# Training Module 1 – Toward ISO 50001

## EnergyEfficiency4SMEs Project

Reference: LIFE21-CET-AUDITS-EnergyEfficiency4SME/101076459

## Date, Location

Co-funded by the European Union

# ENERGY EFFICIENCY 4SMES

## A European Project

- **European Program: LIFE**
- **Length** : 36 months ( Nov 2022 - Oct 2025)
- **Total Budget** : 1,84 M€
- **Consortium** : 23 partners from 10 different countries
- **Coordinator** : Eurochambres
- **Structure of the project**: 8 WP
- **Targets** : SMEs from 3 sectors:
    - Hospitality and restaurants (NACE codes I 55 to I 56.3.0)
    - Agri-food Industry (NACE codes C10 to C11.0.7 )
    - Metals Industry (NACE codes C24 to C25.9.9)

# Three key points

EnergyEfficiency4SMEs

**How to go to ISO 50001**

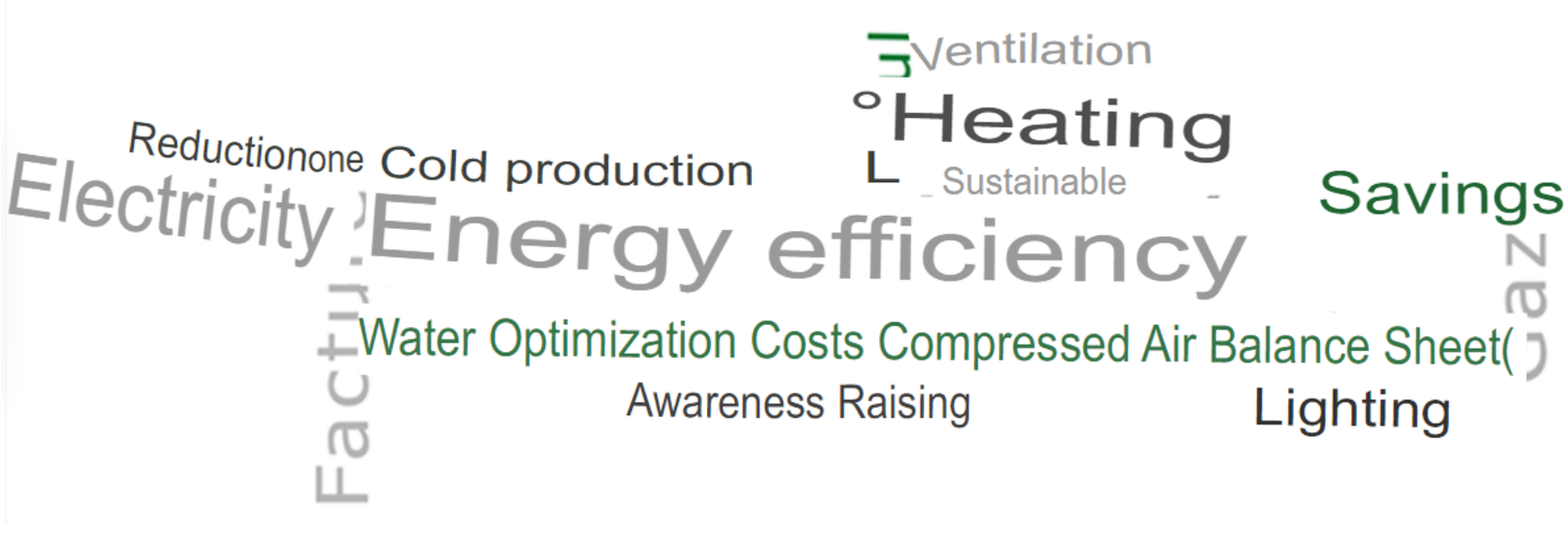
**ISO 50001 basics: standard general framework**

**Get started with ISO 50001**

# WHY GO TO ISO 50001

EnergyEfficiency4SMEs

# WHY?




Sobriety energy

Instructions and first actions aiming for 10% savings

Efficiency energy

Measurement and management of energy, actions on uses.

**Energy performance**

Energy management management with teams and employees, training and data collection : Technically my Smé in place

# How can you manage your energy performance using the ISO 50 001 standard?

EnergyEfficiency4SMEs

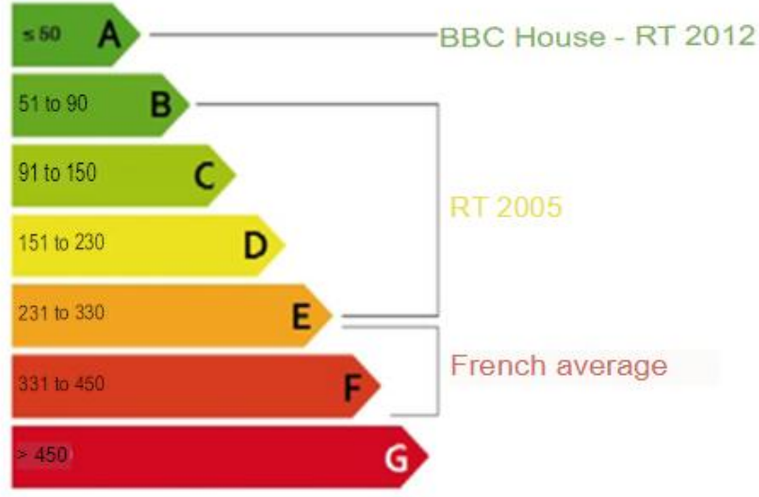
A standard dedicated to energy management

Involving an energy management system in order to improve our energy performance

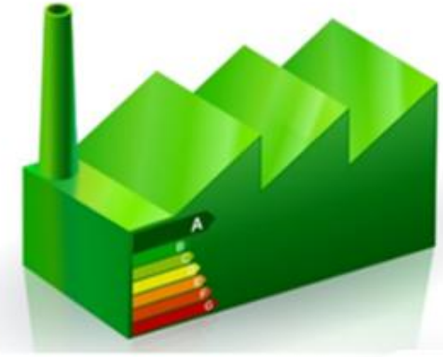

## Energy performance?

Household appliances

Buildings




Building, air conditioning, lighting, construction machinery production, etc …



# How can you manage your energy performance using the ISO 50 001 standard?

EnergyEfficiency4SMEs

| Energy efficiency... | ... Applied to compressed air... | ... and your everyday life: the car |
|---|---|---|
| Energy efficiency | Plant efficiency to obtain the best Wh/Nm3 ratio | Engine efficiency (L/100km announced by the manufacturer) |
| Use | Is compressed air the best energy carrier (pneumatic tools; pneumatic agitation)? | Can I use my bike to fetch bread? |
| Energy consumption | Consideration of operating time (can my use be stopped or reduced to a certain period?) | How can I drive more economically: gear shifting, engine braking, etc? |

# Why improve your energy performance?

EnergyEfficiency4SMEs

**In France**

## The main objectives of the Energy Transition Act passed in August 2015
## Energy efficiency plan 2022
## Volatile energy prices

-40% emissions of greenhouse gases in 2030 compared to to 1990

-30% consumption of fossil fuels in 2030 compared to to 2012

Carrying the share of energies renewable at 32% of final consumption of energy in 2030 and at 40% of electricity production

Reduce consumption final energy consumption by 50% in 2050 compared to 2012

- 50% waste landfilled looking ahead to 2025

Diversify production of electricity and lower at 50% the share of nuclear power looking ahead to 2025

# From the Sobriety Plan ... to ISO 50001

- **AT LEAST 4 REASONS TO BE INTERESTED IN SMES?**

- REASON 1
- MOVING FROM SOBRIETY/EFFICIENCY TO ENERGY PERFORMANCE

- REASON 2
- REDUCE CONSUMPTION EVEN MORE, MODERNISE PRODUCTION FACILITIES

- REASON 3
- NEW REGULATORY OBLIGATIONS 2026/27
- (CHECK IS ANY AID IS AVAILABLE)

- REASON 4
- DECARBONISATION ROADMAP
- (CHECK IS ANY AID IS AVAILABLE)

# ENERGY EFFICIENCY DIRECTIVE OF 13 SEPTEMBER 2023
# MANDATORY ENERGY AUDIT AND ISO 50001

EnergyEfficiency4SMEs

**EVOLUTIONS : tax exemption based on energy consumption**

→First energy audit BY October 2026

→OR ISO 50001 CERTIFICATION

→ISO 50001 by October 2027

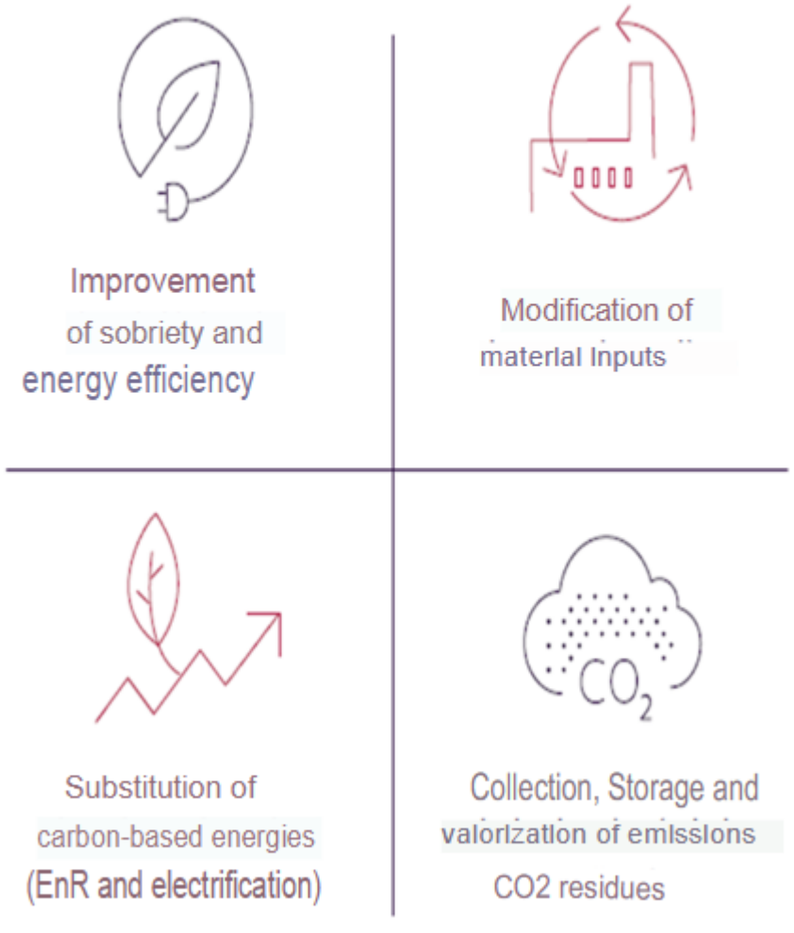
- Compulsory ISO 50001 certification: companies whose average annual energy consumption
- > 24 GWh (based on the last three years).

- Compulsory audit every 4 years: companies whose average annual energy consumption
- > 2.7 Gwh over the last three years.
- Exempted by ISO 50001 certification.

# Boost my decarbonation action

EnergyEfficiency4SMEs

The main axes of decarbonization :




## ISO 50001... from energy to carbon?

Using the EMs for carbon management :

- ✓Provides elements of measurement and analysis of energy consumption that will be used for the carbon accounting; gives the possibility to define CO2, kWh or euro objectives
- ✓ Improves the energy mix to replace low-carbon or decarbonized energies to fossil fuels
- ✓ Approach through continuous improvement and adapted to the energy/Low carbon coupling
- ✓Provides management tools, communication, awareness on which to rely to deploy its decarbonization action plan

# GENARAL FRAMEWORK

# ISO 50001

EnergyEfficiency4SMEs

# Comment piloter sa performance énergétique avec la norme ISO 50 001?

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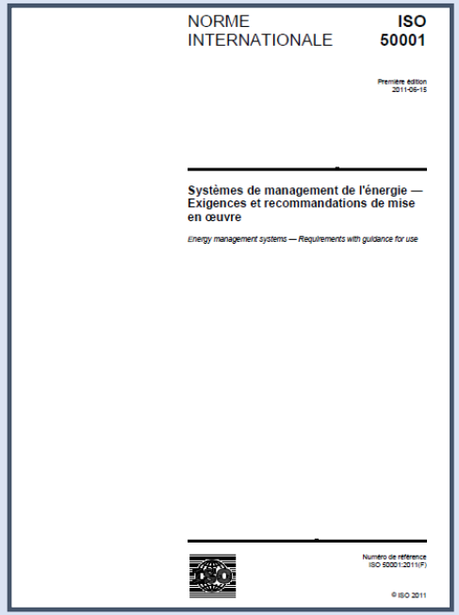
NORME INTERNATIONALE

ISO 50001

Première édition
2011-06-15

Systèmes de management de l'énergie — Exigences et recommandations de mise en œuvre

*Energy management systems — Requirements with guidance for use*

Numéro de référence
ISO 50001:2011(F)

© ISO 2011

Name: **ISO 50001** – Energy management systems

Energy performance management system

Objective: "... to establish the system and processes necessary to improve energy performance, including energy efficiency, use and consumption...".

Version 2028 currently under review

Original source , EU with the European Committee for Standardization or CEN in charge of electro technical standards; parent standard EN 16001.

# ISO 50001; what is Smé or Smen?

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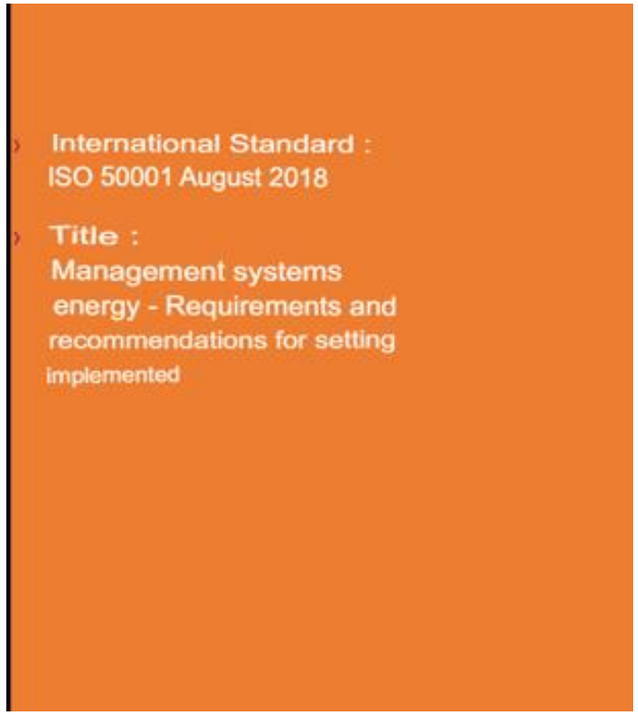
- IDENTITY SHEET

ISO 50001:2018




› Enables any organization to achieve continuous improvement in its energy performance,

› **continuous improvement of its energy performance (EP)which includes energy efficiency, use and consumption.**

› **CONTENT :**
specifies the requirements for implementing and improving a Smé

  › in compliance with an energy policy

  › and legal and other obligations with which the organization must comply.

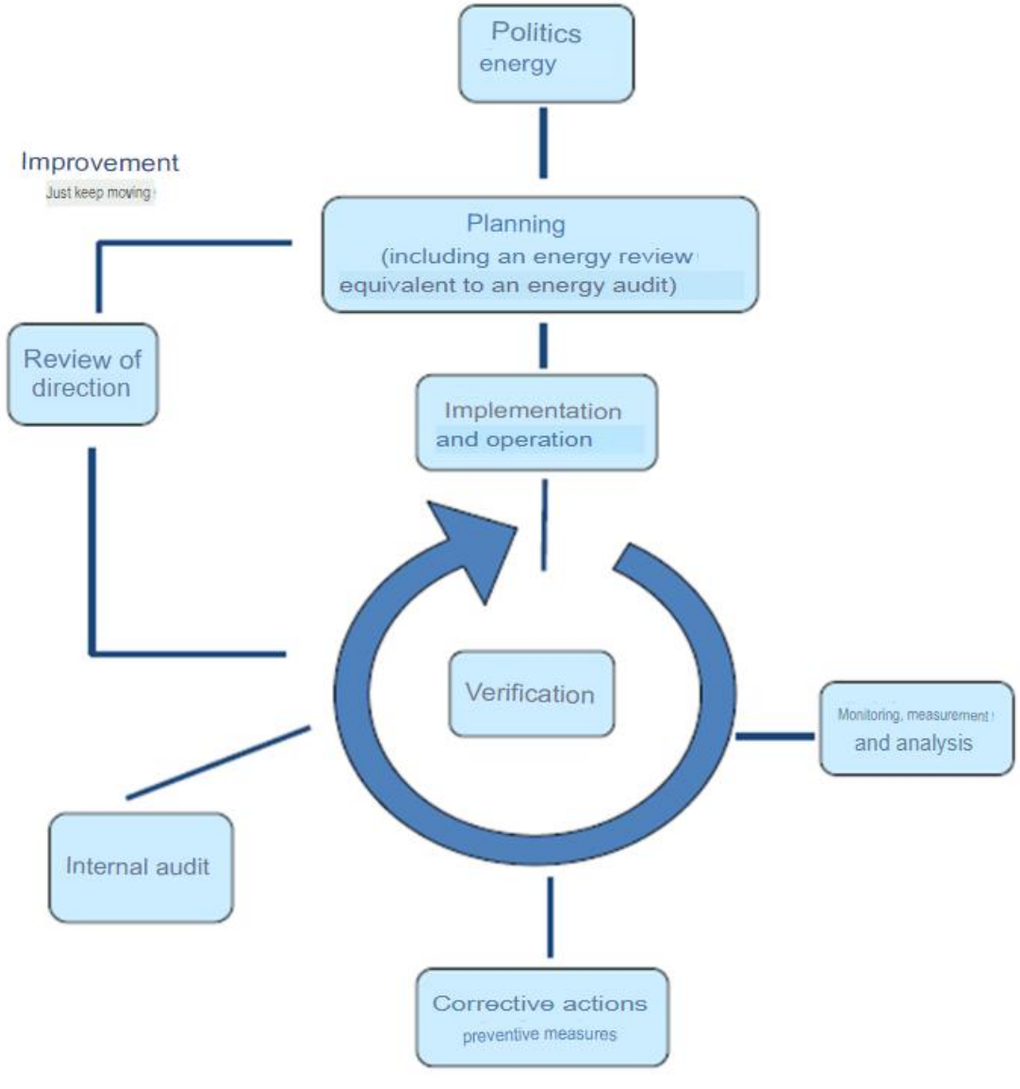
  › **CHARACTERISTICS**: does not establish specific mandatory (external) energy performance criteria.

  › **But it must be demonstrated that the EP has been achieved**

afnor GROUPE

# How can you manage your energy performance using the ISO 50 001 standard?

EnergyEfficiency4SMEs




**Objective: "...** to establish the systems and processes needed to improve energy performance, including **energy efficiency, use and consumption...".**

**ISO:** **"...explain** what we do and prove that what we explain is true..."

According to the standard, an Energy Management System is based on 2 pillars::
**TECHNICAL KNOW-HOW**
**ORGANISATIONAL and MANAGERIALKNOW-HOWAND**

# 9 KEY WORDS

EnergyEfficiency4SMEs

- ★ perimeter and DA = my address and activities
- ★ ENERGY TEAM
- ★ TABLE OF PEE = POTENTIAL ENERGY SAVINGS
- ★ Eu = energy use
- ★ Seu = significant energy use
- ★ RIF=relevant influencing factor
- ★ EPI=Energy Performance Indicators
- ★ Consumption REF OR REFERENCE SITUATION
- ★ METERING PLAN or measurement plan

# ISO 50001: 70% technical and 30% system energy performance standard

EnergyEfficiency4SMEs

Continuous improvement

- SMÉ (must be relevant, adequate, effective)

-Energy performance is to be demonstrated in the new version!

# 70% technical/organizational and 30% system

EnergyEfficiency4SMEs

4 - Organizational context

4.1 - Understanding the organization and its context

4.2 - Understanding the needs and expectations of interested parties

4.3 - Determining the Da of the energy management system

4.4 - Energy management system

5 – Leadership

5.1 - Leadership and commitment

5.2 - Energy policy

5.3 - Roles, responsibilities and authorities wit the organization

6 – Planning

6.1 Actions to be taken in response to risks and opportunities

6.2 Objectives, energy targets and planning of actions to achieve them

6.3 Energy review

6.4 Energy performance indicators

6.5 Energy baseline

6.6. Planning energy data collection

7 – Support

7.1 - Resources

7.2 - Skills

7.3 - Raising awareness

7.4 - Communication

7.5 - Documented information

8 - Carrying out operational activities

ınning and operational controls

sign

chasing

9 - Performance evaluation

9.1 - Monitoring, measuring, analyzing and evaluating of regulatory compliance and energy and MSE performance

9.2 -Internal audit

9. 3 - MANAGEMENT review

10. Improvement

10.1 - Non-conformity and corrective actions

10.2 - Continuous improvement

EnergyEfficiency4SMEs

HLS: a common foundation
strongly inspired by ISO 26000

an approach by the
risks and its
opportunities

A manual no
required but well
useful!

Leadership

Understand the issues and integrate
the needs of the interested parties

A real improvement in
the energy Performance:
measured and demonstrated!

Signale

# Chapter 4: Issues, needs and expectations of interested parties

EnergyEfficiency4SMEs

## Understanding the organization's context

**Identify the external and internal challenges :**

- market trends,
- Climate conditions and energy sources
- Climate change
- Decarbonization in Europe ,
- Increase in primary energy sources
- ...and which may have an impact on the organization's purpose.

**PIP's relevant stakeholders and their expectations:** investors, all employees, subcontractors, collaborators linked to the use of Energy, public authorities, financiers, customers, etc.

EnergyEfficiency4SMEs

## Management as a committed leader

- Must demonstrate leadership by :

1. an energy policy, objectives, energy targets consistent with the strategic direction

2. an energy management team responsible for the implementation of implementation of the EMS

3. the impetus for staff to contribute to the EMS

4. support for middle management in their fields respective

# A.5.1 Leadership et engagement

EnergyEfficiency4SMEs

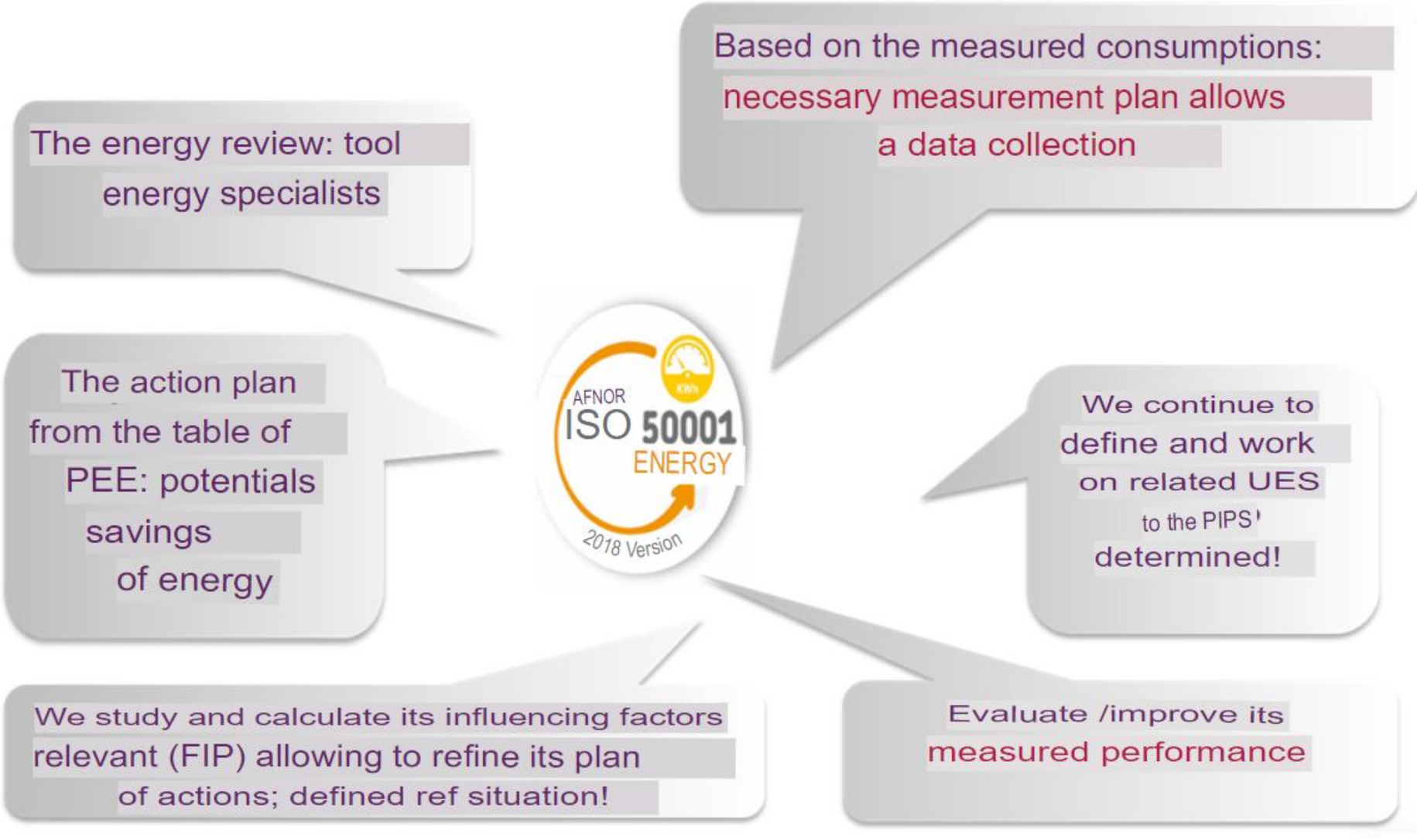
Management has **overall responsibility** for meeting the requirements of this document. Even if it delegates some of its responsibilities, IT MUST BE OVERALL RESPONSIBLE FOR THE RESULTS.

**When communicating with the organization's staff, management can emphasise the importance of energy management through actions aimed at involving employees, such as:**

**Empowerment**
**Motivation**
**Recognition**
**Training**
**BONUSES**
**Participation.**

# ISO 50001 technical specifications

EnergyEfficiency4SMEs



EnergyEfficiency4SMEs

| | |
|---|---|
| Step 1 | • Field of application and scope |
| Step 2 | * Engagement and appointment of a manager<br>energy |
| Step 3 | • Energy review |
| Step 4 | * Energy consumption/situation |
| Step 5 | * Influencing factors and IP e |
| Step 6 | * Definition of Objectives/targets |
| Step 7 | * Formalization of the action plan |

**Step 8: Training/COM/Awareness and Maintenance**

# The reference energy situation

EnergyEfficiency4SMEs

- "The organization must establish reference energy situations on the basis of the information obtained during energy reviews (see 6.3), taking into account an appropriate period. »
- When the organization has data indicating that relevant factors have an important impact on energy performance, the body must perform the adjustment of the values of the energy performance indicators and the corresponding reference energy situations.

NOTE:

- Depending on the nature of the activities, the adjustment can be a simple operation or a procedure more complex.
- Contact your energy professional…

# Manage and improve the energy performance of your activities

EnergyEfficiency4SMEs

§ 10.2 Continuous improvement

The organization must continuously improve the relevance, adequacy and the effectiveness of the EMs. The organization must demonstrate the continuous improvement of energy performance.

# Extract from the Afnor sheet on line

EnergyEfficiency4SMEs

**Improvement in EP if :**

★ An improvement in the BPI / reference situation(s)

★ An improvement in the defined BPI/targets

★ Stabilisation of the IPe/targets

★ An increase in energy consumption due to an increase in activity, with an improvement in the EPI

★ An improvement in energy use for equivalent or increased consumption

★ An improvement in the reliability of the data, consolidating the measurement of energy performance

**No improvement in EP:**

If the EP deteriorates for some IPé and improves for others, we will take into account :

- management's will,
- its strategy, its context,
- the actions/means implemented as part of the SMé
- the justification given for not achieving performance.

If there is no EP improvement, if the justification for not achieving the EP is not provided or is not relevant, **then the audit team may formalize a major non-conformity.**

**This also applies to SMé unable to provide data enabling a decision to be made on the EP.**

# GETTING STARTED WITH ISO 50001 (FEEDBACK AND SOUND READING)

EnergyEfficiency4SMEs

1.A strategic decision by the management that follows and sets the objectives

2.Human and material resources dedicated to the project

3.A technical approach in 4 steps

- An action plan including awareness-raising and communication

Energy analysis and metrological from the site: ITEM 1 review energy

Identification of influencing factors and IPE: ITEM 2 review energy

Identification of the points of measurement and advice instrumentation: Counting plan

identification and sustainability of sources of savings Objectives and targets : POINT 3 energy review

EnergyEfficiency4SMEs

# NEXT STEP TEAM ENERGIE
# EXAMPLE: mechanical SME

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Arnaud L…..
Manager

Pierre R…..
Winding manager

Martine K……
HSE Agent

François B……
*Maintenance & HSE managment*

Philippe H…….
Assembly managment

Michel G…….
Platform Menagment

David F……
Team Leadr
Maintenance (Electric)

Patrick S…..team leader
Maintenance
(Mechanical)

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# The PEE table:What is it?
# (extract from OPCO Smé CCI BFC)
# A TABLE

- all possible projects:
  Applicable to your practices and, above all, your SEUs, even projects that your management will never accept qui étudie toutes les opportunités d'amélioration possibles
- technique et financier:
  - Incluant les ROI
- A droite duquel critères de hiérarchisation vos futurs choix d'actions
- Qui précède votre plan d'actions

# Potential for energy savings

| Action | Position concerned | Consumption starting point | Reduction | Reduction in kWh | Economy in € | Investment | Time of Gross Return | Phase | |
|---|---|---|---|---|---|---|---|---|---|
| Awareness-raising of staff and users | Global | 4134056 | 3% | 124022 | 6822 | 0 | Immediate | | |
| Awareness-raising of kitchen staff | Kitchen | 156578 | 3% | 4697 | 258 | 0 | Immediate | Shortterm | 10to 15 % |
| Cleaning of ventilations | Ventilation | 197100 | 5% | 9855 | 637 | 0 | Immediate | | |
| Insulation of crawl spaces | Heating | 1134065 | 2% | 22681 | 997 | 10000 | 10 | | |
| Replacement of dichroic spotlights by LEDs | Pairing | 89681 | 80% | 71744 | 4634 | 10000 | 2 | | |
| Condensing gas boiler | Heating | 1134065 | 30% | 340220 | 14949 | 50000 | 3 | | |
| Variable speed motors | Heating | 1134065 | 5% | 56703 | 2491 | 8000 | 3 | | |
| Heating / Ventilation / Air Conditioning management Systems | HVAC | 2054165 | 15% | 308125 | 16949 | 75000 | 4 | | |
| Replacement of T8 tubes by T5 | Lighting | 286534 | 40% | 114614 | 7403 | 45000 | 6 | | |
| Solar DHW | DHW | 917001 | 30% | 275100 | 12088 | 120000 | 10 | Medium term | 20 to 30% |
| Hygrovariable VMC | Ventilation | 197100 | 20% | 39420 | 2546 | 30000 | 12 | | |
| Lighting management systems | Lighting | 77500 | 15% | 11625 | 751 | 10000 | 13 | | |
| Variable speed motors | Ventilation | 197100 | 5% | 9855 | 637 | 10000 | 16 | | |
| Insulation of terrace roofs (Main building) | Heating | 1134065 | 5% | 56703 | 2491 | 40000 | 16 | | |
| Dual flow VMC with heat recovery | Ventilation | 197100 | 20% | 39420 | 2546 | 50000 | 20 | | |
| External wall insulation | Heating | 1134065 | 10% | 113407 | 4983 | 120000 | 24 | | |
| Economical equipment in the kitchen | Kitchen | 212029 | 5% | 10601 | 583 | 20000 | 34 | Long term | 40 to 50% |
| VRV cold production | Cimatization | 723000 | 10% | 72300 | 6240 | Ex1220000pCOEMS 35 s CCCFB 020 | | | |

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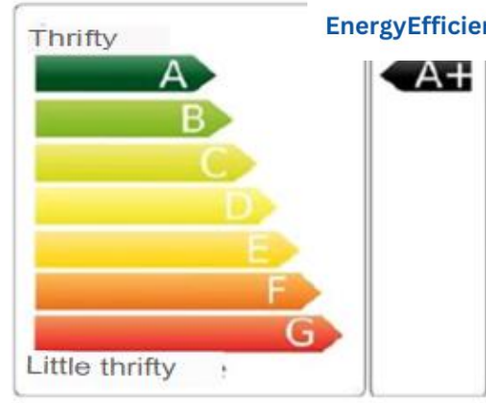
## ENERGY MANAGEMENT: REDUCE WASTE

# Cardinal rules for energy




1. Save Money the lighting

2. Adapt heating and air conditioning

3. Report the leaks

4. Stop the equipment useless

# ISO 50001 Best practices – 18 exemple sheets

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The document "ISO 50001 best practices" describes 18 actions implemented at industrial sites in France, corresponding to the various key chapters of ISO 50001 (IPé, awareness, measurement plan, operational control, corrective measures). These best practices, which help to improve the efficiency of SMé and the energy performance of sites, can easily be replicated.

8 actions emanate from the Afnor and CCI BFC Energy Clubs, which helped create this document

Among the sheets in particular :

- ✓ Monitor the consumption of utilities
- ✓ Reduce the energy heel and create an Ipe
- / Several fact sheets on the involvement of the Management, the staff and the intermediate management
- ✓ Several sheets on sheets on data analysis, to evolve indicators, properly identify the influential factors
- ✓ Prioritize risks and opportunities …
- ✓ Etc.…..

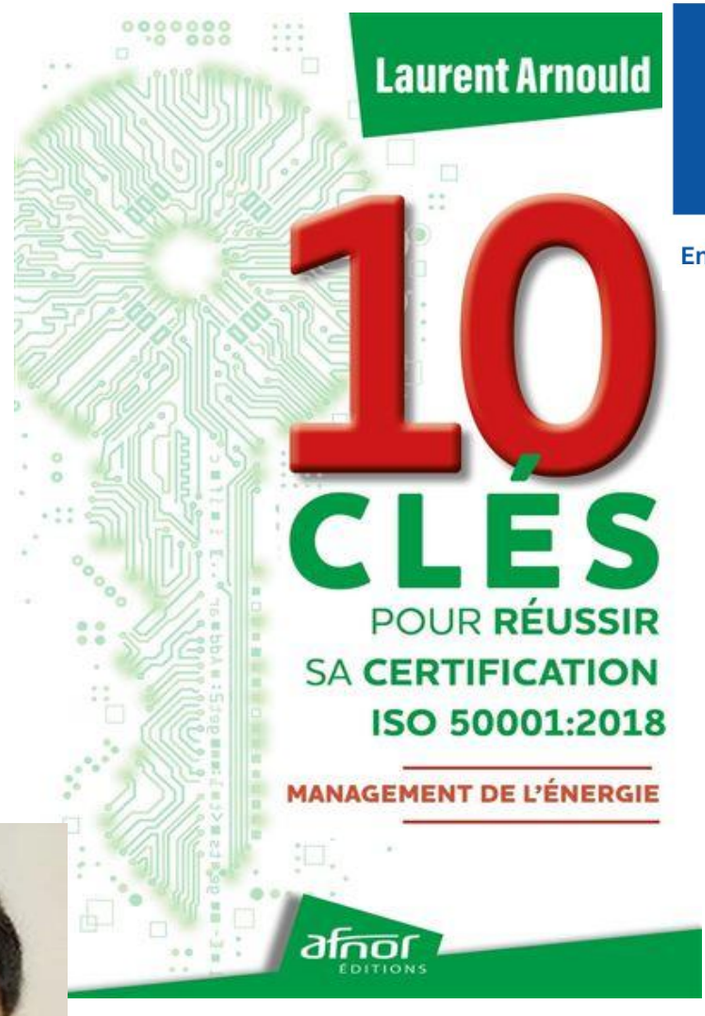
**+ REPLAY WEBINAIRES AFNOR / ADEME**

Sobriété énergétique : les meilleures pratiques ISO 50001 dans l'industrie

# Feedback on collective operations in SMEs

EnergyEfficiency4SMEs

A simple, practical book that will help energy efficiency players and integrated management system managers understand the requirements of ISO 50001:2018 and provide them with methods and tools to build an EMS tailored to their organization.
A must-read
Afnor editor




EnergyEfficiency4SMEs

ONLY for FRENCH partners:
a book recommendation!

# Sources

EnergyEfficiency4SMEs

- ★ Tous documents « perf » issus des opérations collectives avec CCI BFC
- ★ Nombreux Extraits des sensibilisation effectuées en région AURA avec les CCI AURA

- ★ Dossier bonnes pratiques à télécharger sur ADEME
- ★ Etudes AFNOR sur site Afnor Energies
- ★ Dernier ouvrage en date « les 10 clés » plateforme Numilog : https://www.numilog.com- ISO 50001
  - sur le site d'AFNOR Editions : www.boutique.afnor.org/10-cles-iso-50001
  - sur la FNAC.com : www.fnac.com/a18788770/Laurent-Arnould-ISO-50001-2018
  - sur Amazon : www.amazon.fr/clés-pour-réussir-certification-50001

# " FINANCIAL AIDS IN FRANCE »

EnergyEfficiency4SMEs

## Support and Skills for the Energy Transition in Industry course

Adapted to all industrial companies, the Industry PACT program helps you make the transition to a low-carbon, energy-efficient future through training and support in the form of studies and coaching. It enables you to structure your approach, then helps you to choose appropriate actions and investments.

PACTE industrie
Accompagnements et Compétences

RÉPUBLIQUE FRANÇAISE
Liberté
Égalité
Fraternité

ADEME
AGENCE DE LA TRANSITION ÉCOLOGIQUE

Bourgogne Franche-Comté
atee
ASSOCIATION TECHNIQUE ENERGIE ENVIRONNEMENT

EnergyEfficiency4SMEs

# Industry PACT : support and skills development for the energy transition

PACTE industrie
Accompagnements et Compétences

What is Industry PACT?

- Aims to trigger a change of scale in the commitment of manufacturers to planning their ecological transition
- Combines the development of individual skills with a group-wide approach and industrial sites
- Brings together under a single program tried-and-tested schemes and innovative methodologies
- Supported by two key players in the industrial energy transition, ADEME and ATEE

**Over the period 2023-2026 :**

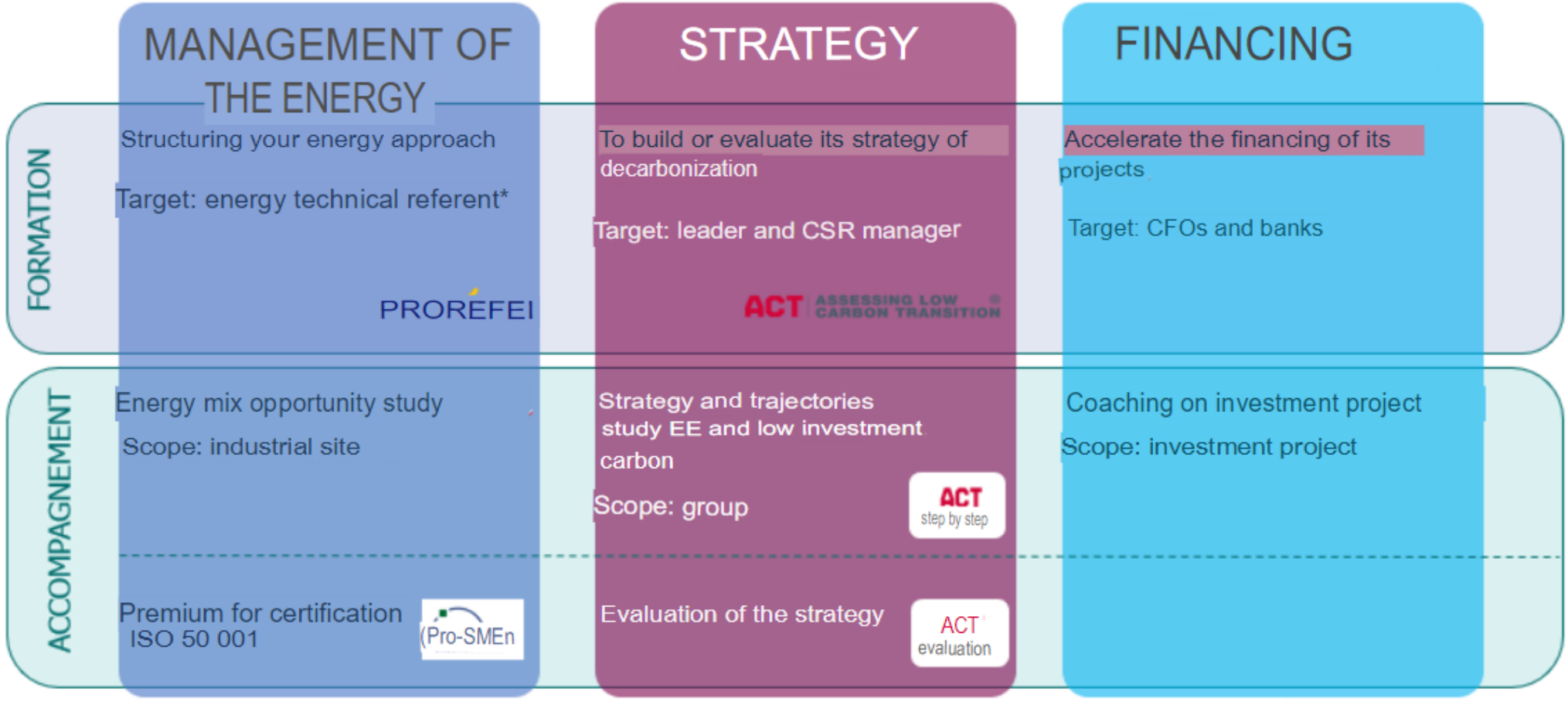
- **Budget of €49m financed by CEE**
- **Training for 2,700 industry players**
- **Support for more than 1,700 industrial sites and groups**

EnergyEfficiency4SMEs

# Industry PACT as part of the drive to decarbonise industry

EnergyEfficiency4SMEs

## A range of solutions for manufacturers adapted to their profiles and maturity to accelerate their efforts to reduce energy consumption




* Animated via the Community of Energy Referents

COMMUNITY ÉNERGIE

1. Information campaigns on the benefits of ISO 50001, highlighting success stories and the energy savings generated;
2. Payment of a bonus on request, once the ISO 50001 certificate has been obtained, financed under the CEE scheme; bonus capped at €40k.

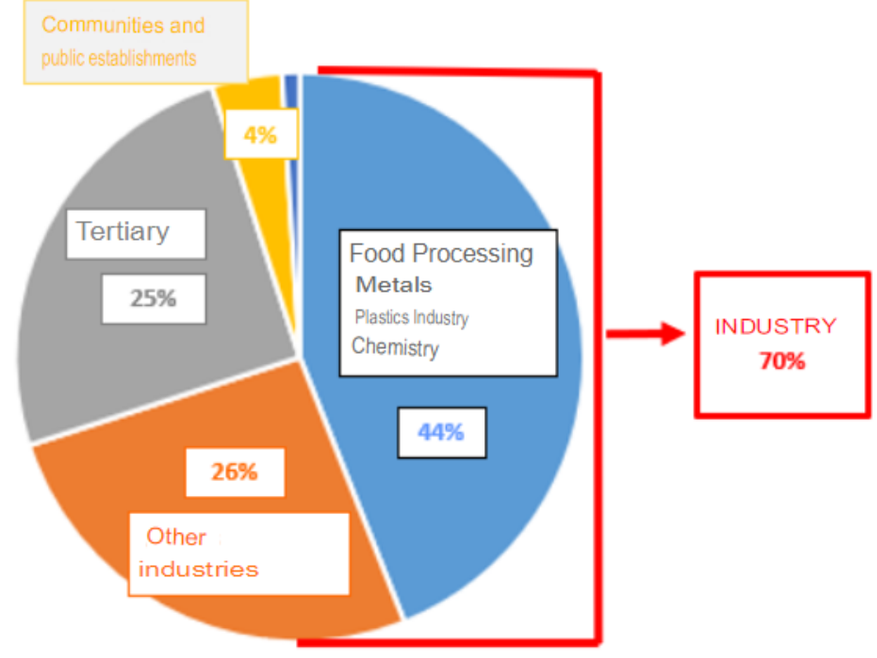
The 2018-2022 Program

As of December 31, 2022
343* registered
of which 306 received the bonus
*About 50% of the certified in France

Premium of
€40,000 for
85% of
beneficiaries
(20% of annual consumption)

**2023-2026 :**
PRO-SMEn will continue in the INDUSTRY

280 additional industrial




Source ADEME and ATEE

# Bonus PRO-SME*n* 2023-2026

➔ **Objective** To speed up the implementation of Energy Management Systems in accordance with the ISO 50001 standard

➔ Payment of a Bonus once the ISO 50001 certificate has been obtained

➔ Funds available: €11.2m to reward 280 companies (reminder: 306 companies benefited from the PRO-SMEn 2018-2022 bonus)

# Bonus PRO-SME*n* 2023-2026

| | |
|---|---|
| **How much?** | • **Bonus equal to 20% of annual energy costs for ISO 50001-certified sites**<br>• **bonus up to €40,000** |
| **Who?** | • **Companies (NAF industry codes)** |
| **How?** | **On request**<br>**On presentation of ISO 50001 certificate obtained <u>after 25.12.2022 and before 31.05.2026</u>** |

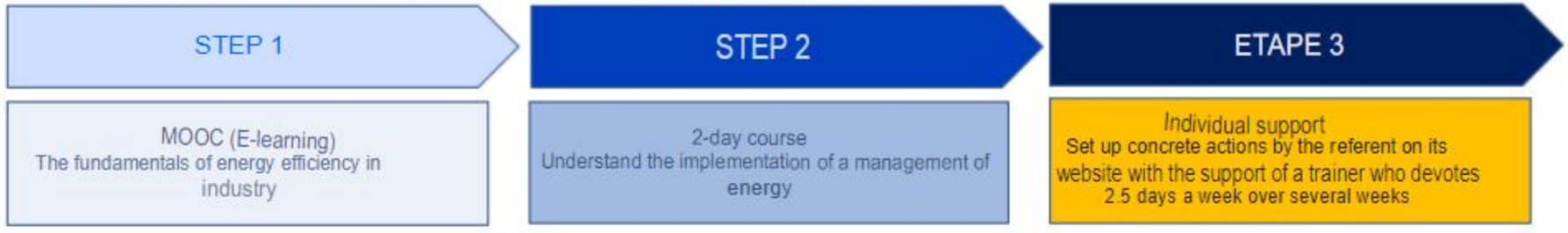
# Content of the PROREFEI Program

RÉPUBLIQUE FRANÇAISE

EnergyEfficiency4SMEs

PACTE industry
Accompagnements et Compétences

1- 3-step training course including individual on-site support for each trainee




- ✓ Educational costs: 3,700 €Excluding VAT
- ✓ Support*: 80% for companies with SIREN <300 and 40% for others**

2- Additional modules

- ✓ 6 additional modules including energy purchases and the measurement plan essential to reduce your energy bill
- ✓ Duration: 1/2 day or 1 day

/Cost : 225 €HT per 1/2 day

- ✓ Support": 100% for companies with SIREN <300 and 50% for others**

3- Free access"to the Community of Energy Referents

- ✓ Exchanges between peers and experts
- ✓ Access to a practical toolbox

* Under conditions
** Within the limit of 3 courses per SIREN

PROREFEI is also :
- 14 training organizations
- 60 skilled trainers

afoor… eqjnov nepsEn PLANAIR CCI LANDES IDSE Orozo cetim Soptinergie impulse dametis

## Methods of support

| Axes | Aid rates | Actions | Eligible plate (€ excluding VAT) |
|---|---|---|---|
| Training | 80% < 250 employees<br>40% 2,250 employees | PROREFEI | 3700 € |
| | | ACT step by step | 1000 € |
| | | ACT evaluation | 500 € |
| | | Financing | 500 € |
| Accompaniment | 80% TPE<br>70% SMEs<br>60% Mid-sized and large groups | Energy mix opportunity studies (site) | 10 000 € |
| | | ACT step by step | 30 000 € |
| | | Low-carbon investment trajectory (TIBC) | 20 000 € |
| | | Investment strategies & trajectories low carbon (Step-by-step ACT and TIBC) | 50 000 € |
| | | Investment project coaching | 5 000 € |
| | | ACT evaluation | 5 000 € |
| Certification / labelling | 20% of the plate<br>Aid capped at €40k | ISO 50 001 certification bonus | Energy expenditure annual sites beneficiaries |

PACTE industry
Support and Skills

REPUBLIC FRENCH
Freedom
Equality
Brotherhood

ADEME
AGENCE DE LA TRANSITION ÉCOLOGIQUE

Bourgogne Franche-Comté
atee
TECHNICAL ASSOCIATION ENERGY Environment

EnergyEfficiency4SMEs

- PACTE Industrie
https://agirpourlatransition.ademe.fr/entreprises/demarche-decarbonation-industrie/pacte-industrie

- PACTE Industrie Training
https://formations.ademe.fr
www.prorefei.org

- PACTE Industrie aids
https://agirpourlatransition.ademe.fr/entreprises/aides-financieres/2023/pacte-industrie-parcours-accompagnement-competences-transition-energetique-0

- Bonus PRO-SMEn
https://pro-smen.org

- ACT Initiative
https://actinitiative.org/fr/

- Contrat Chaleur Renouvelable
https://agirpourlatransition.ademe.fr/entreprises/aides-financieres/2024/contrat-chaleur-renouvelable

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