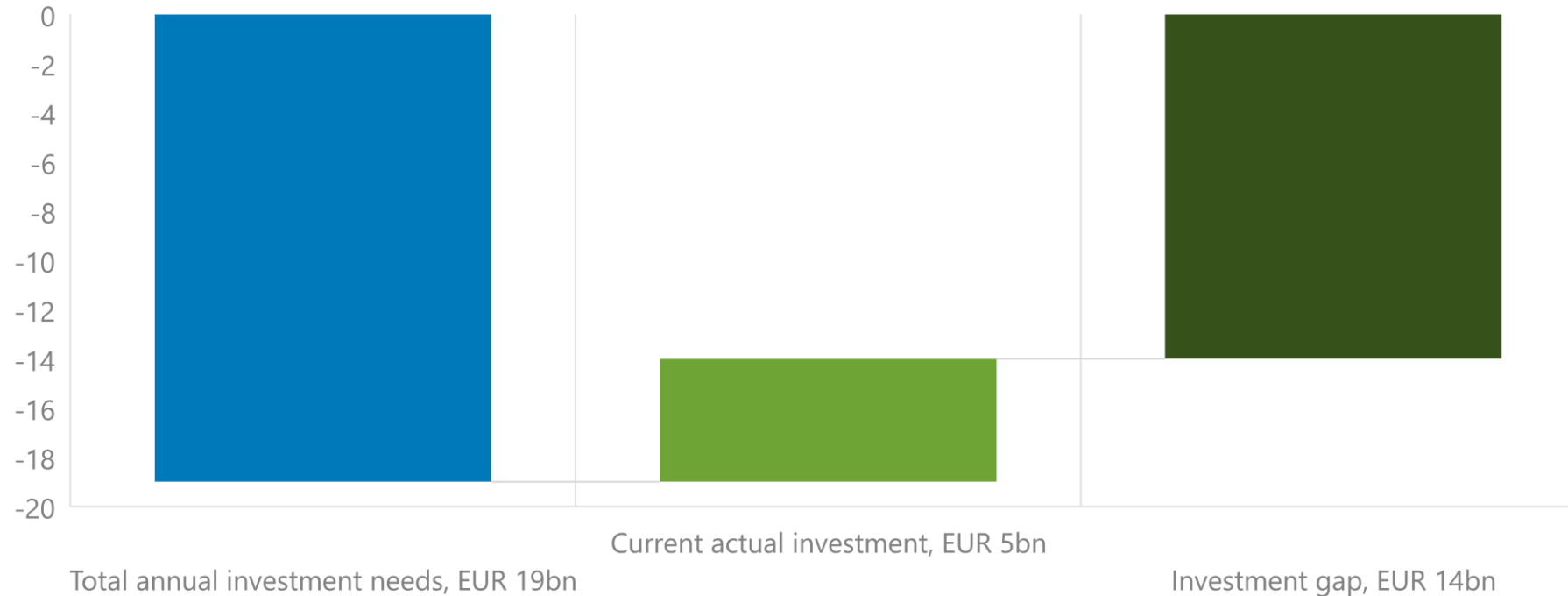




Barriers and drivers to financing of EE projects in SMEs

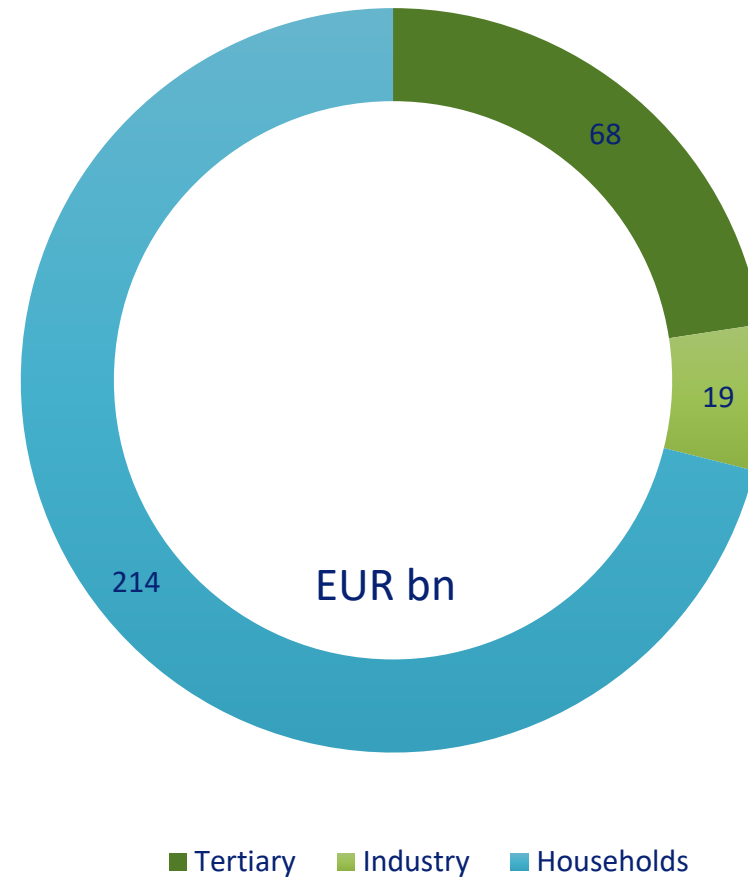
Ivana Rogulj, *1st SMAFIN Expanded
National Roundtable in Greece*

Annual investments in EE in industry in the EU



Source: B. Dorendorf, Results presentations: EEFIG 2.0: The Evolution of Financing Practices for EE in Buildings, SMEs and Industry, EEFIG plenary meeting 2022

EU Annual Clean Energy Investment Needs 2020-2030 – Demand Side (Billion EUR)

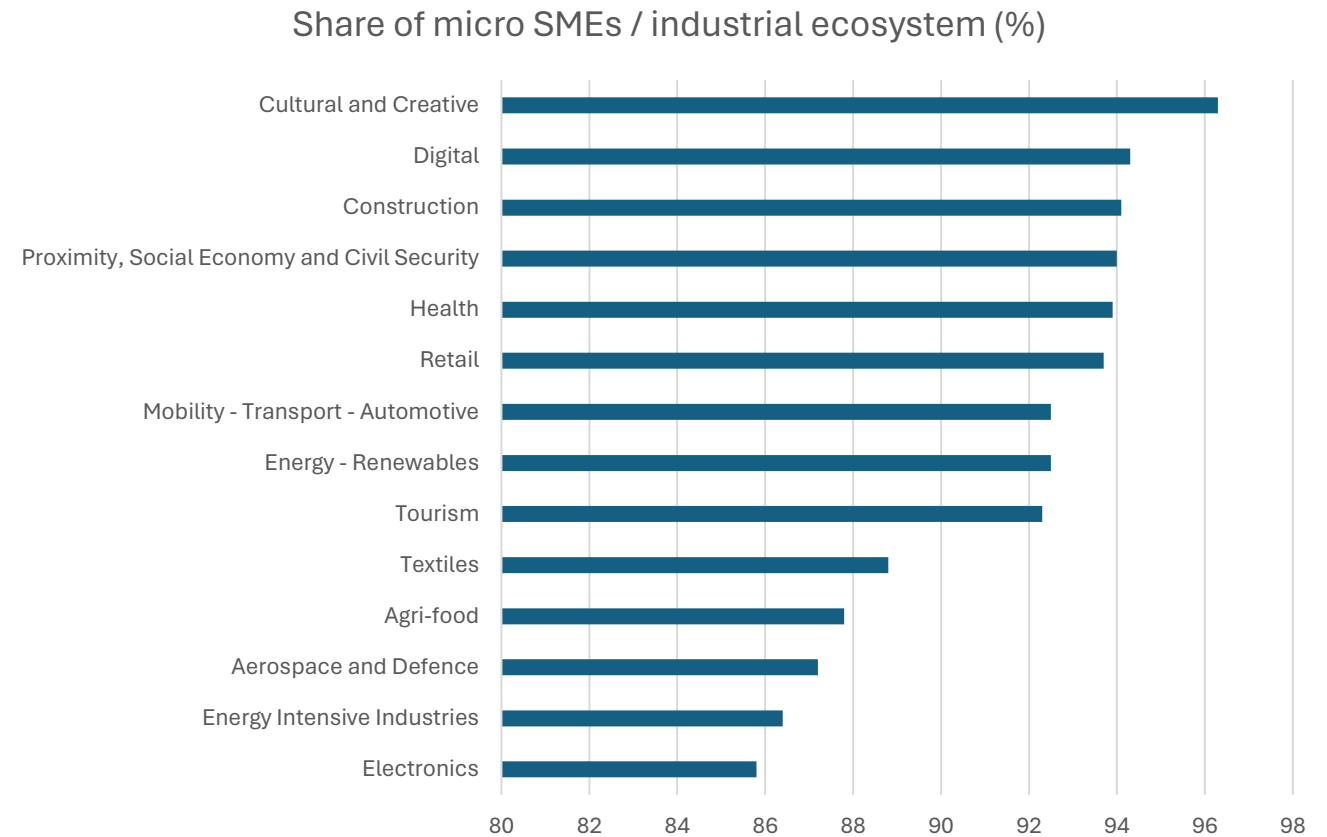


Modified from Holmes, I., Jess, T., Genard, Q. (2017). *Efficiency first scorecard: is the EU's energy union on track?*

Major challenge in company targeting

Large industrial enterprises are good hosts for third party funded energy efficiency projects.

However, EU industry is comprised of over 25 million active enterprises of which 99.8% are SMEs, 93% are micro enterprises.



Source: DG GROW, 2023. Annual Report on European SMEs

Barriers & drivers for companies

Source: Agrawal, R. et al. Challenges and opportunities for improving energy efficiency in SMEs: learnings from seven European projects. Energy Efficiency 16, 17 (2023).

Barriers: surrounding



- Lack of govt. support
- No energy audit obligation at SME level
- Perceived legislative and institutional barriers & high bureaucracy
- Lack of publicity and transparency
- Lack of standardised energy efficiency finance pathways
- Lack of information on incentives and tools

Barriers: financial



- Lack of finances & limited access
- High cost of energy efficiency upgrades initial investment
- Doubts around actual saving potential

Barriers: internal

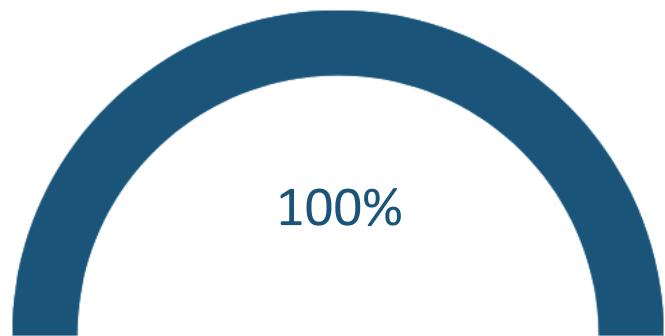


- Lack of priority & bounded rationality
- Lack of knowledge, expertise & competencies about energy efficiency regulations/incentive schemes, lack of technical knowledge, need for training
- Lack of communication with executives and board and involvement of employees
- Lack of information /awareness
- Lack of trust on external energy experts & auditors
- Lack of time & commitment

Drivers:

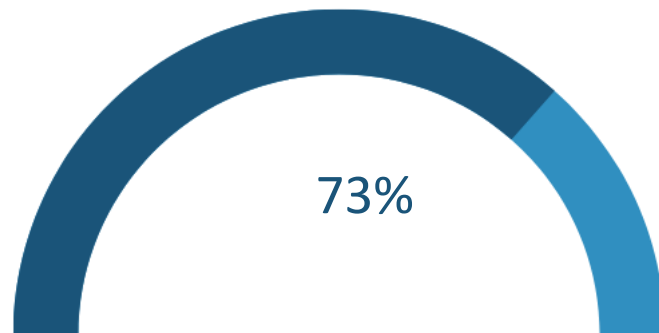
- One-stop-shop solution
- Self-financing mechanism
- Non-energy benefits

- Economic benefits from downsizing or elimination of equipment
- Tangible economic benefits
- Sufficient financial availability for energy efficiency improvements



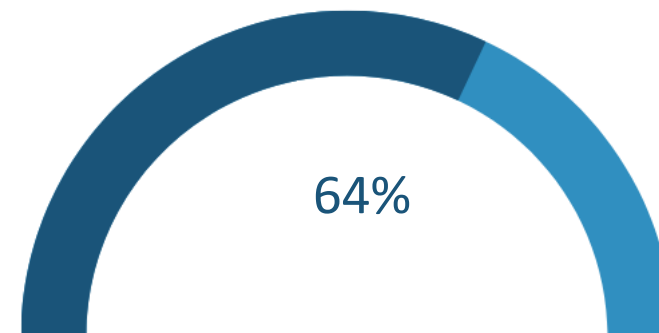
100%

Funding mechanisms (loans, grants etc.)



73%

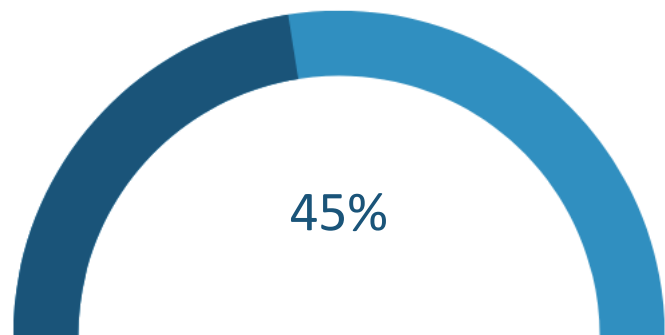
Dedicated tools (IT tools,
best practices or case studies etc.)



64%

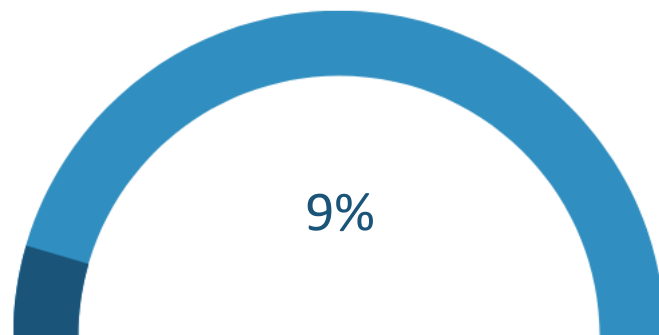
Training and education

What is already there (for SMEs)



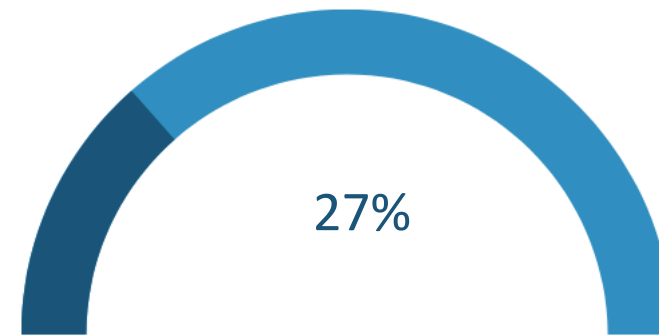
45%

Voluntary agreements



9%

Regulatory measures
(i.e. requirements)



27%

Fiscal incentives

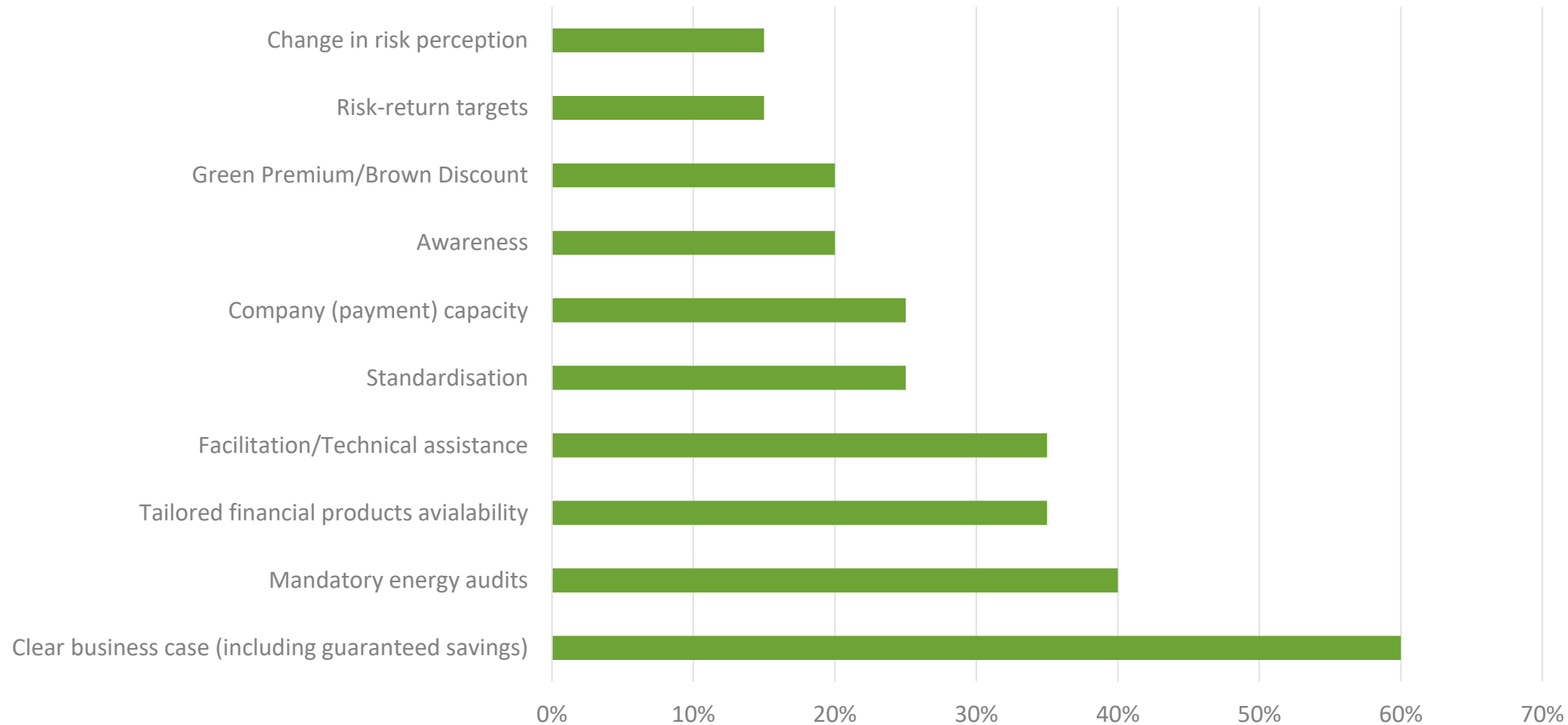
Financial mechanisms

- EPCs
- Loan/debt financing
- On-bill financing
- Energy service agreement
- Green bonds
- Economic incentives

New models

- Energy efficiency mortgages
- Property assessed clean energy
- Energy savings insurance
- Efficiency as service etc.

What could be the key drivers? (Recommendation from EFFIG)



What could be the key drivers? (extract from discussion in workshops with hundreds of key stakeholders in DEESME project)

01_Create a set of structured guidelines for companies - from audit to investment



03_Carbon Footprint calculation, sustainability, ESG (Compromise between reporting and monitoring effort for companies)



02_ Inform on Non-Energy Benefits (multiple benefits) related to energy efficiency



04_Benchmarking approach



05_Investment de-risking



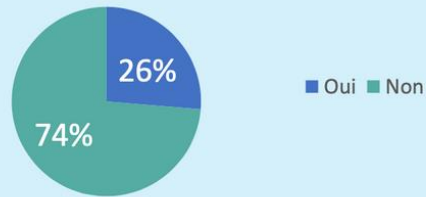
Benchmarking approach

DEESME Benchmarking Report:



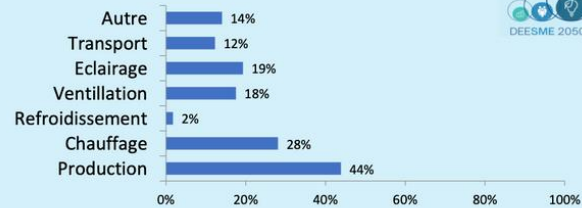
Le rapport résume graphiquement les résultats de l'enquête par questionnaire menée par MT-Partenaire auprès des entreprises du secteur de l'ameublement. Le rapport compare les informations recueillies dans le cadre de l'enquête.OPTIMUM SAS and 57 Autres entreprises

12. Avez-vous réalisé un audit énergétique au cours des trois dernières années ?



Votre réponseNon

13. quels sont vos 3 postes énergétiques les plus importants ?



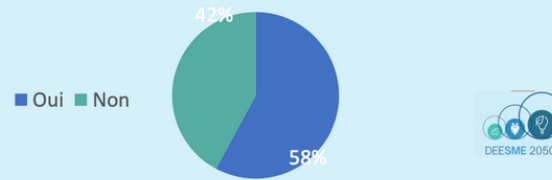
Votre réponse

Co-funded by the European Union under Project n°101076386. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or GINEA. Neither the European Union nor the granting authority can be held responsible for them.

DEESME Benchmarking Report:

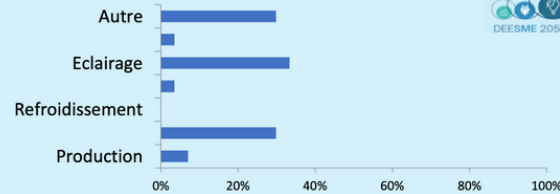


14. Avez-vous investi dans des actions d'efficacité énergétique au cours des cinq dernières années ?



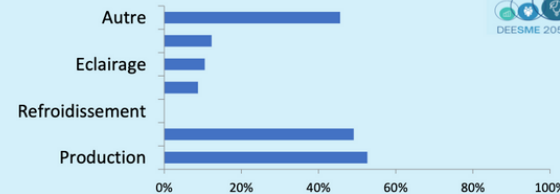
Votre réponseNon

15. les 3 principaux investissements réalisés pour l'efficacité énergétique ?



Votre réponse

16. Qu'aimeriez-vous améliorer dans votre entreprise en matière d'efficacité énergétique au cours des trois prochaines années ?

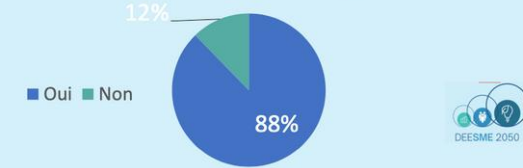


Votre réponseProduction

DEESME Benchmarking Report:

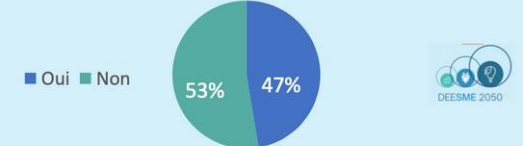


17. Votre entreprise est-elle consciente des avantages indirectes de la mise en œuvre d'actions d'efficacité énergétique ?



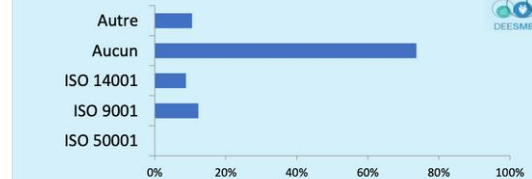
Votre réponseOui

18. Avez-vous nommé, officiellement ou non, une personne responsable des questions énergétiques ?



Votre réponseNon

19. Quels sont les systèmes de management adoptés par l'entreprise ?



Votre réponseAucun

What about multiple benefits?



- ↑ Use of waste fuels, heat, gas
- ↓ Product waste
- ↓ Waste water and hazardous waste
- ↓ Materials reduction



- ↓ Dust emissions
- ↓ Gas emissions
(CO, CO2, NOx, SOx)



- ↓ Need for engineering controls
- ↓ Cooling requirements
- ↑ Facility reliability
- ↓ Wear and tear
- ↓ Labour requirements

Benefits of energy efficiency in companies



- ↑ Product output/yield
- ↑ Performance
- ↑ Reliability
- ↑ Product quality/purity
- ↓ Process cycle times





- ↑ Lighting
- ↑ Temperature control
- ↑ Air quality
- ↓ Noise levels
- ↓ Need for personal protective equipment



- ↑ Image
- ↑ Liabilities
- ↑ Delayed or reduced capital expenditures
- Space requirements
- ↓ Worker morale
- ↑

DEESME tool created to analyse investments according to the MB approach

IMPORTANT ASPECT:
Standardisation & alignment with VALERI standard (Valuation of Energy Related Investments)

Investments analysis according to the Multiple Benefit approach					
					
Company	K. Ltd.				
Investment	Replacement of old production machines with new more energy efficient machines				
Main economic results without MBs			Main economic results with MBs		
Investment	600.000 €		Investment	600.000 €	
Pay Back time	9 years		Pay Back time	3 years	
IRR	0 %		IRR	0 %	
NPV	-59.692 €		NPV	1.099.459 €	
NPV/Investment	-0,10 -		NPV/Investment	2 -	
Cost of Saved Energy	2.028 €/tep		Cost of Saved Energy	2.028 €/tep	
Multiple Benefits (MB) and expected annual saving					
NEB1	6. Improved maintenance	135.888 €/year			
NEB2	4. Increased productivity	0 €/year			
NEB3	0	0 €/year			
NEB4	0	0 €/year			
NEB5	0	0 €/year			
NEB6	0	0 €/year			
Impact of Multiple Benefits on Costs, Value Proposition and Risks					
					
Impacts on costs		Check	Impacts on value proposition		Check
1. Improved product/ service efficiency	yes		1. Improved product/ service efficiency	yes	
2. Introduction of new products/ services	yes		2. Introduction of new products/ services	yes	
3. Development or innovations	0		3. Development or innovations	0	
4. Increased productivity	yes		4. Increased productivity	yes	
5. Increased utilization	yes		5. Increased utilization	yes	
6. Improved maintenance	yes		6. Improved maintenance	yes	
7. Reduced carbon footprint	no		7. Reduced carbon footprint	no	
8. Improved quality	yes		8. Improved quality	yes	
9. Improved Safety	yes		9. Improved Safety	no	
10. reduced energy consumption	yes		10. reduced energy consumption	no	
11. Improved raw materials consumption	yes		11. Improved raw materials consumption	yes	
12. Increased recycling	0		12. Increased recycling	0	
13. Reduced waste	yes		13. Reduced waste	no	
14. Increased employee satisfaction	0		14. Increased employee satisfaction	0	
15. Acquisition of 'green' customers	0		15. Acquisition of 'green' customers	0	
16. Acquisition of new customers	yes		16. Acquisition of new customers	yes	
17. Increased customer satisfaction	yes		17. Increased customer satisfaction	yes	
18. Increased customer loyalty	0		18. Increased customer loyalty	0	
19. Improved supply chain relationships	yes		19. Improved supply chain relationships	yes	
20. Improved stakeholder relationships	0		20. Improved stakeholder relationships	0	
21. Reduced litigation risks	0		21. Reduced litigation risks	0	
22. Increased regulatory compliance	0		22. Increased regulatory compliance	0	
Impacts on risks		Check	Impacts on risks		Check
1. Improved product/ service efficiency	yes		1. Improved product/ service efficiency	yes	
2. Introduction of new products/ services	yes		2. Introduction of new products/ services	yes	
3. Development or innovations	0		3. Development or innovations	0	
4. Increased productivity	yes		4. Increased productivity	yes	
5. Increased utilization	yes		5. Increased utilization	yes	
6. Improved maintenance	yes		6. Improved maintenance	yes	
7. Reduced carbon footprint	yes		7. Reduced carbon footprint	yes	
8. Improved quality	yes		8. Improved quality	yes	
9. Improved Safety	yes		9. Improved Safety	yes	
10. reduced energy consumption	yes		10. reduced energy consumption	yes	
11. Improved raw materials consumption	yes		11. Improved raw materials consumption	yes	
12. Increased recycling	0		12. Increased recycling	0	
13. Reduced waste	yes		13. Reduced waste	yes	
14. Increased employee satisfaction	0		14. Increased employee satisfaction	0	
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20. Improved stakeholder relationships	0		20. Improved stakeholder relationships	0	
21. Reduced litigation risks	0		21. Reduced litigation risks	0	
22. Increased regulatory compliance	0		22. Increased regulatory compliance	0	



MB Analysis

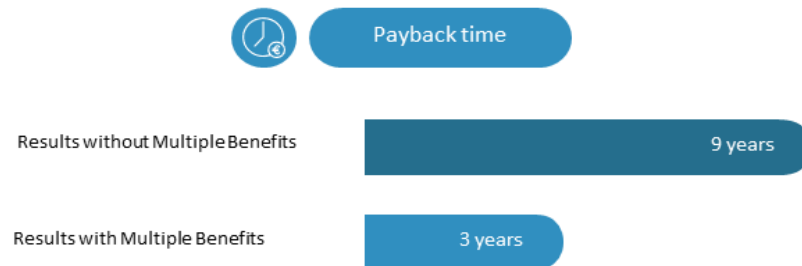
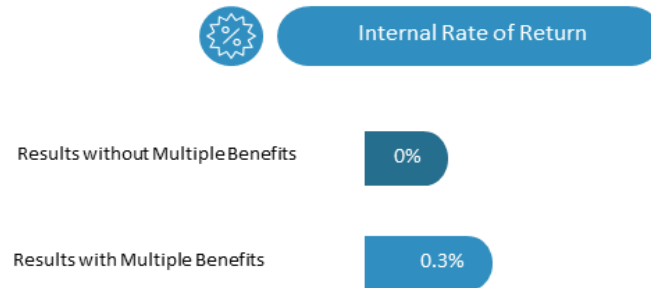
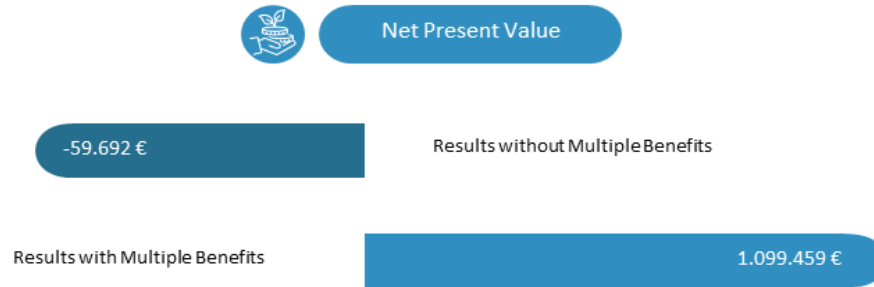
- Increased **productivity** (13/13)
- Introduction of **new 'green' products/services** (8/13)
- Improved **maintenance, quality and safety** (13/13)
- Acquisition of **new customers** (13/13)
- Increased **customer satisfaction** (11/13)

BM Sustainability Advancement

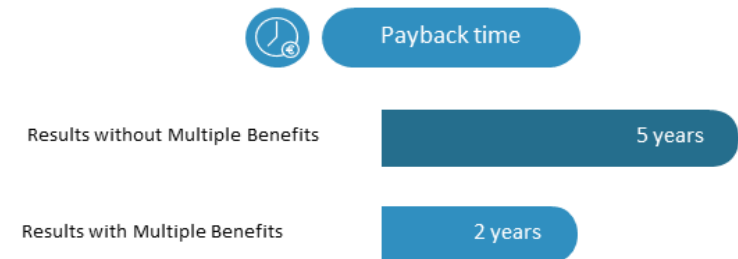
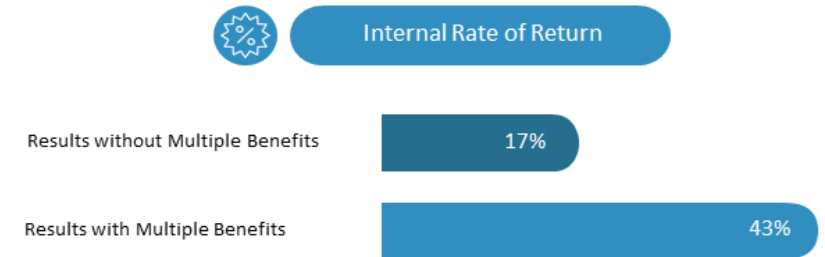
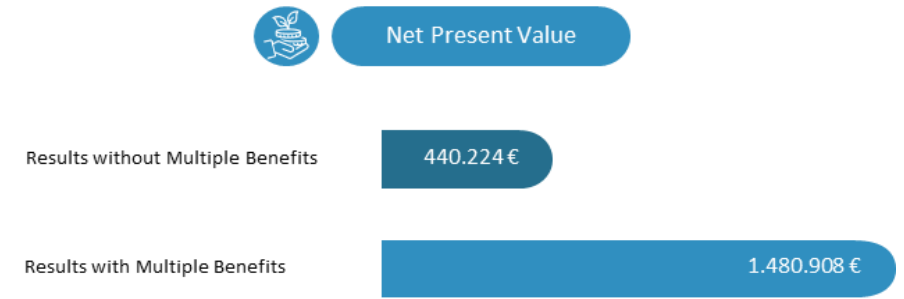
- **Value Proposition:** upcycling of leftovers, product complexity ↑
- **Key partners:** relationship with suppliers and customers ↑
- **Cost Structure:** energy and raw materials use ↓, maintenance costs



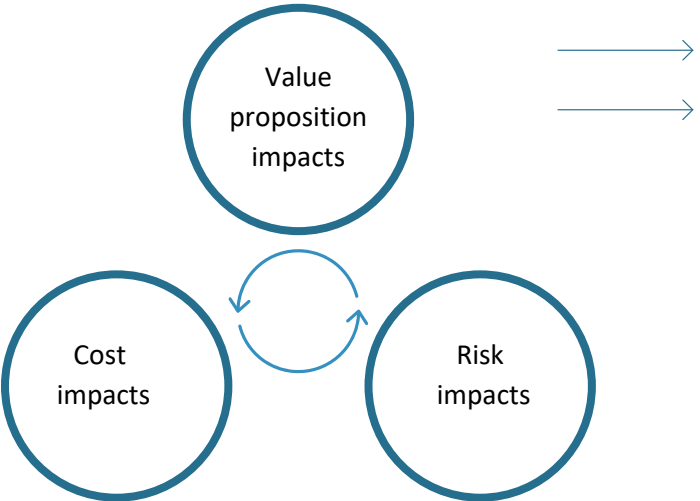
Results from a Bulgarian company audited



Results from an Italian company audited



Link to ESG



ESG indicators improved:

- positive social impacts (better staff safety and comfort, influence on stakeholders)
- reduced environmental impacts (energy, GHG, water, waste, raw materials)
- improved governance (success in the decarbonisation strategy, reduced capital investment needs, business risks)

Alignment with the sustainability reporting standards (EFRAG)

Source: Dr Catherine Cooremans, Ipso Facto, Online webinar – 20 October 2023



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Thank you!