



National schemes for energy efficiency in SMEs



DEESME has received funding from the European Union's Horizon 2020 Research and innovation programme under grant agreement No 892235.

# DEESME for policy implementers: Energy audits and management in the EED



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# Energy Audit obligation according to Article 8 of the current Energy Efficiency Directive ( EED)

## Article 8: Energy audits and energy management systems

(4) Member States shall ensure that **enterprises that are not small-to-medium sized enterprises (SMEs)** are subject to an **energy audit** [...] by 5 December 2015 and at least every four years from the date of the previous energy audit.

(6) Enterprises [...] that are implementing an EMS [...] shall be exempted.

**25.10.2012**

Directive 2012/27/EU on  
energy efficiency

Company category	Staff headcount	Turnover or	Balance sheet total
SME	<250	<= € 50 m	<= € 43 m

Link to EED: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02012L0027-20200101&from=EN>



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# Enabling National Authorities to enhance the Impact of Energy Audits and EMS in the DEESME project

## Identification of Challenges

A: Inventory of needs and requirements of NAs

*Survey/interviews with NAs*



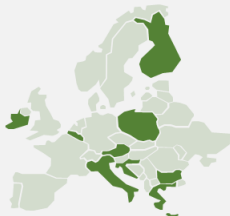
Reports available at <https://www.deesme.eu/knowledge-hub/>

# Enabling National Authorities to enhance the Impact of Energy Audits and EMS

## Identification of Challenges

A: Inventory of needs and requirements of NAs

*Survey/interviews with NAs*



non-SMEs

- 11 challenges
- 27 sub-challenges

SMEs



Reports available at <https://www.deesme.eu/knowledge-hub/>

# Enabling National Authorities to enhance the Impact of Energy Audits and EMS

Identification of

Challenges

Best practises



- 55 solution strategies
- 50 country best practises
- Interactive PDF document

Link to guideline →



Reports available at <https://www.deesme.eu/knowledge-hub/>

# Challenges in transposition of Art. 8 EED



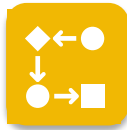
# 2 Identification of obligated companies

The identification of obliged companies can be challenging. Commonly, either existing or self-established databases are used to identify companies. Energy thresholds can also be introduced.



## Identify companies

- Identify companies based on existing registers
- Identify companies based on own data collection
- Assist the self-declaration of companies



## Energy threshold to allow simplified EA

- Define who would be targeted by the simplification
- Define simplified requirements to fulfil Art. 8
- Implement simplified approach



## Energy threshold to include add. companies

- Collect energy consumption data
- Define energy thresholds
- Inform companies

# Challenge #02: Identification of obligated companies

## Example: Active identification of obligated companies (EE)

- **Active identification:**
  - **Step 1:** data of the public commercial register are used and filtered according to the non-SME definition of the EU
  - **Step 2:** information on the pre-listed companies are manually checked (using e.g. financial reports of the companies)
  - **Step 3:** if some data are missing:
    - enterprises fulfilling some of the criteria are listed separately
    - information is also collected from other sources
  - **Step 4:** list of “obligated companies” is published yearly in spring
  
- **Active contact:** Companies are individually informed by the authorities.



# Challenge #02: Identification of obligated companies

## Example: Active identification of obligated companies (EE)

### Remarks:

- Companies can show evidences that there are below the SME thresholds at least 2 years long
- Only multi-nationals **registered in Estonia** can be identified in the list of obligated companies
- **Transparency:** list as well as the methodology are online
- Further possible improvement: In Estonia, there is a central database for electricity and gas. It would be technically possible to cross the database of obliged companies with the one on energy consumption, but this would required some legal changes.



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# Challenges in transposition of Art. 8 EED



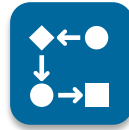
# 4 Quality of audits

Factors with influence on the quality of energy audits include the qualification of auditors, the requirements to both content and structure of the audit reports as well as the regularity and depth of audit quality checks.



## Quality of auditors

- Requirements for certification
- Auditor specialization
- List with certified auditors
- European cooperation



## Clarity of procedure

- Legal requirements
- Guidelines
- Templates



## Quality control of reports

- Basic validation
- Spot checks of quality
- Subcontracting

# 4 Quality of audits

Factors with influence on the quality of energy audits include the qualification of auditors, the requirements to both content and structure of the audit reports as well as the regularity and depth of audit quality checks.

Ensuring up-to-date qualification by **requiring auditors to do regular trainings**

In Germany, requirements were recently updated and auditors are now obligated to participate in **regular trainings**, on which they have to inform the national agency BAFA (EDL-G Article 8). It is expected that auditors will have to complete **16 units of training (each 45 minutes)** with relevance to energy audits **every 2 years**.



*Defined in draft legislation*



Improving audits by **providing a detailed guideline on how to conduct audits**

Ireland created an elaborate **64 page interactive PDF document** that guides auditors and companies step by step through the process of conducting the energy audit and reporting the results.

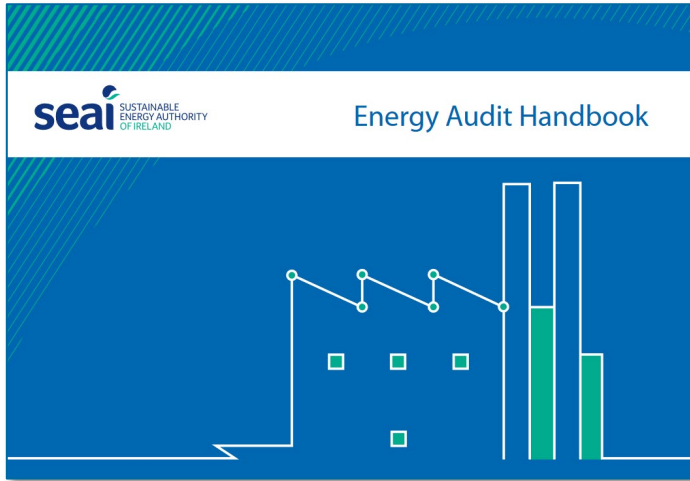


*SEAI Energy Audit Handbook*

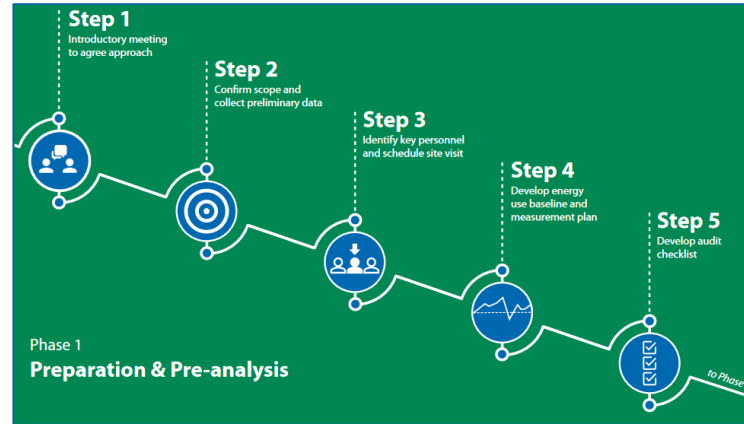


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<https://www.seai.ie/publications/SEAI-Energy-Audit-Handbook.pdf>



6. Financial Analysis of Opportunities

are included in spreadsheet simply their application. It also be included in the different lifetimes and periodic reconditioning costs, financial analysis.

Further guidance can also be found in the following publications:

- SEAI - Investing in Energy: A Practical Guide to Preparing and Presenting Energy Investment Proposals
- Carbon Trust - Making the business case for a carbon reduction project

	Project 1		Project 2	
	Present Value (€)	Cash Flow (€)	Present Value (€)	Present Value (€)
Running Cost (€)	100,000	125,000	125,000	
-	56,522	55,000	47,826	
+	49,149	55,000	41,588	
+	42,739	55,000	36,163	
-	32,164	55,000	31,486	
+	32,316	55,000	27,345	
Life Cycle Cost (€)	317,890		309,368	



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# Challenges in transposition of Art. 8 EED



# Challenge #05: Compromise between reporting effort and monitoring

## Current practices

Form of submission	Content of submission	Submission support	Submitter
<ul style="list-style-type: none"><li>▪ PDF</li><li>▪ Excel</li><li>▪ Online form</li></ul>	<ul style="list-style-type: none"><li>▪ Full report</li><li>▪ Summary of report</li><li>▪ Key data</li></ul>	<ul style="list-style-type: none"><li>▪ Guidelines</li><li>▪ Templates</li></ul>	<ul style="list-style-type: none"><li>▪ Company</li><li>▪ Auditor</li></ul>

# Challenge #05: Compromise between reporting effort and monitoring

## Example: Online portals for submission

### Online form Germany

**Gesamtenergieverbrauch**

Gesamtanzahl der Standorte des verpflichteten Unternehmens: \*

Energieträger	Eingabeart	Netto-Energiekosten [€]	Eingabe Verbrauchsmenge	Eingabe Energieverbrauch [kWh]	Anteil Gesamtenergieverbrauch [kWh]	CO <sub>2</sub> -Emission [tCO <sub>2</sub> ]
Stromverbrauch Inland					0	0,00
Nah- / Fernwärme					0	0,00
Fernkälte					0	0,00
Erdgas					0	0,00
Heizöl leicht	--- Bitte wählen ---				0	0,00
Heizöl schwer	--- Bitte wählen ---				0	0,00
Schifföl (Binnenschifffahrt)	--- Bitte wählen ---				0	0,00
Flüssiggas	--- Bitte wählen ---			kg	0	0,00
Steinkohle	--- Bitte wählen ---			kg	0	0,00
Braunkohle	--- Bitte wählen ---			kg	0	0,00
Ottokraftstoffe	--- Bitte wählen ---			l	0	0,00

<https://fms.bafa.de/BafaFrame/orca>

### Business platform Austria (USP)

**Audit: Daten**

Bereich: Gebäude auditert:  ja  nein

Bereich: Prozess auditert:  ja  nein

Bereich: Transport auditert:  ja  nein

Gesamtenergieverbrauch des Unternehmens [GWh] \*

gesamtes prognostiziertes Einsparungspotential pro Jahr [GWh] \*

durchschnittliches Energiekosteneinsparungspotential pro Jahr [€] \*

Abschlussdatum des Audits \*

Sonstiges

Kurzfassung des Auditberichts, sonstige Dokumente \*

<https://www.usp.gv.at/>

- High initial cost, lower running costs
- Filtered information, easy to process

*Contribute also to Challenge 1  
"Limited resources for transposition"*





# DEESME

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# 9 Guiding SMEs to action

Guiding SMEs towards energy audits or energy management systems can be supported by passive facilitation, e.g. lean application process for funding schemes, by active facilitation, e.g. via individual consultancy services or by establishing peer networks.



## Passive facilitation

- Provide a clear overview of the support schemes
- Facilitate the application process



## Active facilitation

- Define aim and target group
- Implement the facilitation



## Peer networks


- Implement a peer network

# 9 Guiding SMEs to action

Peer networks (e.g. Energy Efficiency Networks) effectively engage companies with low effort for NAs.

Increase implementation rate by **supporting the creation of energy efficiency networks**

In Germany, the Energy Efficiency Networks Initiative was started in 2014, and grew to 306 registered networks by June 2021, involving 2 709 companies. 5 to 15 different companies form a network for several years and use it to share information and best practices on energy efficiency measures. An energy consulting is used in the beginning to identify measures and commit to targets.

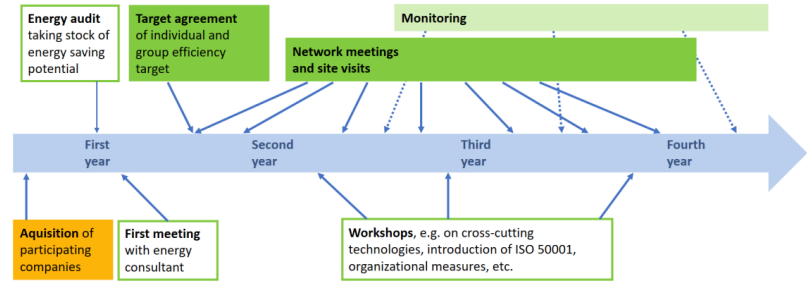
 Energy Efficiency Networks Initiative



Educate individuals by **supporting the creation of energy efficiency networks**

In its 4<sup>th</sup> National Energy Efficiency plan, Croatia included as a measure so-called Industrial Energy Efficiency Networks (IEEN). Some of the key elements of IEEN are to educate the management as well as employees of industrial companies in the field of energy efficiency and promote best practise projects.

 4<sup>th</sup> National Energy Efficiency plan



Source: Based on IPEEC 2017.