ECEEE Industry Summer Study
Arnhem, Sept 13th, 2012
Panel V

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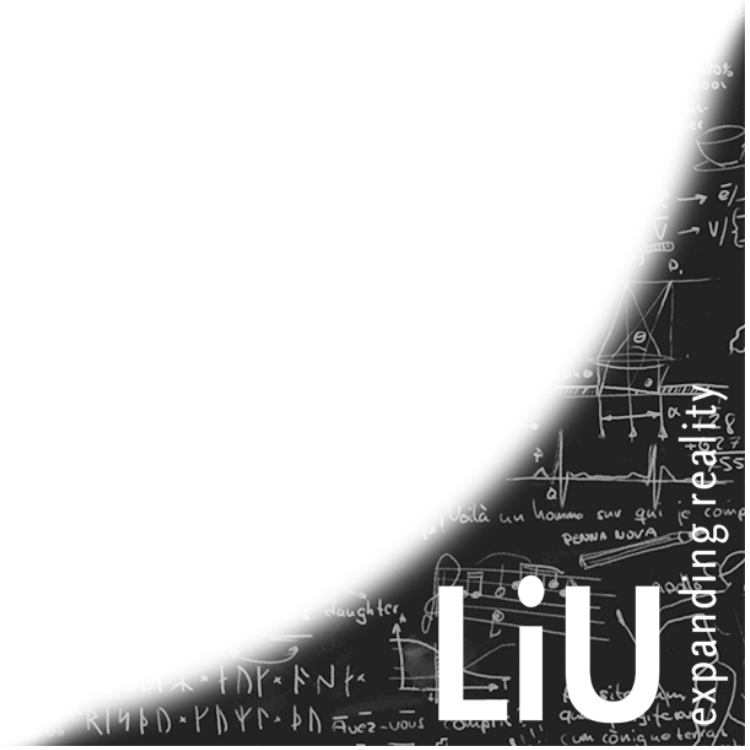
Disposition

- Aim and scope of IEA IETS Annex XVI ”Energy Efficiency in SMEs”.
- Suitable EnMS approaches for SMEs and less energy-intensive manufacturing firms
- Policy program design



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Objectives and scope

The objective of this Annex is to analyze energy systems and factors promoting or inhibiting a more efficient energy use in industrial SMEs, through specific studies of:

- Energy policies and programs towards industrial SMEs
- Energy efficiency technologies and their potentials and, barriers to implementation in industrial SMEs
- Methods and tools, for e.g. energy auditing and energy management, used in energy efficiency studies towards industrial SMEs
- Energy services and business models for industrial SMEs

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Succes factors for industrial energy management – beyond management systems

1. top management support of the energy management program
2. create a long-term energy strategy with quantified goals for improved energy efficiency over the coming 5–10 years
3. based on the formulated strategy, create two energy plans, covering one-year and multi-year periods, respectively; involved measures should be framed in terms of technology, behavior, conversion, and reduced area to be heated/cooled

Thollander P, Palm J, 2013. Improving energy efficiency in industrial energy systems - an interdisciplinary perspective on barriers, energy audits, energy management, policies & programs. Springer. ISBN 978-1-4471-4161-7.

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Succes factors for industrial energy management – beyond management systems

4. create an energy manager position, i.e., an energy controller; this position does not need to be full time but should be filled by someone with operational responsibility, for example, the production rather than the maintenance manager
5. set aside funding for sub.metering installations, preferably at the division level, to overcome the split incentive barrier
6. create clear key metrics to enable concrete follow-up of results, for example, of submetering

Ibid

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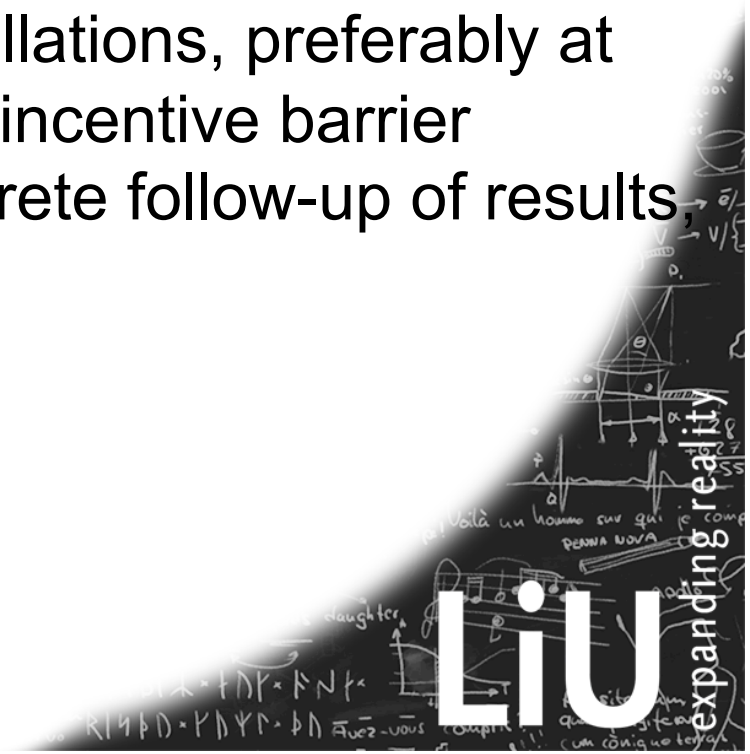

Succes factors for industrial energy management – beyond management systems

7. create a floor level position so that one person per shift is responsible for energy
8. provide continuous energy efficiency education to employees
9. visualize the progress of energy management work within the company and its divisions
10. set up an energy competition between divisions.

Ibid

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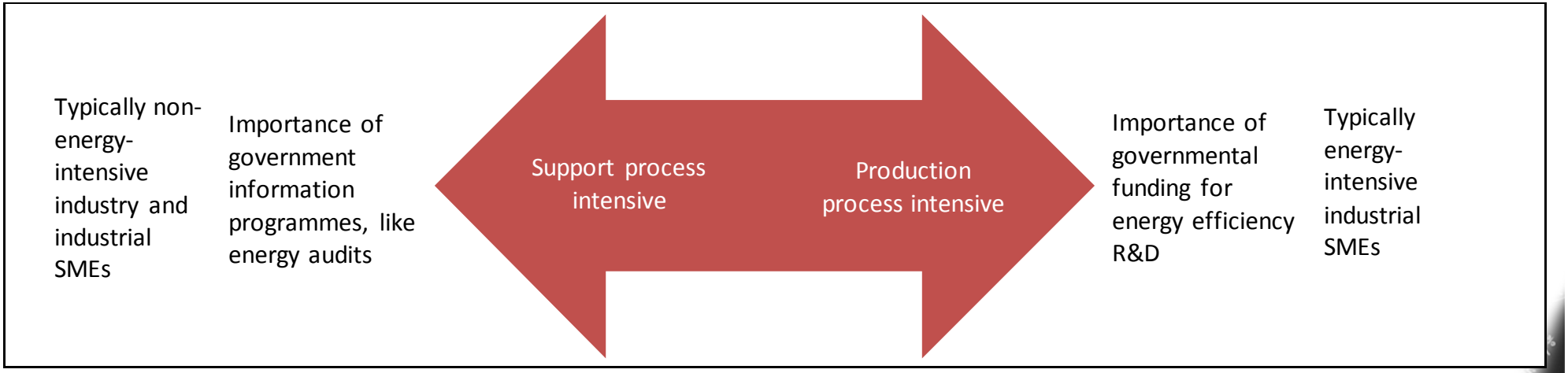
Suitable EnMS approaches for SMEs and less energy-intensive manufacturing firms



Ibid

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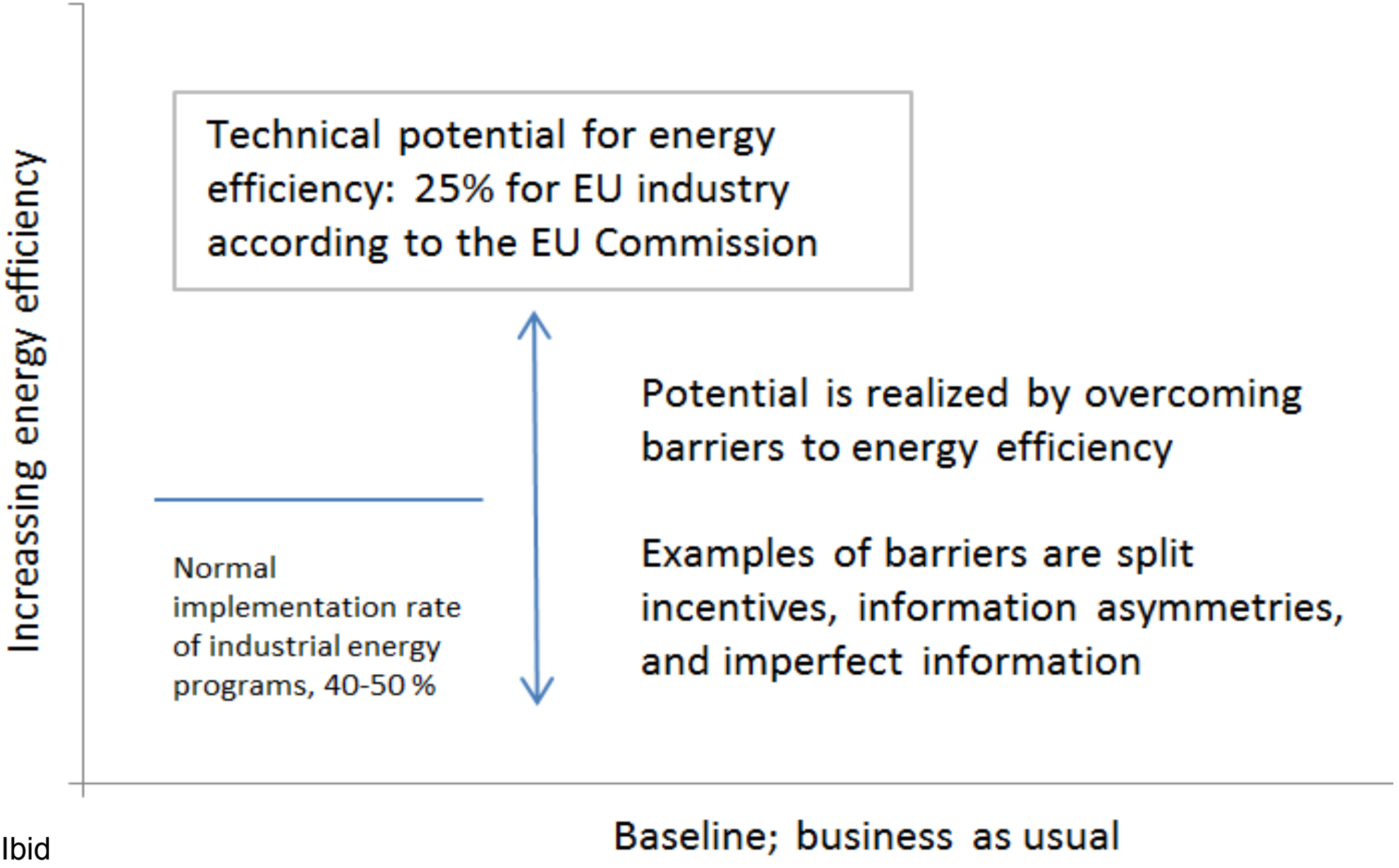
Suitable EnMS approaches for SMEs and less energy-intensive manufacturing firms



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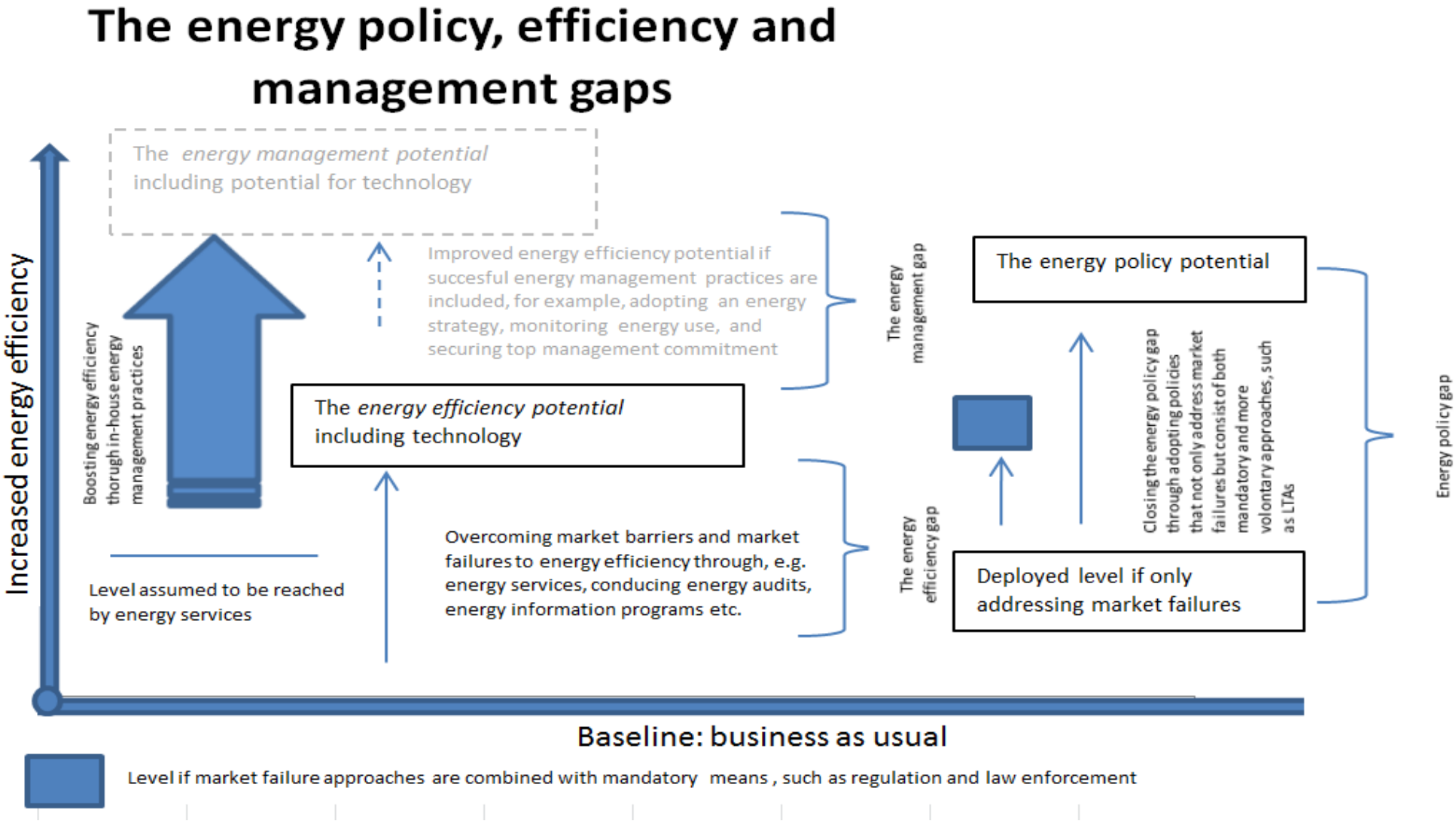
Suitable EnMS approaches for SMEs and less energy-intensive manufacturing firms



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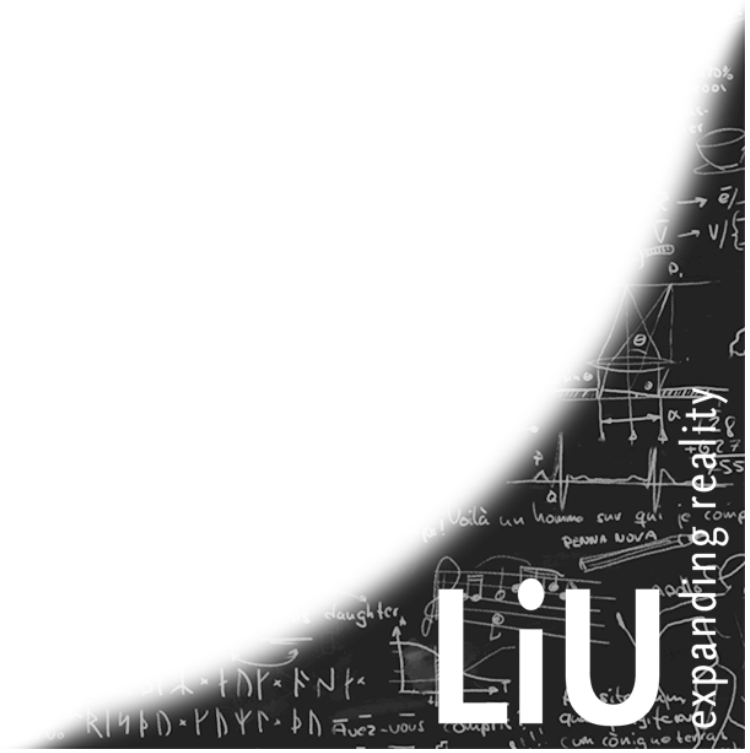
Policy program design

- Energy audits with ”light” EnMS including/supported by networks or clusters for non energy-intensive SMEs (insourced energy controller).

- Full-scale LTAs/VAs including EnMS-certification for energy-intensive SMEs
- ….



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Thanks for your attention!

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Estimated energy efficiency potentials

	Category	Potential for energy efficiency (%)
From techology	X	4.6
	Y	20
	All firms	6
From energy management	X	6
	Y	13
	All firms	6

X: firms that have participated in the Swedish LTA-program, PFE/conducted an energy audit in the last three years.

Y: firms that have not participated participated in the Swedish LTA-program/nor conducted an energy audit in the last three years

(Category X is 94% of the energy use

Backlund et al., 2012. Paper presented at the ECEEE Industry Summer Study

Task I: Energy policies and programs towards industrial SMEs

I. Description of the country specific context. Energy mix, overall country energy use, part of energy used by industrial SMEs, etc.
II. Overview of policies and programs implemented including subsidies, administrative polices, energy audit checks, investment funds, networks, general information campaigns including self-scanning, and benchmarking methods, i.e. possibility for SMEs to compare their energy use

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Task I: Energy policies and programs towards industrial SMEs

III. Feedback and outcomes. Overview of the experience, e.g. difficulties met during implementation of the program/policy, outcome in terms of energy saved in relation to, e.g. public money invested in the program and advantages/ disadvantages with various designs (micro firms will also be included in this subtask)

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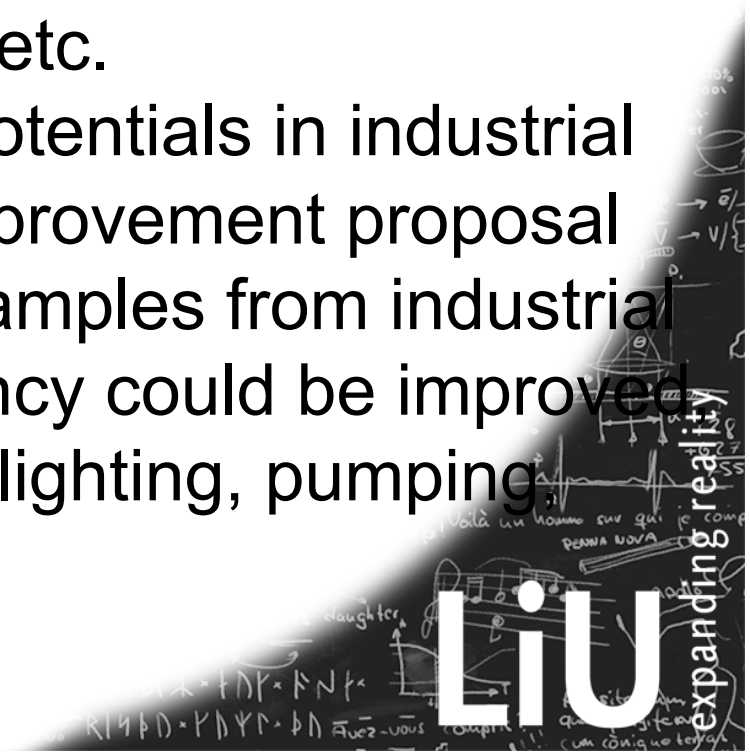
Task II: Energy efficiency technologies and their potentials and , barriers to implementation in industrial SMEs

I. Allocation of energy use in industrial SMEs (bottom-up) (whole site energy audit /survey part results) including concrete examples from industrial SMEs on where energy is used, e.g. production processes, HVAC, lighting, pumping, compressed air etc.

II. Comparison of energy efficiency potentials in industrial SMEs (whole site energy audit /improvement proposal part results) including concrete examples from industrial SMEs on where the energy efficiency could be improved e.g. production processes, HVAC, lighting, pumping, compressed air etc.

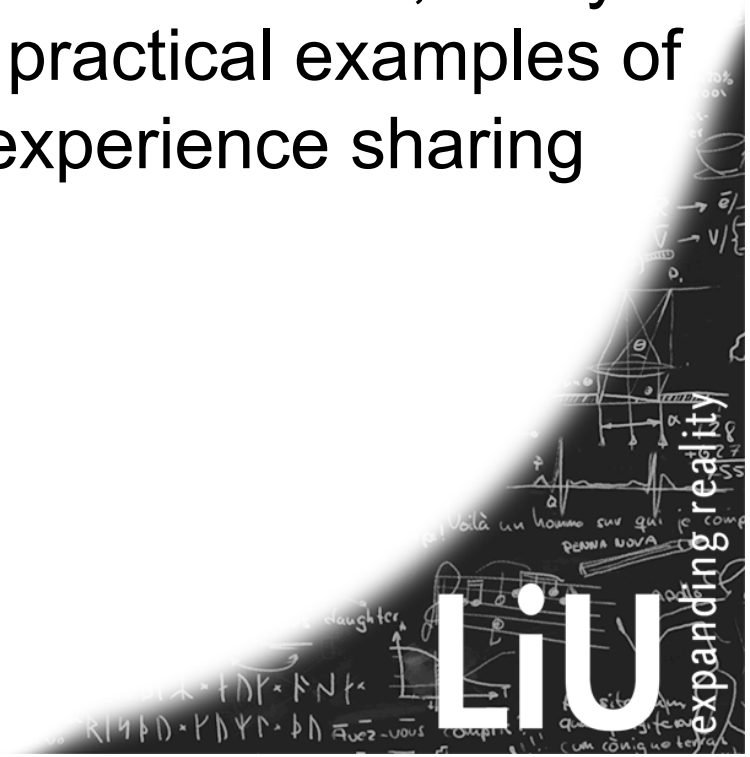


Task II: Energy efficiency technologies and their potentials and , barriers to implementation in industrial SMEs

III. Review of main energy efficiency measures with short description, energy savings, return on investments, advantages and disadvantages for various industrial SME sectors, etc. and a concrete example as reference
IV. Overview of major barriers to energy efficiency in industrial SMEs based on previous studies
V. Suggestions for further categorization of industrial SMEs (based on the common definition but further elaborated) based on results from subtask i and ii

Task III: Methods and tools to achieve energy efficiency in industrial SMEs

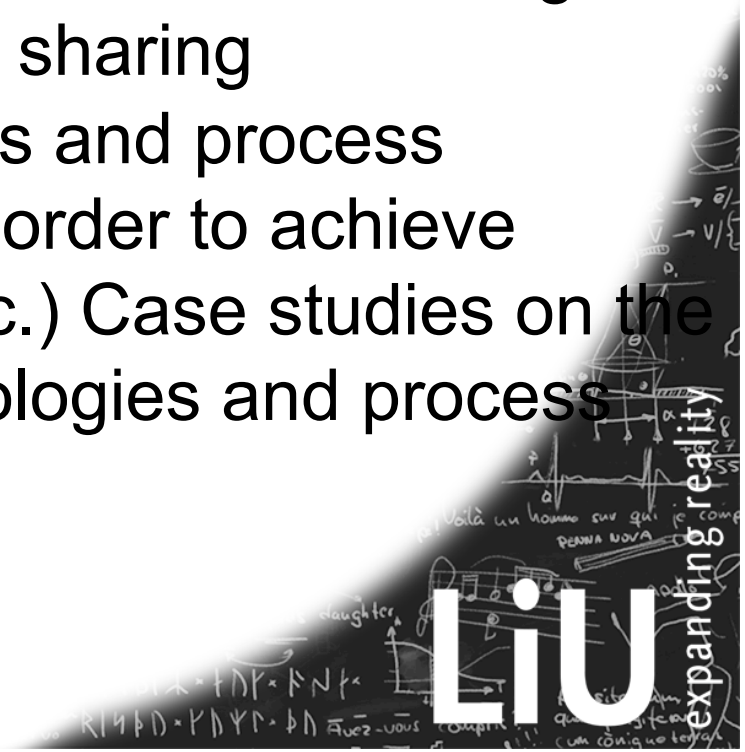
I. Benchmarking methods and tools. Overview, analysis and mapping of existing tools, and practical examples of the use of benchmarking tools including experience sharing
II. Technical auditing methods and tools. Overview, analysis and mapping of existing tools, and practical examples of the use of auditing tools including experience sharing



Task III: Methods and tools to achieve energy efficiency in industrial SMEs

III. Energy management methods and tools. Overview of the adoption level of energy management practices, practical examples of the use of EMS (Energy Management Systems)-standardization. Overview of other energy management tools towards industrial SMEs including practical examples and experience sharing

IV. Overview on emerging technologies and process integration (methods and tools) (in order to achieve energy efficiency improvements etc.) Case studies on the implementation of emerging technologies and process integration



Task IV: Energy services towards industrial SMEs

I. Overview of business models and energy service offers by consulting firms, utilities, and ESCOs with practical examples of business models and offers including which type of technologies that are treated
II. Feedback and outcomes. Experience of various models and services, for example TPC and EPC, e.g. difficulties met during the use of various business models/ implementation of various energy services, including advantages and disadvantages in regards to, e.g. local context, type of technology etc. (micro firms will also be included in this subtask)