

Guide to support SMEs in the Canton of Schwyz in identifying, financing and implementing energy efficiency measures

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1. Introduction, Goals and Research Questions

This thesis addresses the challenge of enhancing energy efficiency in Small and Medium-sized Enterprises (SMEs) in the Canton of Schwyz. The focus is on implementing the measure "Promotion of energy efficiency and renewable energies in SMEs" from the Energy and Climate Plan 2023+ (EKP), which aims to support the Canton's commitment to achieving net-zero emissions by 2050 (Kanton Schwyz, 2022). This initiative focuses on identifying, financing, and implementing energy efficiency measures for SMEs.

Project aim: Enhance the energy efficiency of the infrastructure within SMEs by analyzing two approaches: internal energy audits and external energy consultations

2. Method Overview and Materials

Internal Energy Audits: Conducted using the catalog of measures developed in the Industrial Project (PAIND). Focused on evaluating and proposing efficiency improvements in SME infrastructure. Provided a detailed cost analysis example of transitioning from fluorescent lamps to LED lighting, illustrating practical application.


Measure	Reason	Task	Person responsible	Remarks
Heating				
No investment required Set the thermostatic valve correctly (EnergieSchweiz, 2023)	If the room temperature is too low or too high in only a few rooms at the start of the heating season, this is usually due to individual thermostatic valves that are either defective or not set correctly. In buildings, each additional degree increases heating costs by 6 to 10 percent.	Check at the beginning of the heating season – usually in October – whether all thermostatic valves are functioning and the correct temperature is set. For a comfortable indoor climate, the following temperatures are recommended as guidelines: Figure 1: Recommended temperature from SFOE (EnergieSchweiz, 2023)  Office, meeting rooms: 20 to 22 °C Workshop: 18 °C Storage, cellar: 16 °C Traffic areas: 17 °C Toilets, showers: 20 to 23 °C		
Secure thermostats in public areas (EnergieSchweiz, 2023)	The settings on thermostat valves in public areas such as corridors, toilets, or showers are often changed. In these areas, there is also a higher risk of mechanical strain and theft. In buildings, each additional degree increases heating costs by 6 to 10 percent.	In some models, the thermostat head must be removed for limitation; otherwise, it can be done on the installed thermostat head. Install any caps or protective covers (available through the heating installer).		

Figure 1: Measure catalog from PAIND

External Energy Consultations: Developed a partnership framework between the national energy promotion program PEIK, Schwyz Next and the Environmental Department of the Canton of Schwyz. Aimed to provide SMEs with access to professional energy consultations and financial support.

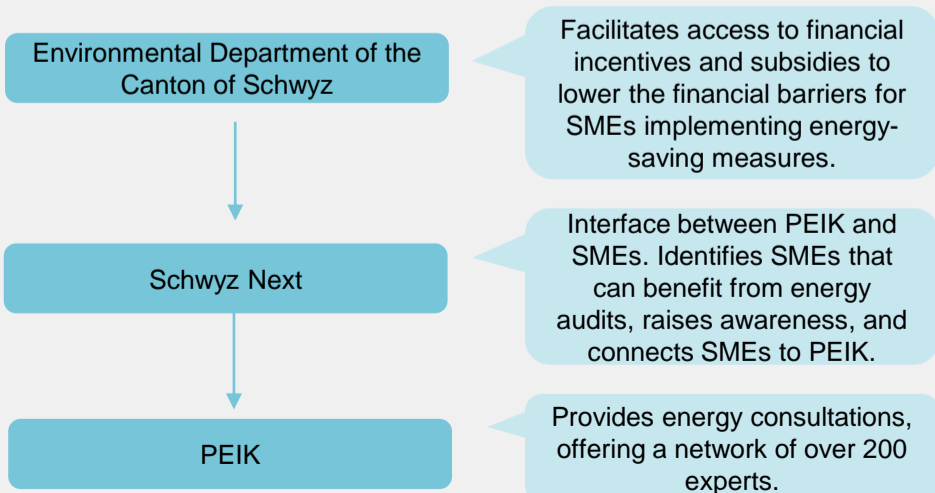


Figure 2: Partnership framework for external audits

3. Results and Discussion

Internal Energy Audits

→ LED Lighting Installation in a warehouse (area: 300m²): Initial investment of 13'500 CHF led to annual savings of 490 CHF. Net Present Value (NPV) over 25 years showed a financial shortfall of 5'800 CHF, indicating the need for further financial incentives.

→ Energy Flow Mapping: Identified the absence of energy flow maps in SMEs. Recommended the implementation of energy meters to better understand and manage energy consumption.

External Energy Consultations

→ Proposed a scalable partnership model between PEIK, Schwyz Next, and the Environmental Department.

→ Facilitated subsidized energy consultations and promoted energy efficiency through strategic engagement and tailored support.

Discussion

→ Substantial opportunities for energy efficiency improvements in SMEs were identified.

→ Financial viability of some measures, such as LED lighting, requires additional support.

→ The partnership framework provides a scalable model for enhancing energy efficiency by leveraging national programs and local expertise.

4. Conclusion and Recommendations

Conclusion

→ Significant potential for energy efficiency improvements in SMEs through internal audits and external consultations.

→ Financial support is crucial for the viability of some energy efficiency measures.

Recommendations for SMEs

→ Install energy meters and create energy flow maps to identify and manage energy-intensive areas.

→ Engage with PEIK for professional energy consultations and leverage available subsidies.

References

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2. PEIK Energieberatung für KMU. (2024). Energieberatung für KMU von EnergieSchweiz. <https://peik.ch/>