



DEESME 2050

Developing Energy Efficiency Projects in
SMEs for European 2050 targets

DEESME 2050 project
plan and results +
H2020 DEESME

Ivana Rogulj, IEECP
& all project partners



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The Institute for European Energy and Climate Policy is a non-for-profit, independent research foundation working on climate change mitigation, energy efficiency and renewable energy policy.

IEECP acts as a knowledge-hub sharing pragmatic results as well as innovative ideas providing policymakers, and all private and public decision-makers with impartial expertise and science-based solutions, networking platforms and knowledge to support their work towards a sustainable future.



How (smaller) companies see EE?



Lack of awareness



Low capital



Difficulty to access financing



Lack of technical human resources

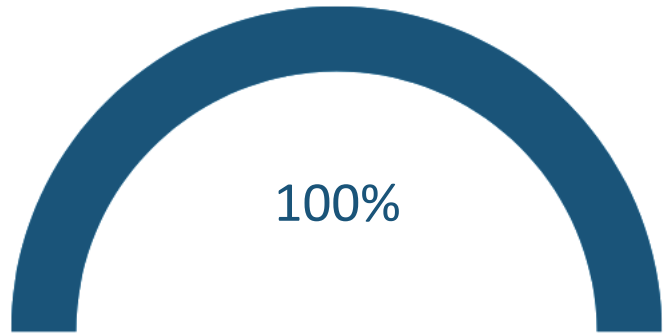


Doubts around actual saving potential

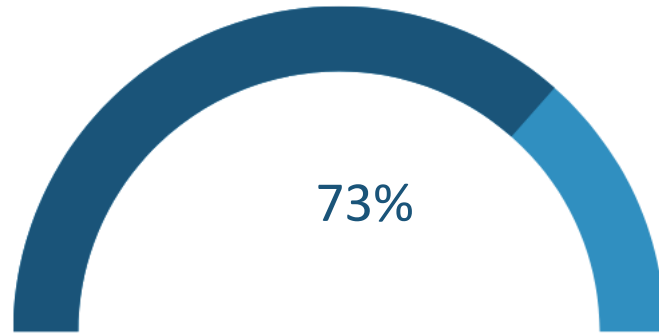


Challenges from the perspective of the National Authorities *(our survey/interviews):*

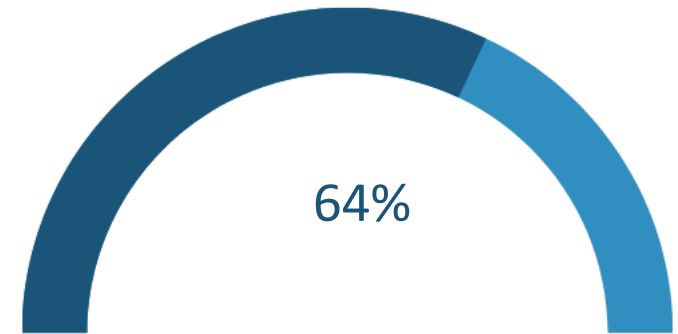
- Limited resources for transposition
- Identification of obligated companies
- Ensuring compliance &
- Quality of audits
- Enhancing the uptake of measures
- Creation of support mechanisms
- Guidance to SMEs
- Awareness on opportunities
- Compromise between reporting and monitoring effort



Funding mechanisms (loans, grants etc.)

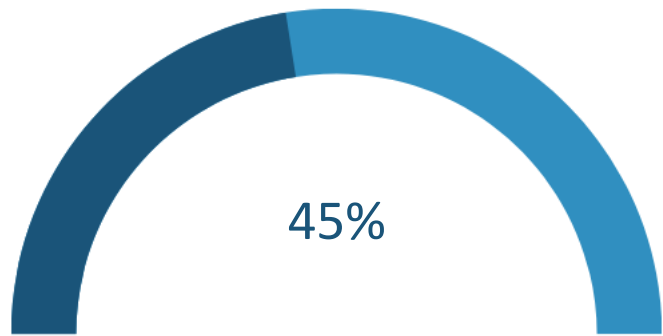


Dedicated tools (IT tools, best practices or case studies etc.)

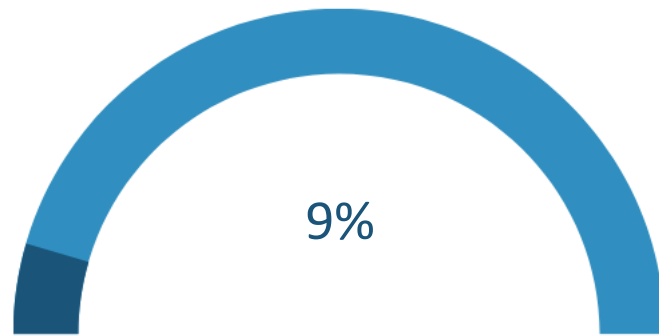


Training and education

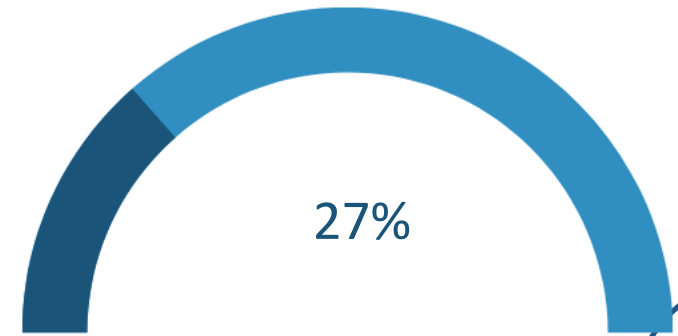
What is already there (for SMEs)



Voluntary agreements



Regulatory measures (i.e. requirements)

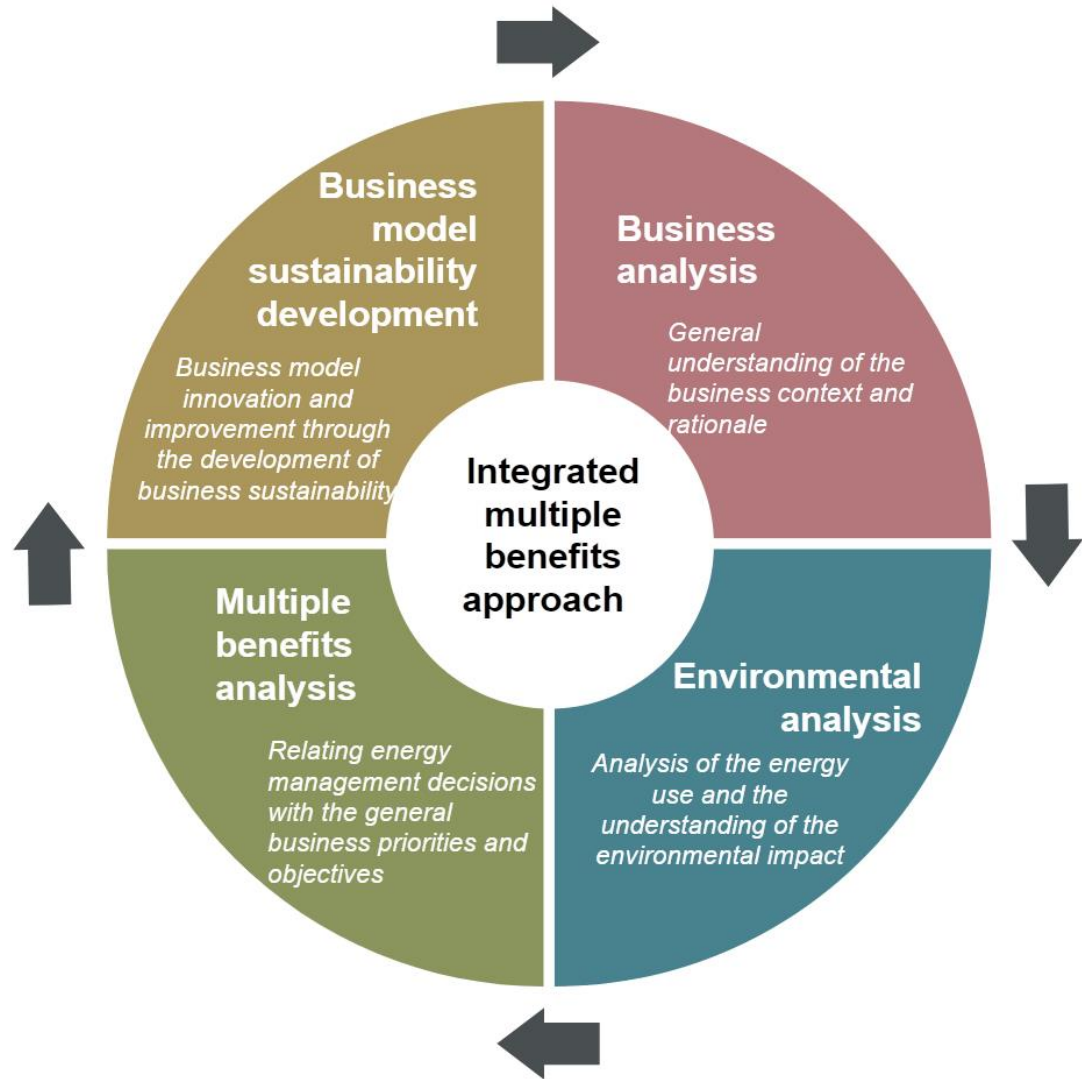


Fiscal incentives



What could help? (advice from our discussion with stakeholders):

- Overcome the information barrier... (hub/one stop shop)
- Create a set of structured guidelines...from audit to investment
- Inform on Non-Energy Benefits (multiple benefits) related to energy
- Carbon Footprint calculation, sustainability, ESG? (Compromise between reporting and monitoring effort)
- Benchmarking approach



01_ DEESME methodology of MB approach for energy audits and EMS & results

(Strategic aspects of energy efficiency)





- ↑ 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
- ↑ Worker morale





Results from **Bulgaria**

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 **Italy**



MB Analysis

- Improved **maintenance** (7/12)
- Improved **raw materials consumption** (4/12)
- Improved **supply chain relationships** (5/12)
- Improved **quality** (1/12)
- Increased **customer satisfaction** (1/12)

BM Sustainability Advancement

- Cost reduction enhancing **competitiveness**
- Sustainable production unleashes **new market opportunities**
- **Monitoring systems** to identify and address inefficiencies



Results from **Poland**



MB Analysis

- Introduction of **new products/services** (4/7)
- Improved **quality** (5/7)
- Improved **raw material consumption** (4/7)
- Increased **employee and customer satisfaction** (2/7)
- Increased **utilization** (3/7)

BM Sustainability Advancement

- **Customer Segment, Relationships, Cost structure and Key resources** ↑



Results from **Germany**



MB Analysis

- Increased **productivity** (10/10)
- Improved **safety** (10/10)

BM Sustainability Advancement

- **Key Activities:** monitoring & control systems for heating processes
- **Cost Structure:** company's competitiveness ↑



DEESME MB Approach: Identified Best Practices



Relevance of
**complete and
accurate data**
**Quantification of
problems**



Commitment of the
Top Management



Training of
Operational and
Managerial staff





Communicate
successful energy
projects

02_Non-energy benefits quantification & monetisation

The xls spreadsheet, created to analyze investments according to the MB approach - upgrade in progress

IMPORTANT ASPECT:
Standardisation

Investments analysis according to the Multiple Benefit approach					
 <p>DEESME National schemes for energy efficiency in SMEs</p>					
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			Check
1. Improved product/service efficiency	yes				
2. Introduction of new products/services	yes				
3. Development or innovations	0				
4. Increased productivity	yes				
5. Increased utilization	yes				
6. Improved maintenance	yes				
7. Reduced carbon footprint	yes				
8. Improved quality	yes				
9. Improved Safety	yes				
10. reduced energy consumption	yes				
11. Improved raw materials consumption	yes				
12. Increased recycling	0				
13. Reduced waste	yes				
14. Increased employee satisfaction	0				
15. Acquisition of 'green' customers	0				
16. Acquisition of new customers	yes				
17. Increased customer satisfaction	yes				
18. Increased customer loyalty	0				
19. Improved supply chain relationships	yes				
20. Improved stakeholder relationships	0				
21. Reduced litigation risks	0				
22. Increased regulatory compliance	0				

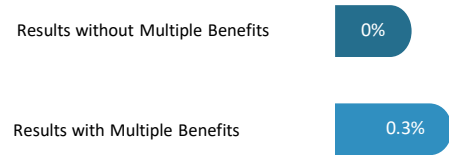
Results from a Bulgarian company audited



Net Present Value



Internal Rate of Return



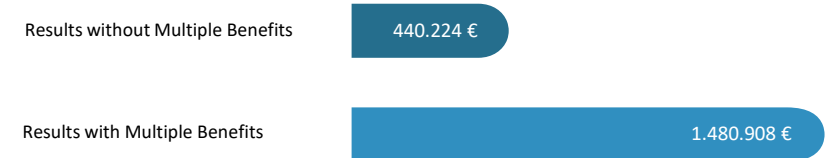
Payback time



Results from an Italian company audited



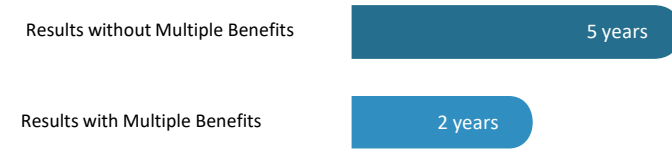
Net Present Value



Internal Rate of Return



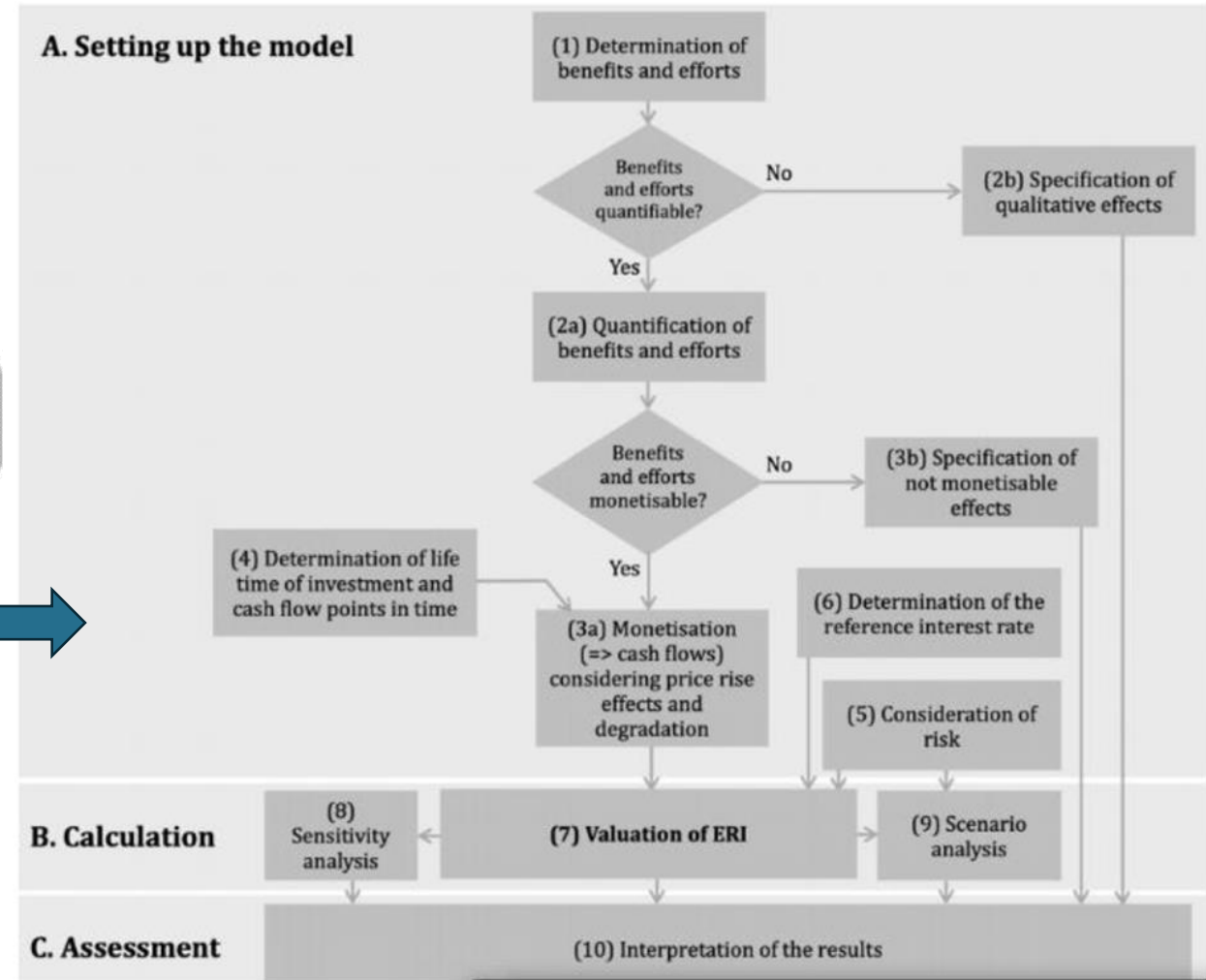
Payback time



Further improvements (ESG + improving the methodology do identify NEBs) - ease the monitoring

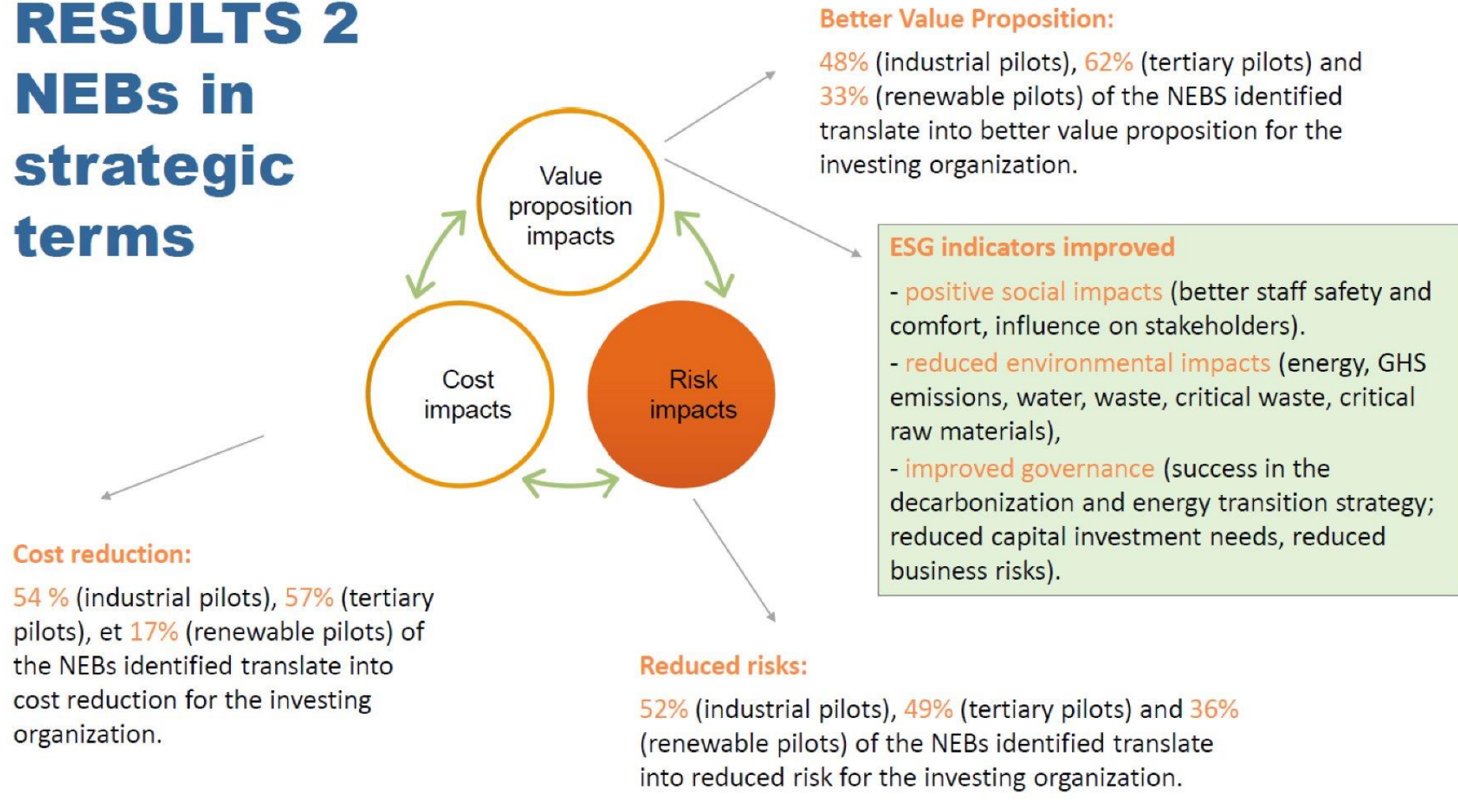


Adding **ESG scores** taking into consideration the multiple benefits

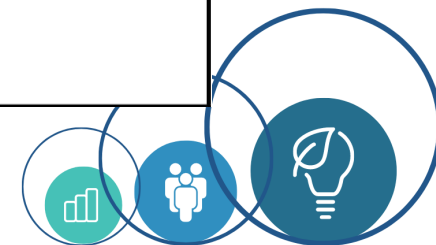


Why?

RESULTS 2 NEBs in strategic terms



SOURCE: Dr Catherine Cooremans Ipsos Facto Online webinar – 20 October 2023



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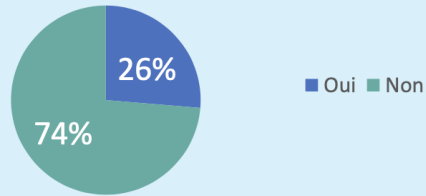
03_Benchmarking approach & supply chain impact

DEESME Benchmarking Report: OPTIMUM SAS



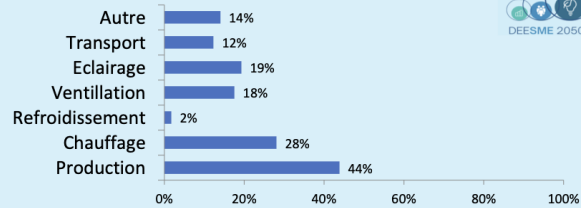
Le rapport résume graphiquement les résultats de l'enquête par questionnaire menée par MT-Partenaire auprès des entreprises du secteur de l'ameublement. Le rapport compare les informations recueillies dans le cadre de l'enquête.OPTIMUM SAS and 57 Autres entreprises

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 ?



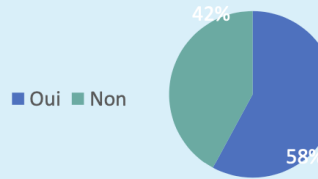
Votre réponse

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DEESME Benchmarking Report:

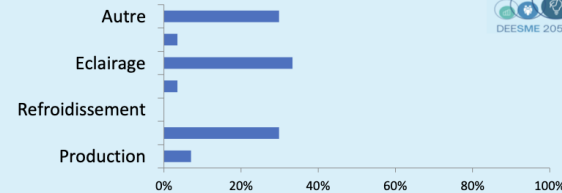


14. Avez-vous investi dans des actions d'efficacité énergétique au cours des cinq dernières années ?



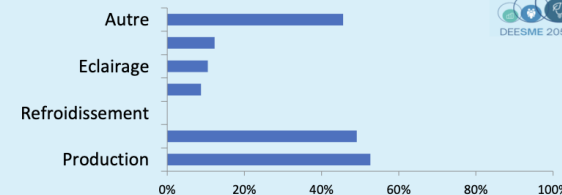
Votre réponseNon

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 ?

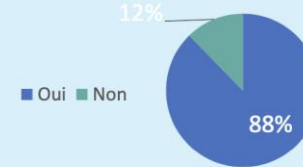


Votre réponseProduction

DEESME Benchmarking Report:

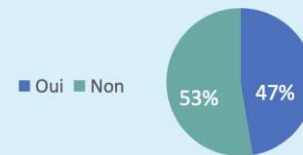


17. Votre entreprise est-elle consciente des avantages indirectes de la mise en œuvre d'actions d'efficacité énergétique ?



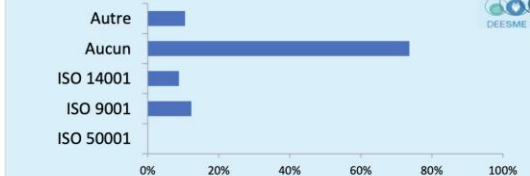
Votre réponseOui

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

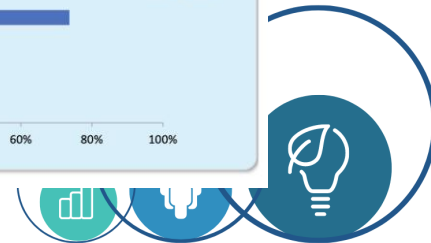


Votre réponseNon

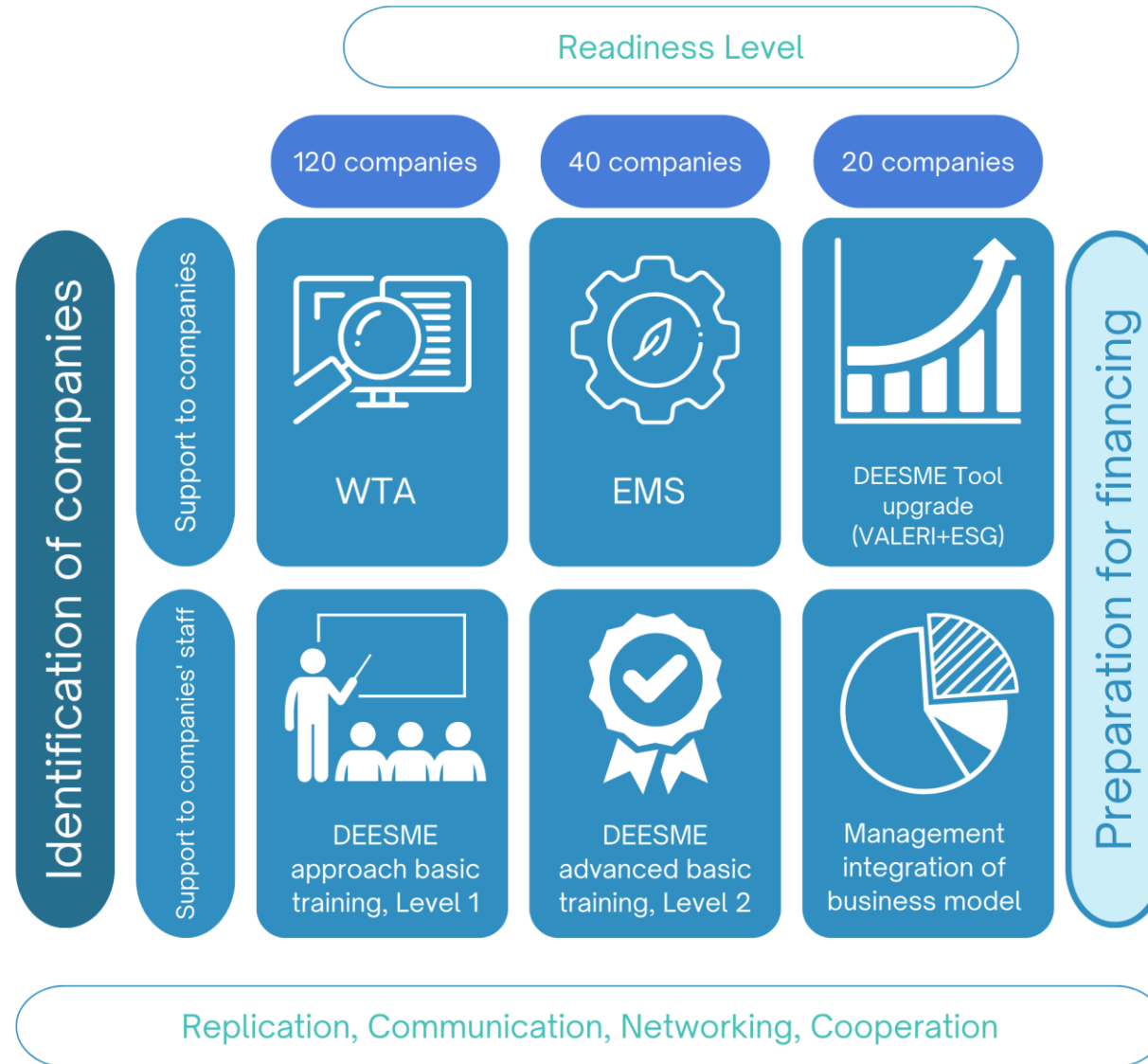
19. Quels sont les systèmes de management adoptés par l'entreprise ?



Votre réponseAucun



What else are we doing?



Partners



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