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Note for the trainer (1/2)

- This training can be carried out 'Live' or as a trainer-led online training event. For online training the following tools could be used: Mentimeter, Slido, Padlet, Jamboard, (collaborative digital whiteboard).
- The training should be **interactive** – with the aim that participants will actively contribute and learn both from you and each others' experience. Interactive elements are marked with the symbol at the right.
- Some slides contain notes with additional explanation and/or extra material to read. The *Instructions to trainer* contain guidance and tips for using the slide.
- You can decide to hide/add slides to fit your presentation and adapt to the context.
- You will find all information about the training in the **Training Unit Information** (duration, target group, goal, etc).

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Note for the trainer (2/2)

- The target group for this Unit are Trusted Partners (or potential new Trusted Partners). The unit may also be of interest to energy auditors, energy experts, and local energy advisors.
- Do not forget to fill out the **Template Monitoring Training** and to **ask participants for feedback** with the prepared form (included in the document Template Monitoring Training).

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Note for the trainer – glossary of terms

EE	Energy Efficiency
TP	Trusted Partner
ESS	Energy Service Supplier
MB	Multiple Benefits
NEB	Non-Energy Benefit
EEM	Energy Efficiency Measure

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Multiple Benefits

Unit I
Multiple Benefits: Introduction

Date

Organisers

This project has received funding from the European Union's H2020 Coordination Support Action under Grant Agreement No. 894356.

Who are we?

Insert your own picture and contact info

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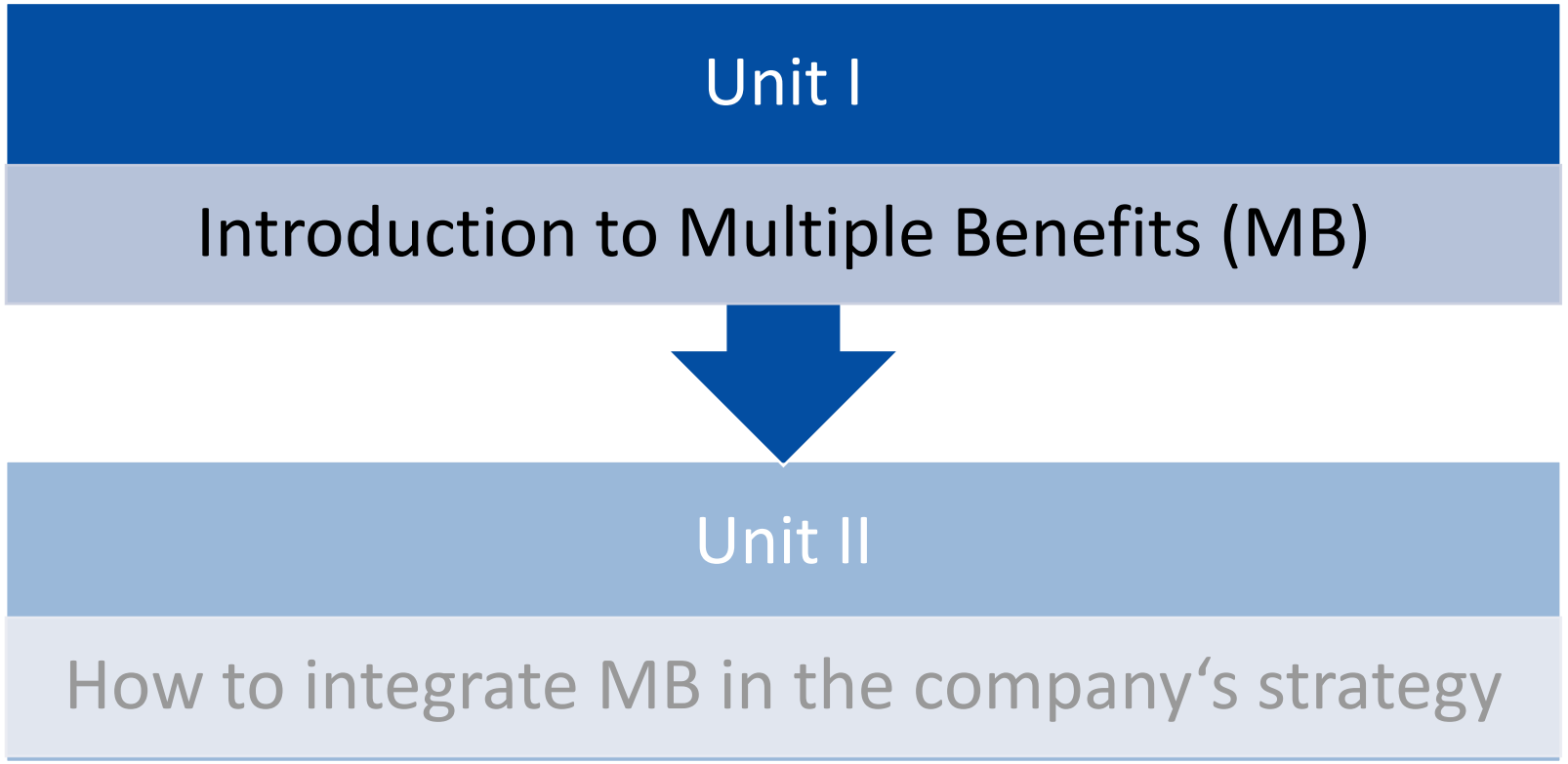
Content



Goals of unit I

- You learn what Multiple Benefits are
- You learn the importance of Multiple Benefits in the decision-making process
- You are able to apply the Multiple Benefits to concrete examples
- You are able to communicate about Multiple Benefits towards SMEs

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Defining Multiple Benefits

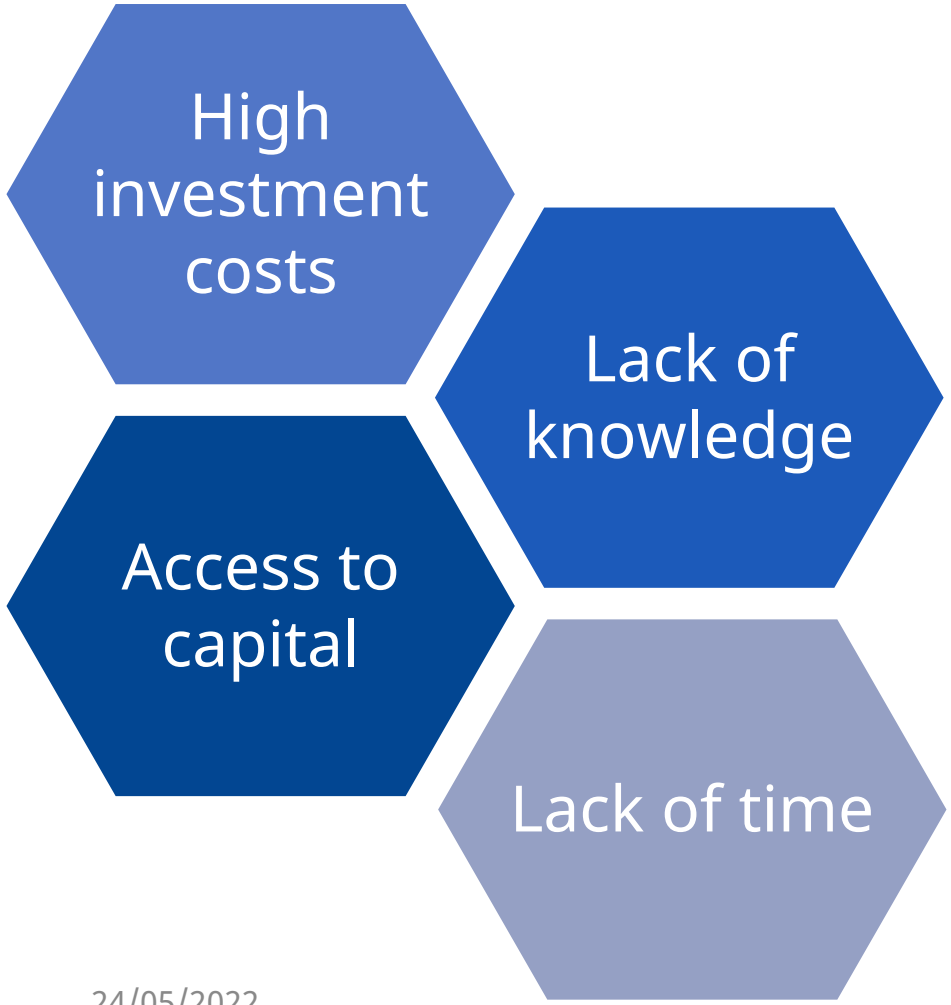
Energy Benefits:

energy and energy cost savings

Non-Energy Benefits (NEB):

Any kind of **positive environmental, economic or social effects** on all business areas of a company that can occur in addition to the energy benefits = other beneficial effects

Main barriers to Energy Efficiency (for SMEs)



But also

- lack of (or imperfect) information on cost-efficient Energy Efficiency interventions
- attractiveness, understandability and relevance of information
- **other priorities for capital investments**
- technical risk, such as risk of production disruption

Source: Therese Nehler, Non-Energy Benefits of Industrial Energy Efficiency. Roles and Potentials, 2019

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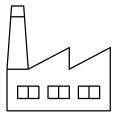
The advantages of Energy Efficiency

For the individual SME



- Reduce your company's energy costs and boost your competitiveness
- Increase the productivity and efficiency of your business
- Increase corporate social responsibility and reduce environmental /carbon impact
- Strengthen your company brand and improve your image –
  Meet customer and regulatory requirements

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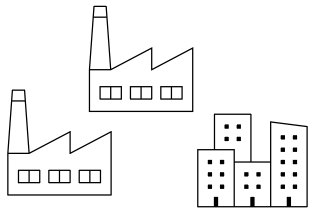
The advantages of Energy Efficiency

At the local level (Business park,...)



- Contributes to regional climate targets
- Green/sustainability image for business park
- Improved public health and well-being, e.g. from less pollution, better safety and security
- Attract new companies to the area or business park
- Local job opportunities (e.g. energy services)
- Future proof companies and business park

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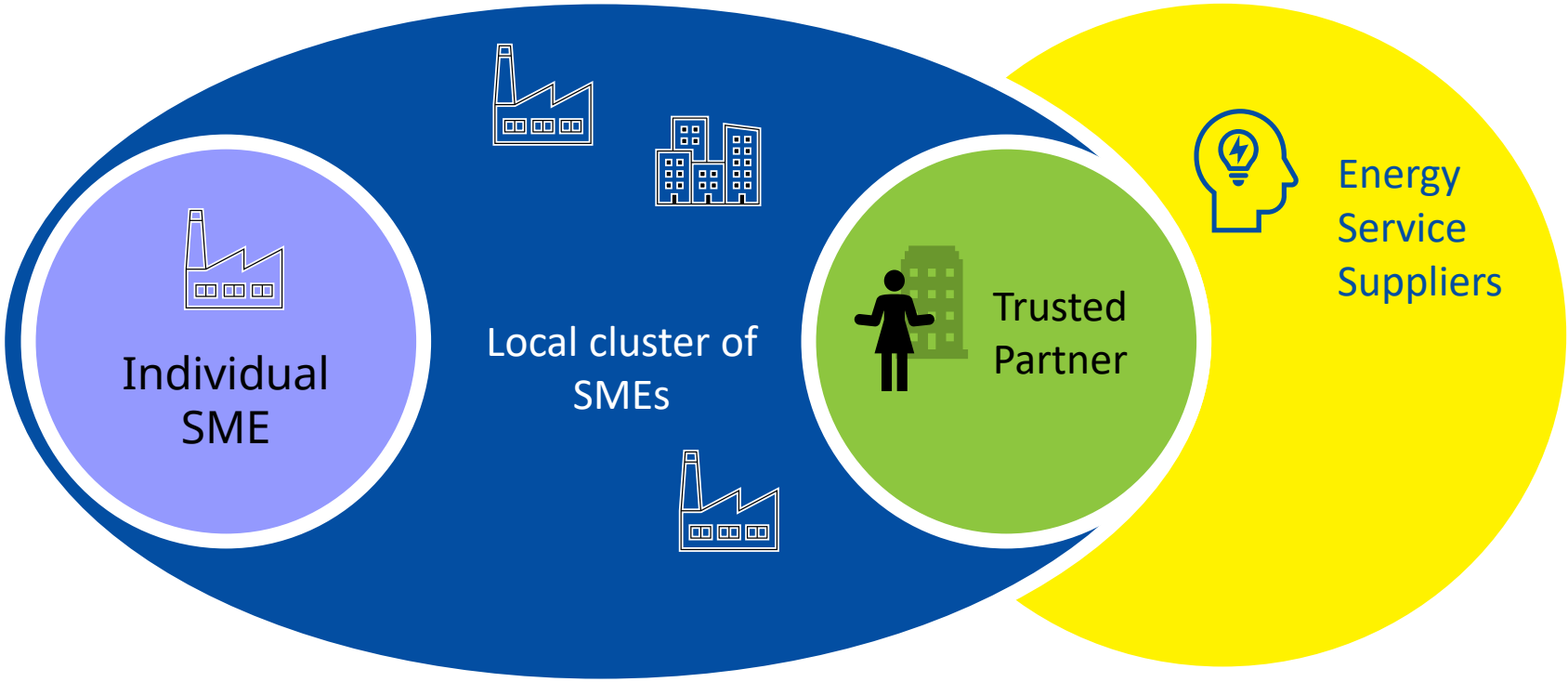
Roles of the different actors



Introduction video

Multiple benefits of energy efficiency

https://vimeo.com/371102981

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Example of Multiple Benefits

Multiple Benefits of an Energy Efficiency measure (EEM)	Replacement of old T8 tubes for LED lamps
Non-Energy Benefits	Less maintenance Better comfort/ work environment
Energy Benefits	Electricity cost savings

often overlooked

visible

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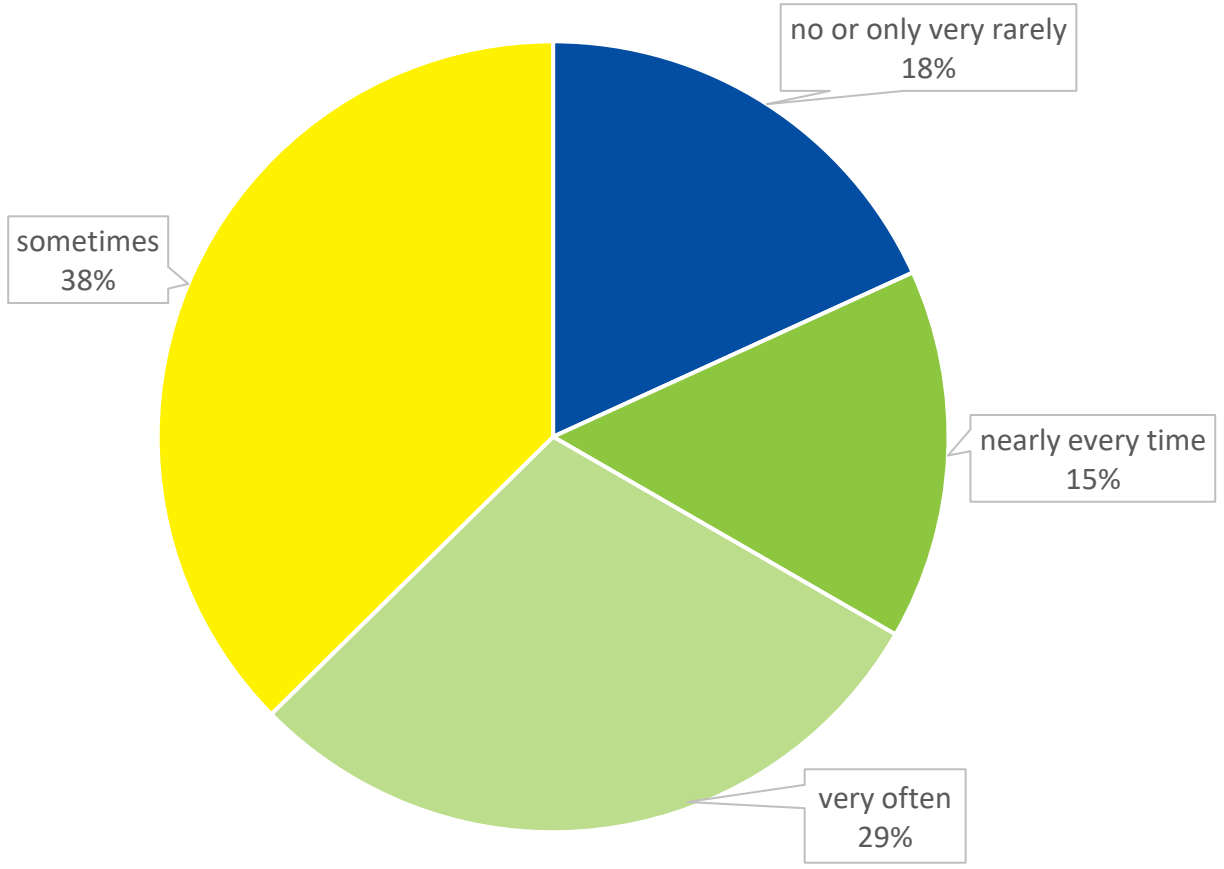
Do you consider Non-Energy Benefits (NEB) in Energy Efficiency investments? (Swiss study, N=279)



56% of the responding SMEs do not consider NEB at all, very rarely, or only sometimes

Source: Management as a Key Driver of Energy Performance – Final Report, 15 November 2017 (p 91)

Internal competition for capital in the company

Investment decisions…

- take various factors into account
- are based on strategic priorities and values, assessing the risks involved and the anticipated benefits

Energy efficiency measures…

- are often presented as a single-issue problem
- focus on ‘payback time‘, which is often not a strategical goal

Source: https://www.mbenefits.eu/about-the-project/project-summary/

How can the **importance** of investments in **Energy Efficiency measures be raised** so that they are successful compared to other priority investments?

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Can you give some examples of Multiple Benefits at company level?

Example: Optimisation of a motor system

EEMs:

- New motor IE3 30 kW instead of an old 55 kW motor
- Purchase of a new 30 kW frequency converter
- Purchase of a new pump

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Can you give some examples of Multiple Benefits at company level?

Less cooling (less wasted heat with the new motor)

Electrical energy savings

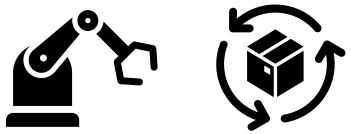
Less unplanned downtime

Less CO_2 emissions

Less noise

Less maintenance needed

Example: Optimisation of a motor system



Production

Increased production
Higher productivity
Improved equipment performance
More reliable production
Better and/or more consistent product quality
Reduced scrap/rework costs
Improved capacity utilization
Lower product losses / Increased yield
Shorter processing cycles

Operation & maintenance

Lower maintenance
Easier system operation
Reduced wear and tear on equipment/machinery
Extended life of equipment
Reduced cleaning requirements
Reduced downtime
Greater control of equipment and temperatures
Reduced need for engineering controls
Reductions in labour requirements
Reduced consumption of utilities/auxilliaries
Reduced back-up requirements

Source: Multiple Benefits List, GEAR@SME Business Case and Multiple Benefits Tool

Example 1: Industrial bakery

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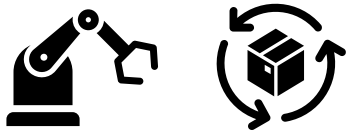

Production

Higher productivity
Improved equipment performance

Better and/or more consistent product quality
Reduced scrap/rework costs

Operation & maintenance

Lower maintenance

Reduced wear and tear on equipment/machinery

Example 2: Coating metal industry

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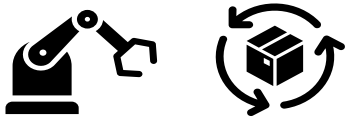
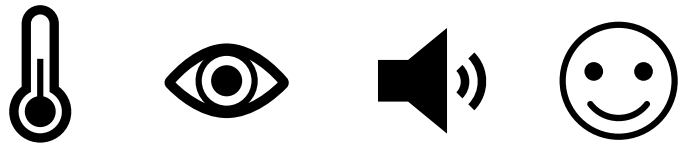


Production

More reliable production

Operation & maintenance

Reduced downtime



Work environment

Better worker safety
Reduced noise
Better lighting
Greater comfort
Better air quality
Improved temperature control
Reduced vibrations
Reduced need for personal protective equipment
Better personnel health / less illnesses
Reduced risk of accidents
Improved staff satisfaction and productivity

Source: Multiple Benefits List, GEAR@SME Business Case and Multiple Benefits Tool

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Waste

Reduced waste
Greater efficiency and control of water use
Reduced wastewater
Reduced hazardous materials/waste
Effective reutilization of waste heat
Use of waste fuel/gas

Emissions

Reduced emissions of pollutants and dust
Less dependence on future regulations
Reduced impact on the local community

Source: Multiple Benefits List, GEAR@SME Business Case and Multiple Benefits Tool

Other

Delayed or reduced capital expenditures
Reduced interest cost on capital investments
Reduced/eliminated demand charges
Reduced/eliminated rental equipment costs
Labour savings
Achieved rebates or incentives
Increased value of assets/estate
Improved competitiveness
Improved customer satisfaction
Improved employee morale and satisfaction
Reduced floor space
Decreased liability
Improved public image

Source: Multiple Benefits List, GEAR@SME Business Case and Multiple Benefits Tool

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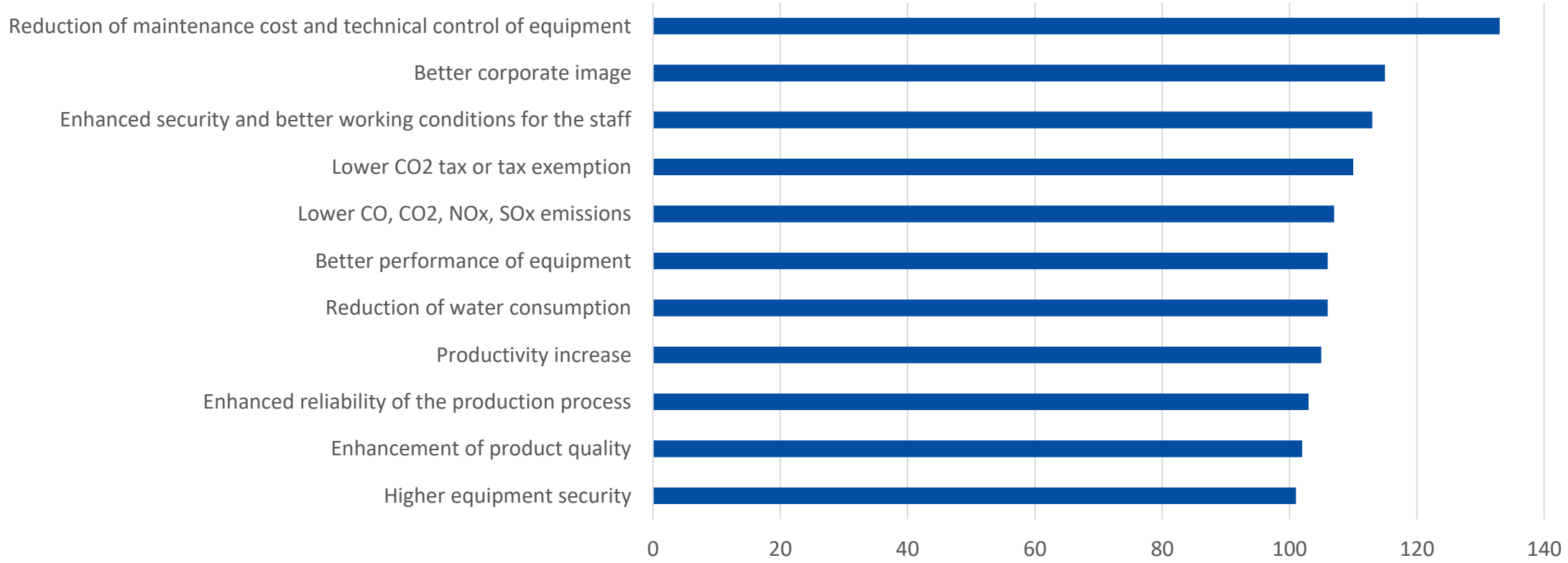
What kind of Non-Energy Benefits (NEB) are considered most frequently?

What kind of non-energy benefit (NEB) do you consider most often? (N=236)



Source: Management as a Key Driver of Energy Performance – Final Report, 15 November 2017 (Table 16)

NEB contributions to the investment process

Need to adapt the arguments!

Strategy people/
Top management,
Marketing, Sales

Profitability of the company
Market position
Competitiveness

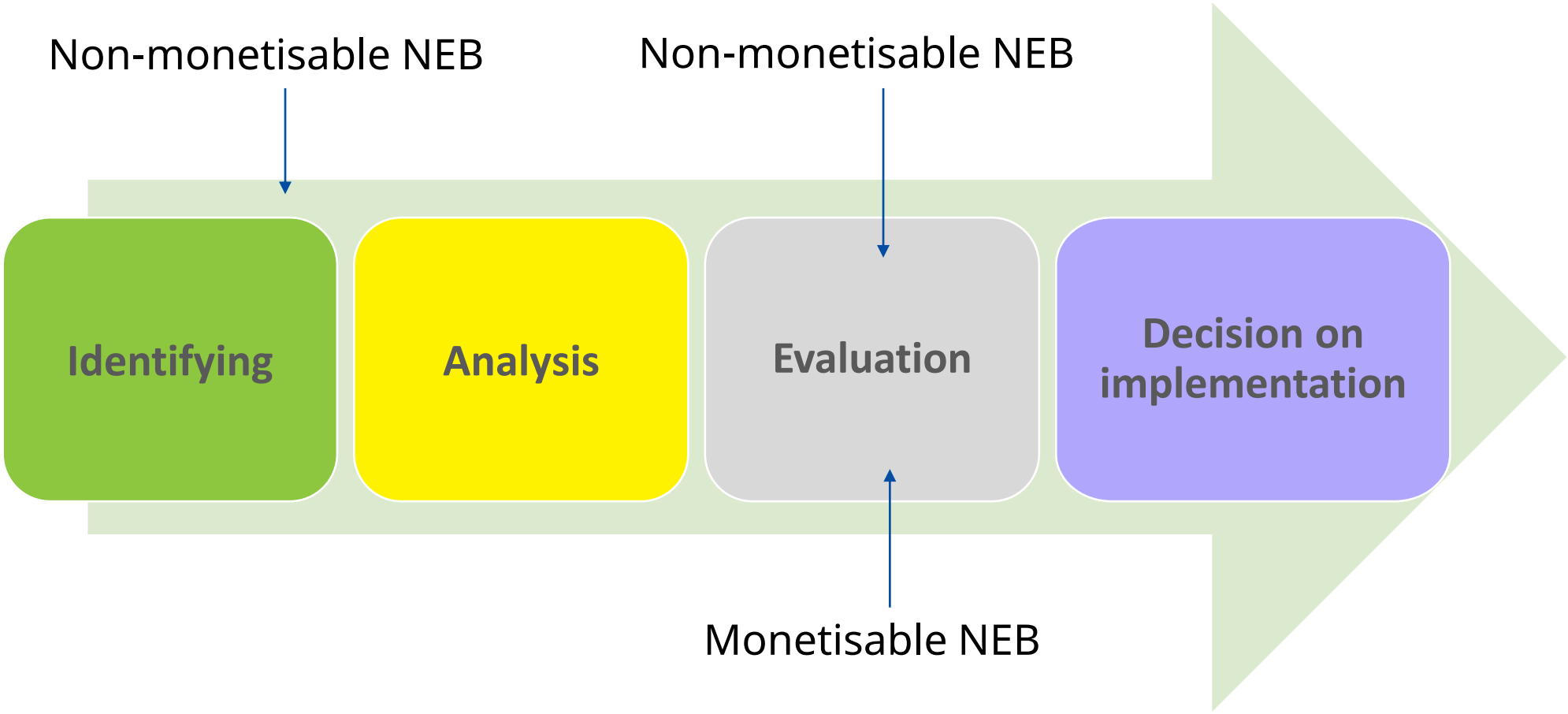
Low costs
NPV, IRR, PP

Financial
people

Production
people

Machines work smoothly
No breakdown/disruption

NEBs contributions to the investment process



Source: Therese Nehler, Non-Energy Benefits of Industrial Energy Efficiency. Roles and Potentials, 2019, Figure 17 (p91)

Example

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Furniture maker improves reputation and reduces costs by upgrading to solar thermal

Impacts on operations

Security

- Increased installation security/safety – much higher reliability compared to the old boiler

Quality

- Same level of hot water quality (parameters remain unchanged)

Impact on costs

- Reduced amount of fuel (wood). No need to assess/benchmark wood providers, check quality, moisture content, etc.

Impact on time

- Increased availability of hot water - no delays due to maintenance free system

Source: Case Study Benefits, https://www.probenefit.eu/news-resources/library/

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Furniture maker improves reputation and reduces costs by upgrading to solar thermal

Sector: Furniture manufacturer
Size: 12 employees
Location: Poland
Measure: Deployment of solar thermal collectors for hot water preparation
NEBsquantified: **T**ime savings

Investment duration (NPV, IRR): 20 years
CAPEX: 2.355 €
Discount rate: 5%

	All benefits	Energy-only benefits
Net Present Value	5.600 €	-1.578 €
Internal rate of return	26,9%	-5,4%
Simple Payback	4 years	38 years

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Take-aways

- An Energy Efficiency Measure (EEM) can often have additional positive effects on the production, the operation & maintenance, the work environment or the environment or on the brand image.
- The Non-Energy Benefits (NEBs) are often overlooked in the investment decision making process.
- NEBs can be used to gain internal support to implement an EEM (well-targeted communication).
- Some NEBs are easy to quantify/monetize, whereas others are almost impossible.
- Non-monetizable NEBs can improve the attractiveness of investments in EEMs in comparison to other investment options.

Next training

Unit II

How to introduce MB in the company‘s strategy

- Identify advantages at Energy Efficiency level and process level
- Identify advantages at company level (competitive advantage)
- How to quantify/ monetize NEB?

Questions & Feedback

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Thanks for your attention!

Multiple Benefits of Energy Efficiency

Multiple benefits of energy efficiency

- Project funded by the European Commission
- Running from 2018 till 2021
- Goal: valuing and communicating Multiple Benefits of Energy Efficiency Measures
- Tools and methodology developed and tested in 10 pilot projects

DEESME – National schemes for Energy Efficiency in SMEs

- Project funded by the European Commission
- Running from 2020 till 2023
- Goal: enables companies, especially SMEs to manage the energy transition by taking profit of Multiple Benefits from energy management and audit approaches
- Integrated Multiple Benefits tool (for SME / energy auditor)