



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.

Effective policies for energy audits

DEESME Project "Policy challenges with the implementation of the new EED and audits in companies"



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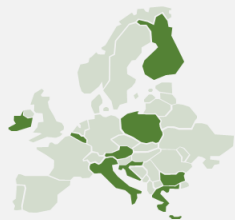


Enabling National Authorities to enhance the Impact of Energy Audits and EMS

Identification of Challenges

A: Inventory of needs and requirements of NAs

Survey/interviews with NAs



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



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Identification of Challenges

A: Inventory of needs and requirements of NAs

Survey/interviews with NAs



- 11 challenges
- 27 sub-challenges

non-SMEs

1



Limited resources for transposition

2



Identification of obligated companies

3



Ensuring compliance

4



Quality of audits

5



Compromise between reporting and monitoring

6



Enhancing the uptake of measures

SMEs

7



Creation of support mechanisms

8



Limited available resources

9



Guiding SMEs to action

10



Raising awareness on opportunities

11



Non-energy benefits

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



Challenges in transposition of Art. 8 EED



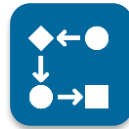
4 Quality of audits

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

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.



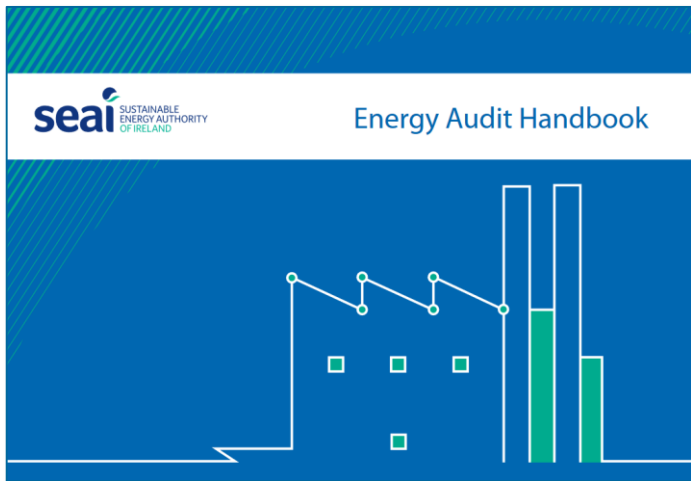
SEAI Energy Audit Handbook



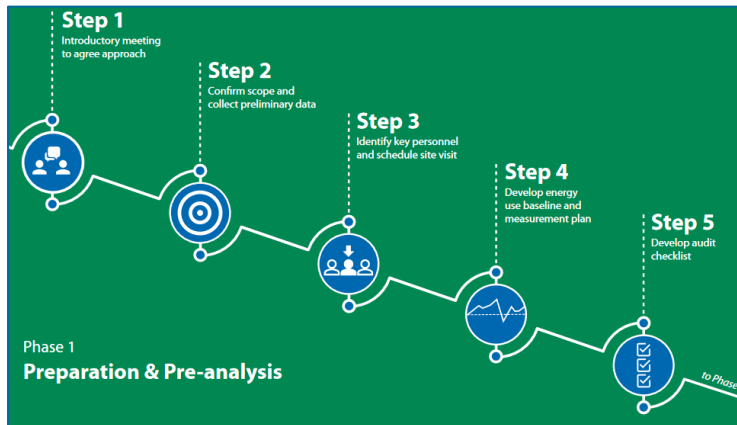
4



Quality of audits



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



6. Financial Analysis of Opportunities

are included in spreadsheet simplify their application, 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	125,000
-	56,522	55,000	47,826	
+	96,149	55,000	41,588	
+	42,739	55,000	36,163	
+	37,164	55,000	31,446	
-	32,316	55,000	27,345	
Life Cycle Cost (€)	317,890		309,368	



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5 Compromise between reporting effort and monitoring



Form of submission

- PDF
- Excel
- Online form



Content of submission

- Full report
- Summary of report
- Key data



Submission support

- Guidelines
- Templates



Submitter

- Company
- Auditor

5



Compromise between reporting effort and monitoring

Example: 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 ₂ -Emission [tCO ₂]
Stromverbrauch Inland		<input type="text"/>		<input type="text"/>	0	0,00
Nah-/ Fernwärme		<input type="text"/>		<input type="text"/>	0	0,00
Fernkälte		<input type="text"/>		<input type="text"/>	0	0,00
Erdgas		<input type="text"/>		<input type="text"/>	0	0,00
Heizöl leicht	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> l	<input type="text"/>	0	0,00
Heizöl schwer	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> l	<input type="text"/>	0	0,00
Schiffslöl (Binnenschifffahrt)	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> l	<input type="text"/>	0	0,00
Flüssiggas	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> kg	<input type="text"/>	0	0,00
Steinkohle	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> kg	<input type="text"/>	0	0,00
Braunkohle	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> kg	<input type="text"/>	0	0,00
Ottokraftstoffe	--- Bitte wählen ---	<input type="text"/>	<input type="text"/> l	<input type="text"/>	0	0,00

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

Business platform Austria (USP)

Audit: Daten

Bereich: Gebäude auditert: nein

Bereich: Prozess auditert: nein

Bereich: Transport auditert: 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
- information, easy to process

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



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6 Enhancing the uptake of measures

There are various support mechanisms to encourage companies to improve energy efficiency, either based on informational instruments, financial incentives or obligations.



Obligation of implementation

For energy intensive companies:

- At least one measure
- All cost-effective measures

Minority of MS



Financial incentives

- Funding
- Grants
- Tax reliefs

*Funding and grants
in most of the MS*



Information

- Homepage or tool informing about financial schemes
- Campaigns, workshops...
- Hotline



6 Enhancing the uptake of measures

Improve industrial energy efficiency by **using energy thresholds to mandate companies to implement measures**

Under the Environmental Management Activities Decree, the Netherlands obliges companies which consume more than 50 000 kWh of electricity or 25 000 m³ of natural gas to take energy-saving measures with a payback period of 5 years or less. The regulation was implemented independent from the energy audit obligation.



Website of the Dutch NA



Rijkswaterstaat
Ministry of Infrastructure and
Water Management

Environmental Management Activities Decree Article 2.15

- (1) [...] takes **all energy-saving measures** with a **payback of five years or less**.
 - (5) [...] not being complied with, [...] **oblige** [...] to carry out investigation.
- (2) [...] **report to the competent authority** no later than 1 July 2019 and thereafter once every four years what energy-saving measures have been taken.

https://wetten-overheid-nl.translate.google/BWBR0022762/2022-09-21/?_x_tr_sl=nl&_x_tr_tl=en&_x_tr_hl=de&_x_tr_pto=wapp#Hoofdstuk2_Afdeling2.6_Artikel2.15



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6 Enhancing the uptake of measures

Provide an overview about available schemes by implementing an interactive funding finder

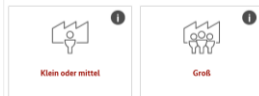
In Germany, the NA implemented an online funding finder to help visitor deal with the large number of funding opportunities (Förderwegweiser Energieeffizienz). The guide is interactive and filters the available funding schemes to the specific requirements (such as company size or type of technology) of the user.



Country practices

1. SME or not?

Wie groß ist ihr Unternehmen?



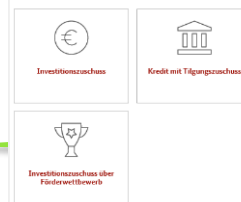
2. What for?

Wofür suchen Sie eine Förderung?



3. Type of funding?

Welche Förderung möchten Sie nutzen?



4. Matching funding

Ergebnis

Zu Ihrem Vorhaben passt dieses Förderprogramm:



Bundesförderung für Energieeffizienz in der Wirtschaft: Energiebezogene Optimierung von Anlagen und Prozessen (Modul 4) – Zuschuss

Wer wird gefördert?

Unternehmen aller Branchen und Größen einschließlich kommunale Unternehmen

Was wird gefördert?

Optimierung von Produktionsanlagen und -prozessen (u. a. Abwärmennutzung) auf Basis eines Einsparkonzepts

Wie wird gefördert?

Man erhält einen direkten Investitionszuschuss über das BAFA

Wie hoch ist die Förderung?

40 % der förderfähigen Kosten; max. 700 € pro eingesparter Tonne CO₂ und max. 10 Mio. € pro Vorhaben

Voraussetzung:

- Erstellung eines Einsparkonzeptes durch einen qualifizierten Energieberater, das ihr Vorhaben abbildet
- Amortisationszeit ohne Förderung mindestens 2 Jahre

ZUM FÖRDERPROGRAMM



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7 Creation of support mechanisms

There are various support mechanisms to encourage SMEs to carry out energy audits and to implement energy efficiency measures, based on either informational instruments or financial incentives.

Underline the added value by **informing about non-energy benefits of energy efficiency**

As part of the Horizon2020 Multiple Benefits project, several workshops were held to educate stakeholders about the variety of competitive advantages that energy efficiency measures can bring to companies beyond GHG savings. One of the workshops was held by the National Technical University of Athens (NTUA) in February 2020.



Webinar on on-energy benefits at NTUA



What energy saving actions create the greatest business value?

Systematically answering this question drives the Multiple Benefits process

Let's explore a project example: How does an upgrade to a company's metal plating process impact its competitive advantage?

<https://www.mbenefits.eu/>

Challenges in transposition of Art. 8 EED



8 Limited available resources

Limited financial and human resources make it harder for NAs to interact with SMEs and vice versa.

Engaging SMEs by **having a regional information platform**

The Bavarian state platform implemented a so-called energy atlas (Energie-Atlas), an online information hub that comprises a variety of information materials on energy. It includes best practice examples for both households and industry, as well as efficiency tips and interactive maps of the region.



Energy Atlas Bavaria



Facilitate information access by **bundling all relevant information in one place**

The website of the Maltese Energy and Water Agency covers relevant information on energy efficiency: Available support schemes in the field of energy efficiency are listed, graphical explanations about the application process and in some cases video tutorials are included. Each scheme contains a general overview text, a FAQ section, a guideline on how to apply and links to relevant forms and documents



Energy and Water Agency Malta



Challenges in transposition of Art. 8 EED



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.

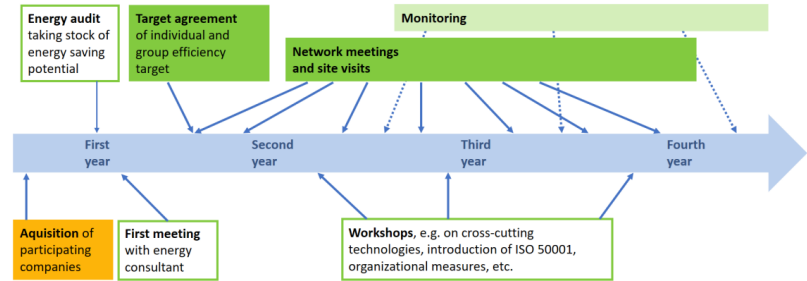
 Energy Efficiency Networks Initiative



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

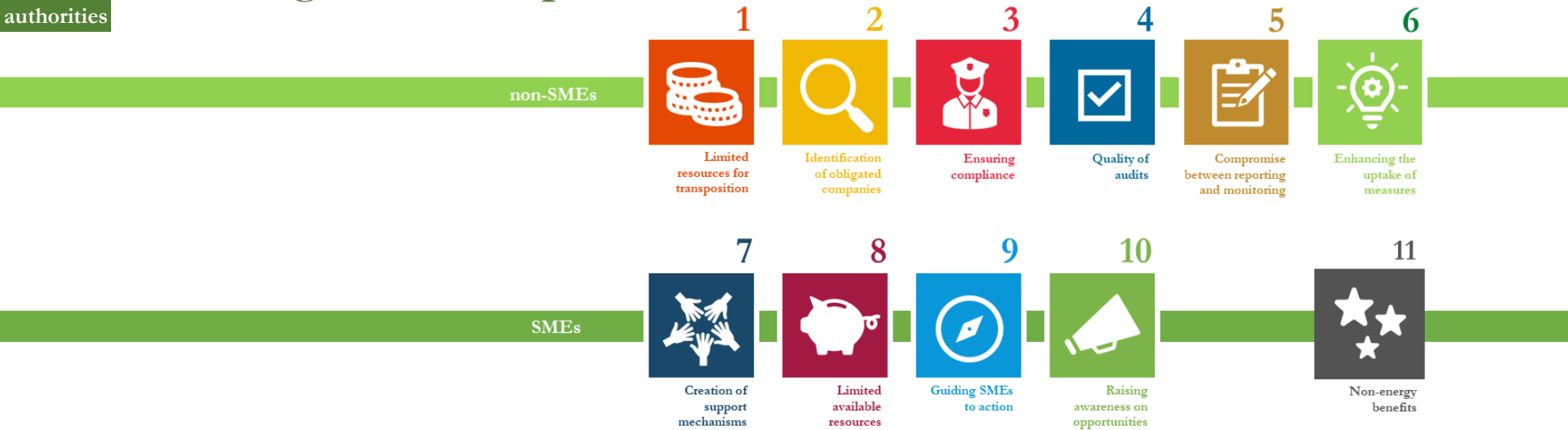
In its 4th National Energy Efficiency plan, Croatia included as a measure so-called Industrial Energy Efficiency Networks (IEEN). Some of the key elements of IEEN are to educate the management as well as employees of industrial companies in the field of energy efficiency and promote best practise projects.

 4th National Energy Efficiency plan



Source: Based on IPEEC 2017.

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... many of the good practice examples also useful for the implementation of Art. 11 of the new EED



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