



German, Italian & Latin American
consortium for resource efficient
logistics hubs & transport

alice

Alliance for
Logistics Innovation
through Collaboration
in Europe

SUSTAINABILITY AND GHG PERFORMANCE AT LOGISTICS HUBS

Joint webinar of the GILA project and ETP ALICE

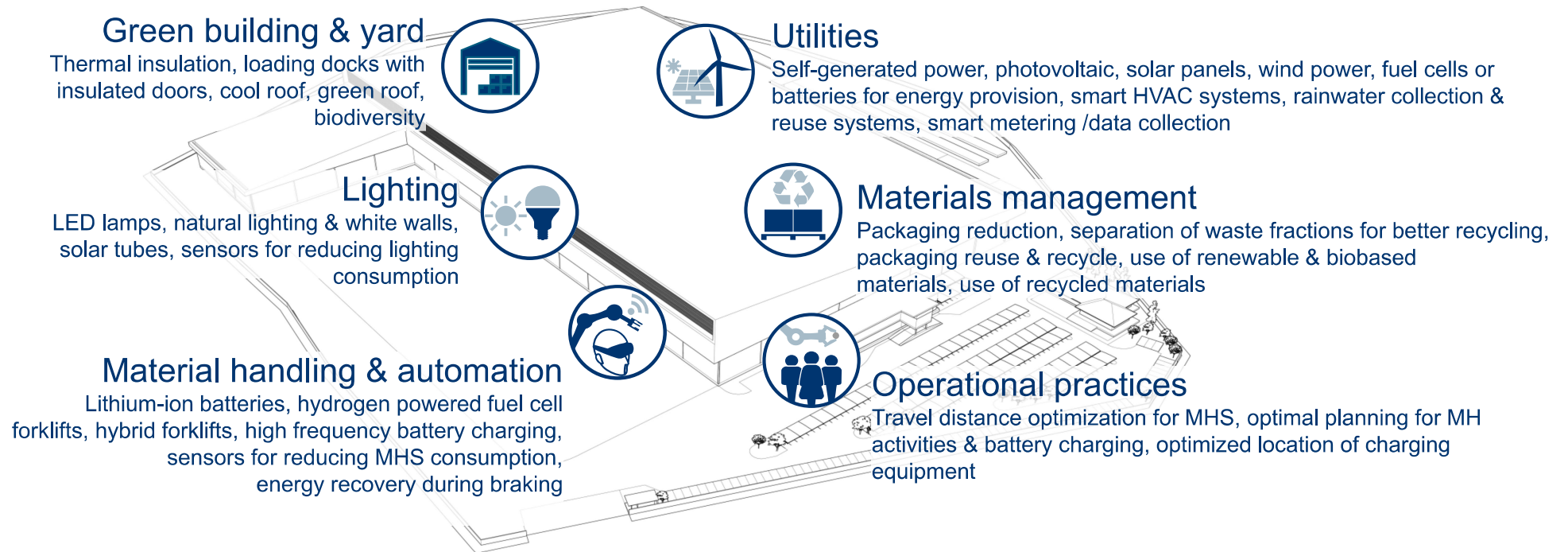
- GHG emissions quantification of logistics sites aligned with ISO 14083
Jan-Philipp Jarmer, Fraunhofer IML
- Annual market studies & overall GHG performance indicators for logistics hubs
Andrea Fossa, GreenRouter & Kerstin Dobers, Fraunhofer IML
- Possible solutions for decarbonising logistics hubs
Sara Perotti, Politecnico di Milano
- Sustainability of hubs: a key driver for maintaining value over time
Scarlet Romano, Arcadis Germany



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Decarbonisation measures

Analysis of 31 design variables referred to 6 different areas of intervention



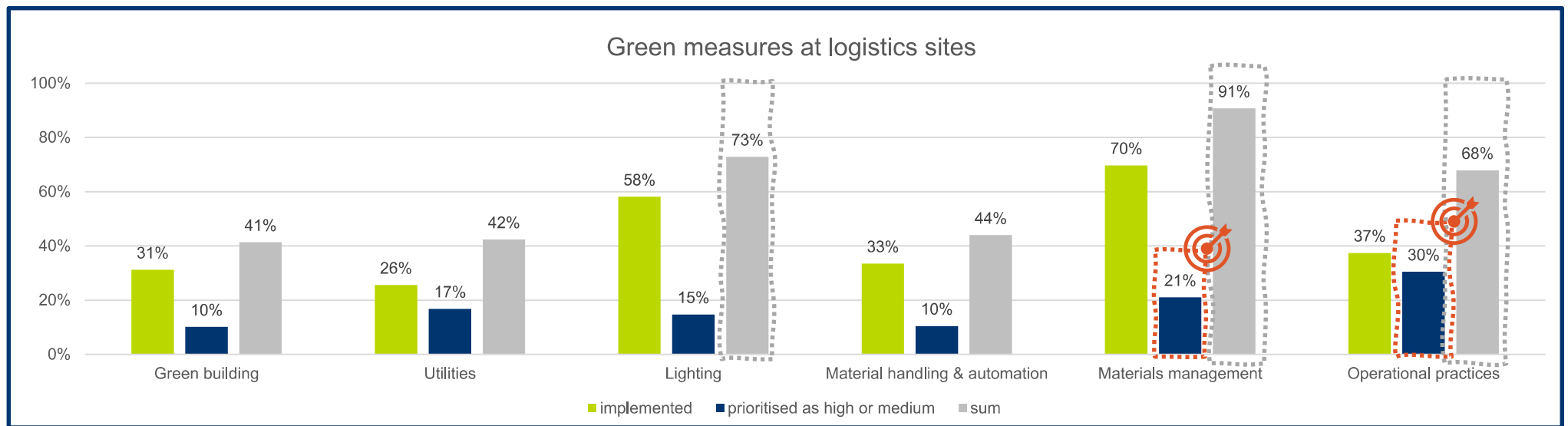
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HVAC – Heating, ventilation, air conditioning, MH - material handling, MHS – material handling systems

Decarbonisation measures

Current adoption vs. prospective scenario: an overview

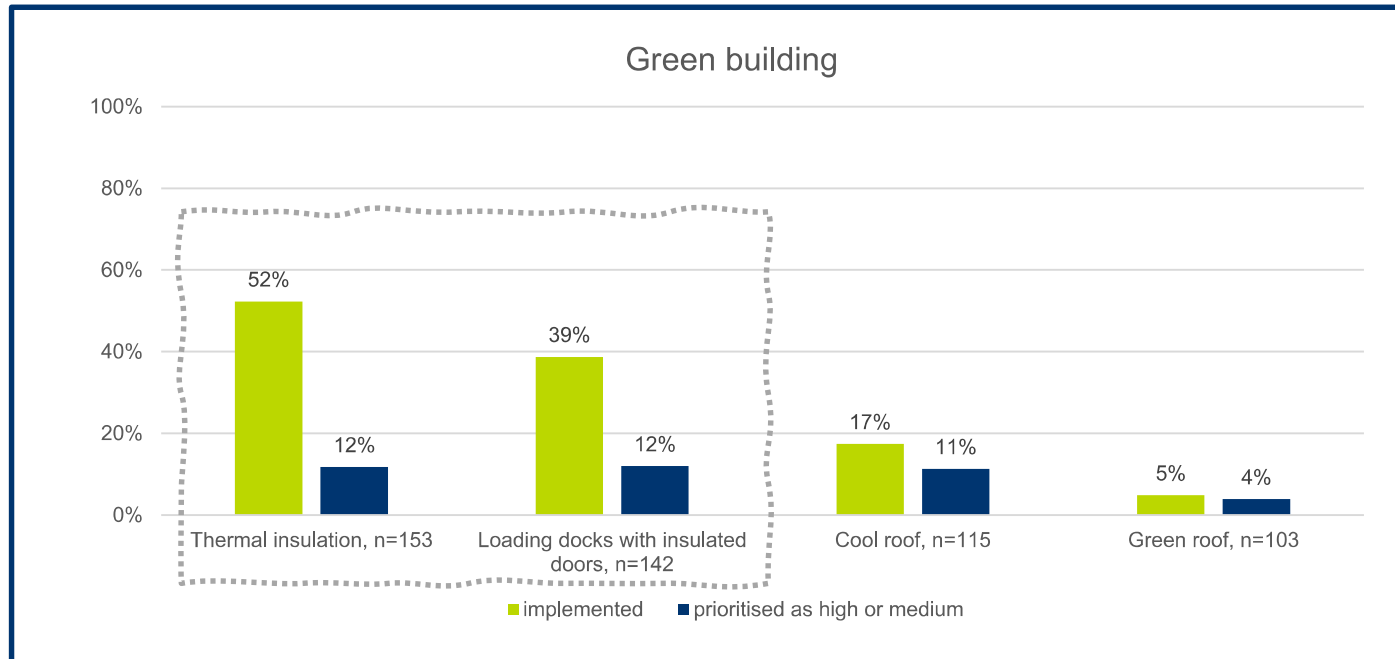
- **Materials management** (91%), **lighting** (73%), and **operational practices** (68%) appear the major areas of intervention in terms of current adoption and priority for future interventions.



Green building

Current adoption vs. prospective scenario

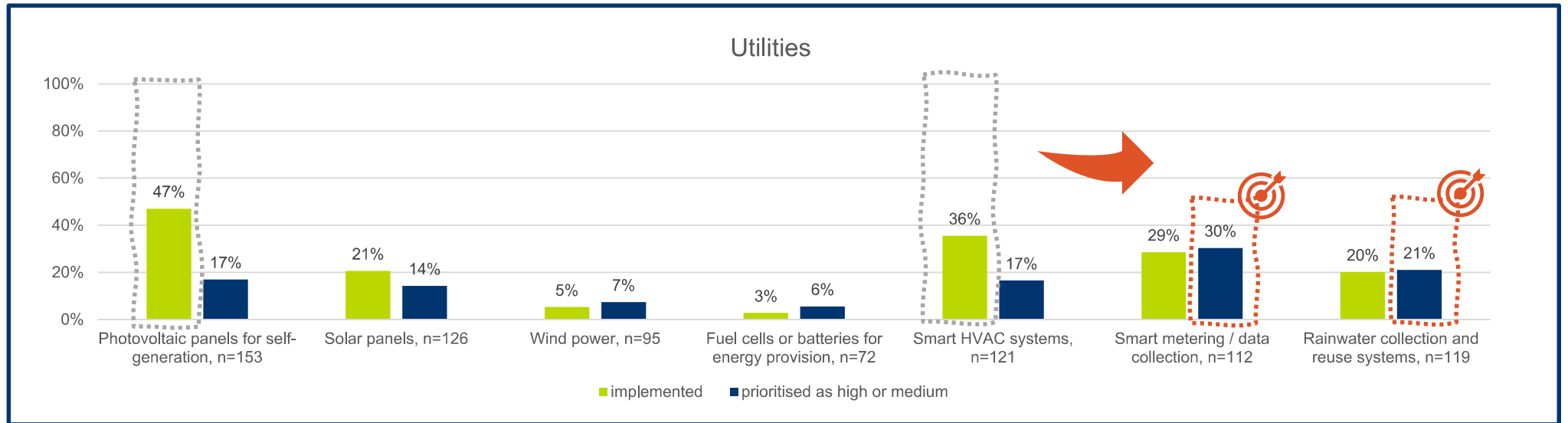
- ▶ 153 sites provided answers on the measure “**Thermal insulation**”, half of which have implemented it.
- ▶ **Loading docks with insulated doors** is another widespread solution (55 sites).
- ▶ Innovative solutions such as **cool roof** and **green roof** are still scarcely adopted.



Utilities

Current adoption vs. prospective scenario

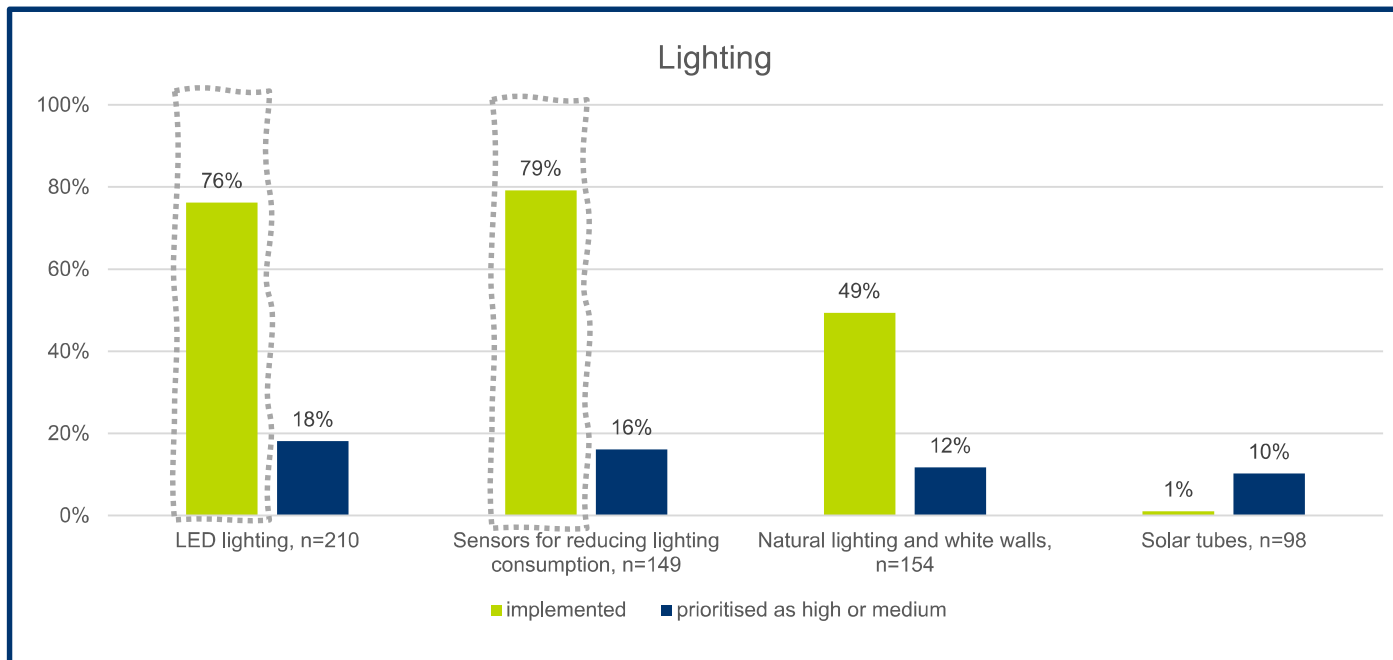
- ▶ **Photovoltaic panels** (72 sites) for own use and **smart HVAC systems** (44 sites) are particularly widespread.
- ▶ Priorities for **future** interventions seem to highlight a market interest in **smart metering** (34 sites), followed by rainwater collection and reuse systems (25).



Lighting

Current adoption vs. prospective scenario

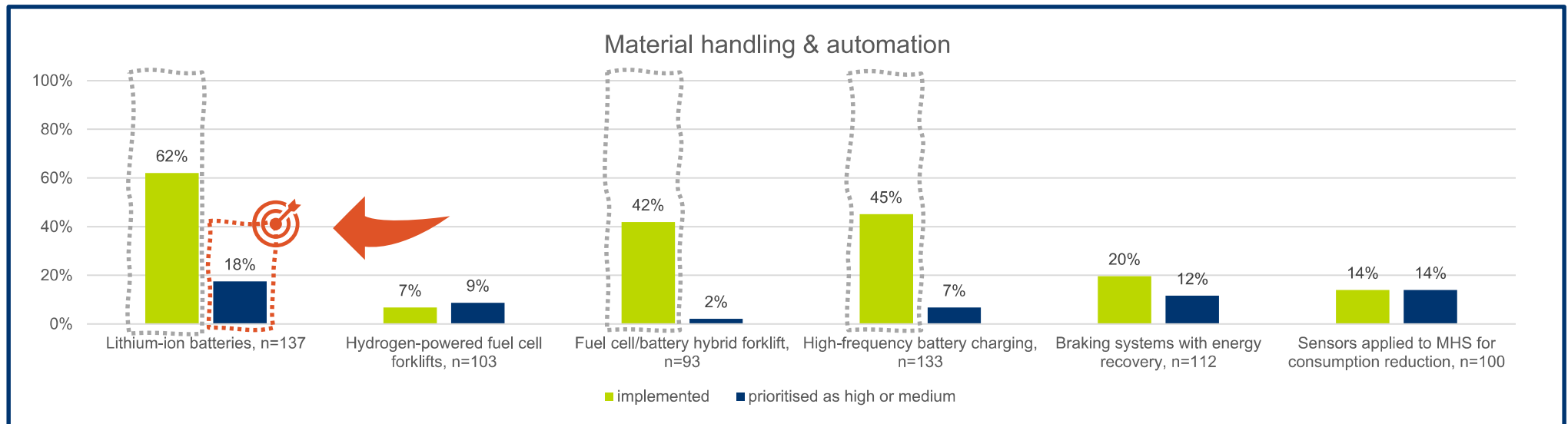
- ▶ **LED lighting** (160 sites) together with **sensors for reducing consumption** (118 sites) are the most implemented solution by far.
- ▶ A relevant share also uses natural lighting and white walls (49%) for energy efficient working conditions.



Material handling and automation

Current adoption vs. prospective scenario

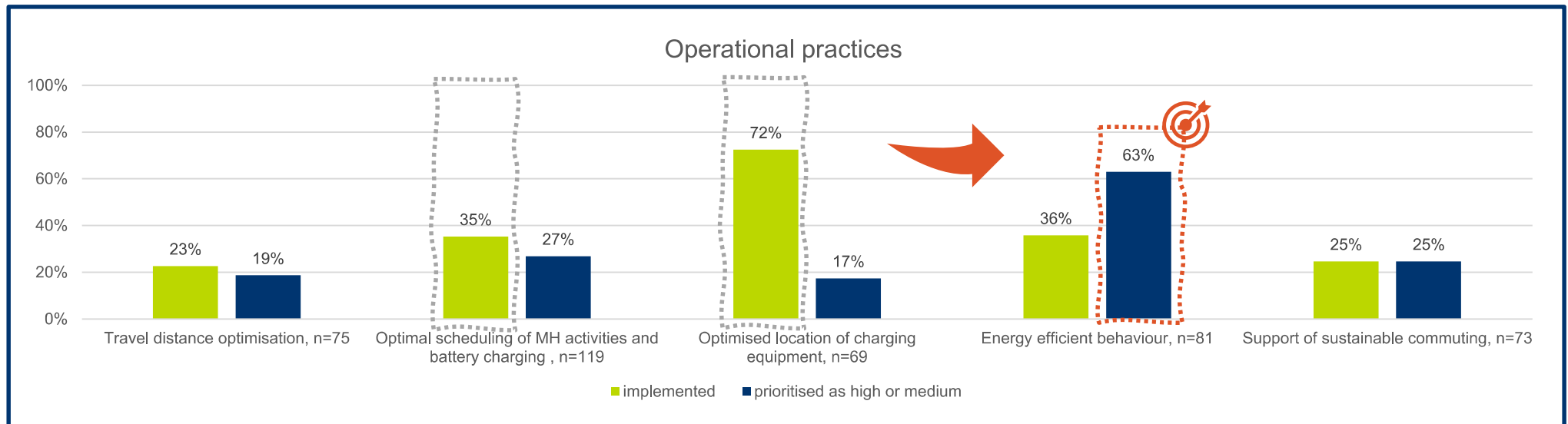
- ▶ Current adoption is mainly concentrated on **forklifts**, especially on the implementation of lithium-ion batteries (85 sites), **high-frequency battery charging** (60 sites) or **fuel cell/battery hybrid forklift** (39 sites).
- ▶ Lithium-ion batteries are **also prioritised** as high or medium for future implementation in 25 sites (18%).



Operational practices

Current adoption vs. prospective scenario

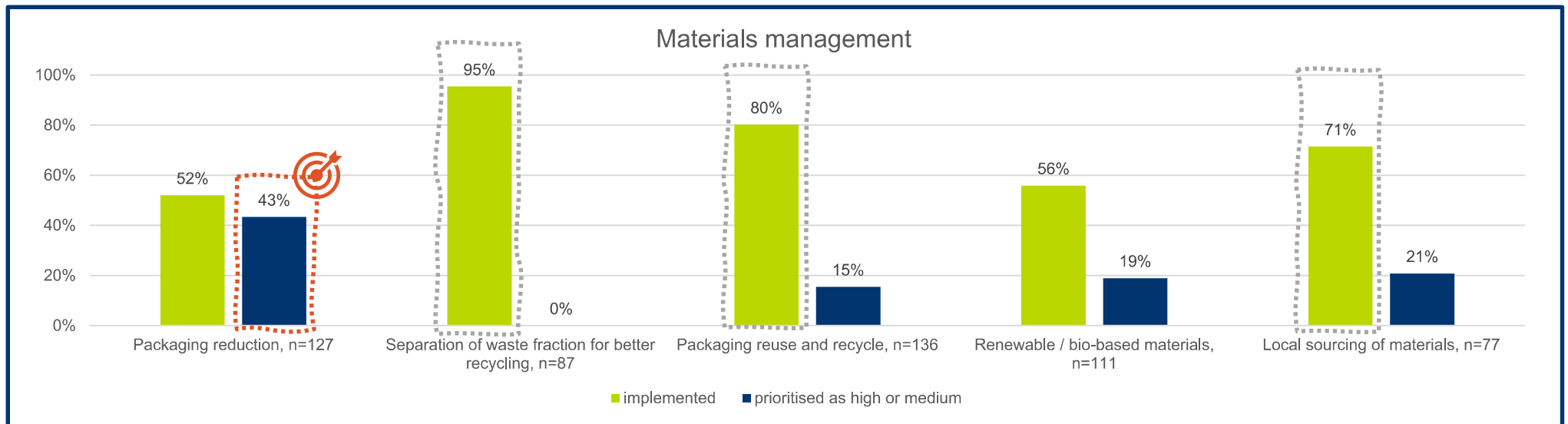
- ▶ Improvement by **optimising the location of charging equipment** of material handling system has been adopted by 50 sites, followed by **optimal scheduling of MH activities and battery charging** (42 sites)
- ▶ **Energy efficient behaviour** is also quite common (30 sites) and has emerged as a clear focus for future implementation (63%).



Material management

Current adoption vs. prospective scenario

- ▶ High adoption: the main levers for companies involve **actions on the packaging materials used**, according to two main strategies:
 - adopting more sustainable **materials** (local sourcing, renewable/bio-based materials), and
 - working on **processes** (packaging reduction, enhancing materials reuse and recycle)



Summary on decarbonisation measures

- ▶ Main focus on **lighting**, **materials management**, and **operational practices** with these latter two being the major areas in terms of **priority** for future interventions.
- ▶ **LED lighting** often coupled with **sensors for reducing consumption** are confirmed as particularly widespread.
- ▶ As per materials management, improved **materials** and more **efficient processes** appear as the key actions.
- ▶ Operational practices often entail both a focus on **MH optimisation** (charging location and scheduling) and an overall commitment towards **energy efficient behaviour**.