management (ISM) (<https://www.wu.ac.at/en/ism/energy-strategy-think-tank/>) invites applications for a master thesis.

Working Title: *Artificial intelligence: Application domains in energy and implications for incumbent energy providers*

Scope, Aims, Methods, and Initial Literature: Artificial intelligence is said to be disruptive force in many industries (von Krogh, 2018). One of these industries is the energy industry. The impact of an increasing digitalization has already been debated under the umbrella term "smart energy" (Dincer & Acar, 2017; Mathiesen et al., 2015; Vesnic-Alujevic, Breitegger, & Pereira, 2016). However, the discussion of the potential of artificial intelligence as emerging technology (Rotolo, Hicks, & Martin, 2015) is only about to start. The thesis adds to this conversation and aims to:

- identify key application domains of artificial intelligence alongside the supply chain of incumbent energy providers
- systematical assess the implications of each application domain incumbent energy providers

Insights from 1) a systematic review of the scientific literature (Denyer & Tranfield, 2009), 2) selected grey literature issued by an focusing on the carmakers (Adams, Smart, & Huff, 2017), as well as 3) expert interviews (Cassell, 2009) should be combined.

Thesis Language: English or German (only if you are enrolled in a program with German as main language)

Corporate Partner and Certificate: Verbund – *Austria's leading electricity company and one of the largest producers of hydropower electricity in Europe.* Upon thesis completion, you will be awarded a certificate that states your tasks, gained expertise, and the corporate partner.

Expectations and Support: Constant feedback and regular meetings with faculty and, possibly, the above-mentioned corporate partner will facilitate a high-quality thesis with impact on management practice that is completed in a timely fashion. You will be provided with a guideline that details the supervision and writing process, expected deliverables beyond the final thesis, and grading as well as a package to kick off your thesis.

Targeted Students: Excellent and ambitious students of all MSc and MBA programs at WU Vienna University of Economics and Business are eligible and encouraged to apply. In principle, it is possible to write the thesis together with another student.

Interested? Send CV and grade certificates of all your studies to patrick.holzmann@wu.ac.at

Initial References:

- Adams, R. J., Smart, P., & Huff, A. S. (2017). 'Shades of grey: Guidelines for working with the grey literature in systematic reviews for management and organizational studies'. ***International Journal of Management Reviews***, 19(4), 432-454.
- Cassell, C. (2009). Interviews in organizational research. In D. A. Buchanan, & A. Bryman (Eds.), *The sage handbook of organizational research methods*: 500-515. Thousand Oaks: Sage.
- Denyer, D., & Tranfield, D. (2009). Producing a systematic review. In D. A. Buchanan, & A. Bryman (Eds.), *The sage handbook of organizational research methods*: 671-689. Thousand Oaks, CA: Sage.
- Dincer, I., & Acar, C. (2017). Smart energy systems for a sustainable future. ***Applied Energy***, 194, 225-235.
- Mathiesen, B. V., Lund, H., Connolly, D., Wenzel, H., Østergaard, P. A., Möller, B., Nielsen, S., Ridjan, I., Karnøe, P., Sperling, K., & Hvelplund, F. K. (2015). Smart Energy Systems for coherent 100% renewable energy and transport solutions. ***Applied Energy***, 145, 139-154.
- Rotolo, D., Hicks, D., & Martin, B. R. (2015). What is an emerging technology?. ***Research Policy***, 44(10), 1827-1843.
- Vesnic-Alujevic, L., Breitegger, M., & Pereira, A. G. (2016). What smart grids tell about innovation narratives in the European Union: Hopes, imaginaries and policy. ***Energy Research & Social Science***, 12, 16-26.
- Von Krogh, G. (2018). Artificial intelligence in organizations: New opportunities for phenomenon-based theorizing. ***Academy of Management Discoveries***, 4(4), 404-409.