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Unlocking the Green Economy: Why Go Green and How to Start?

A Guide for SMEs in Egypt and the MENA Region

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Table of Contents

List of Figures

Wan, Kairo, and Shamashargi, Ash (2015). Unsplash. Front Cover.

1. Unlocking the green economy: Objectives and executive summary

A "green economy" is an economic system that generates profits while mitigating environmental risks and impacts. It involves rethinking traditional business practices to incorporate environmental considerations, ensuring that economic growth and environmental sustainability are mutually aligned. According to the United Nations Environment Program (UNEP), a green economy is defined as one that results in improved human well-being and social equity while significantly reducing environmental risks and ecological scarcities (UNEP, 2011).

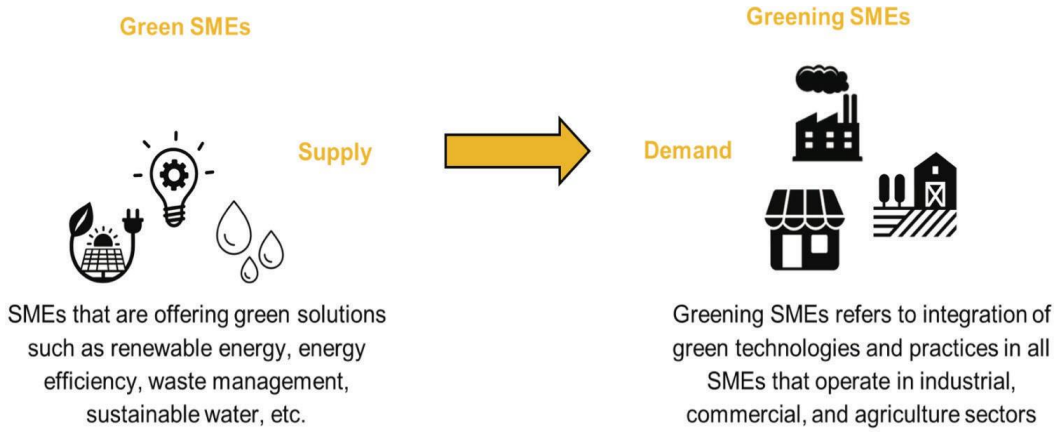

Figure 1: Integration between SMEs providing green solutions and SMEs moving towards green transformation

Every business, regardless of its size or sector, impacts the environment through its daily operations. This guide aims to inform small and medium-sized enterprises (SMEs) on how embracing green practices can unlock numerous opportunities that benefit both companies and the environment simultaneously.

This guide is designed to support SMEs that offer green solutions to the market, as well as those with an interest in greening their operations. It highlights the business and environmental advantages of greening operations and showcases best practices to enhance the environmental footprint of SMEs while reducing their operational costs.

As a supplementary resource, a diagnostic tool has also been developed to support SMEs in evaluating their operations and the impact of their products or services from a green economy perspective. The weights of each category were determined by Chemonics Egypt Consultants through a committee of industry experts, following in-depth interviews and focus groups with Egyptian SMEs. At the end of the assessment, respondents will receive recommendations to enhance their economic and environmental impact based on the results of the self-assessment. The diagnostic tool can be accessed online at https://clei.moenv.gov.eg/green-sme-assessment-tool

This tool is specifically designed to serve SMEs in Egypt and the broader Middle East and North Africa (MENA) region.

2. Why go green?

2.1 What opportunities lie ahead?

A. Market sizes and opportunities across sub-sectors

Globally, green investment opportunities are estimated to be worth at least USD 38 billion between 2020 and 2030[1].

The bio-based economy alone represents an estimated annual global market opportunity of USD 20 billion, according to recent figures from UNIDO.[2] Energy-efficient retrofits of buildings, low-carbon municipal waste and water management, and green urban transport represent an estimated minimum of USD 38 billion in investment for the private sector.

B. Value-added production

Increases value-added production in the Egyptian economy and the return on limited resources.

Green investments enhance value-added production by promoting sustainable practices that optimize resource utilization, minimize waste, and improve operational efficiency. These investments drive innovation, leading to the development of higher-value products and services, as well as increased competitiveness in both domestic and global markets. For example, an agricultural business that invests in bio-based fertilizers and sustainable farming practices can produce higher-quality crops that command premium prices while also helping to restore degraded soils. A small manufacturing firm can implement energy-efficient technologies, waste reduction, and valorization processes, thereby lowering operating costs and creating eco-friendly products that appeal to environmentally conscious consumers while also reducing its carbon footprint. Additionally, adopting renewable energy can reduce utility expenses and enhance energy security, thereby improving the overall profitability and sustainability of the SME.

C. Creating green jobs across value chains

Green investments can create jobs across value chains by promoting industries that prioritize sustainability. For example, an SME installing renewable energy would need to hire and train more qualified technicians to install and maintain solar panels. In agriculture, the adoption of organic farming practices creates demand for agronomists and workers skilled in sustainable farming techniques. Waste management generates jobs in the collection, transportation, processing, and innovation of new products created from recycled materials. These jobs not only contribute to economic growth but also promote environmental stewardship and can create a more sustainable economy.

D. Increasing climate resilience

The devastating effects of global warming are expected to have the most significant impact in some of the world's most vulnerable regions, including the Middle East and North Africa (MENA). Green investments enhance climate resilience by promoting practices and technologies that mitigate vulnerability to the impacts of climate change. For example, investing in drip irrigation and drought-resistant crops helps farmers maintain yields in arid regions, mitigating the effects of water scarcity in desert areas.

2.2 Reducing costs

Greening operations can lead to significant cost savings while enhancing competitiveness and market appeal. This section highlights various strategies that can optimize costs in an SME's supply chain, leading to higher margins and profitability. Strategies vary from one company to another; thus, it is essential to select relevant interventions that best serve the specific business model.

A. Resource efficiency in the food and beverage manufacturing sector

The food and beverage sector is considered one of the highest waste-generating industries. A study by Chemonics Egypt Consultants, which covered 100 food and beverage factories in Egypt, found that the average amount of solid waste generated per factory is approximately 950 tons per annum. Based on this figure, it is estimated that approximately 5.4 million tons of waste are generated annually from a total of 5,700 food and beverage facilities in Egypt. This figure includes all types of solid waste, including both

[1] The World Bank Group (2022). Egypt Country Climate and Development Report. Available at: https://documents1.worldbank.org/curated/en/099510011012235419/pdf/P17729200725ff0170ba05031a8d4ac26d7.pdf

[2] Union of Arab Chambers (2023). UNIDO. $20 Billion Opportunities for Investments in Environment and Climate in Egypt. Available at: https://uac-org.org/en/news/details/5500/

organic and non-organic materials. Additionally, the Egyptian agro-industrial sector, which includes the production of dairy products, beverages, processed vegetables and fruits, as well as meat and fish products, generates an estimated 0.5 million tons of waste per year. Approximately 53% of this waste is generated in the Greater Cairo area (Cairo, Giza, and Qalyubiya), while 22% originates from Alexandria. Moreover, the industry generates approximately 2.2 million tons of sugarcane bagasse and 0.2 million tons of sugar mud. In total, this amounts to approximately 2.9 million tons of agro-industrial waste, primarily agricultural and organic waste, that can be utilized to produce bio-based products and energy.

The UNIDO IGGE project, building on its experience in energy efficiency through GEF-funded programs, collaborated with the Chamber of Food Industries Egypt (CFI) to develop a guide for Egyptian SMEs in the food and beverage industry that provides comprehensive strategies for reducing costs by enhancing resource efficiency, particularly through greening operations. The guide highlights the main benefits of implementing resource efficiency practices as follows:

- Cost reduction of both energy and raw materials;
- Improved operational reliability and control;
- Ability to increase production without requiring additional resources;
- Avoidance of additional capital and operational expenditures through greater utilization of existing equipment assets;
- Improved product quality through better process control;
- Environmental improvements to comply with requirements in domestic and export markets, which will in turn mean greater acceptance by markets, the community, and government;
- Improved health and safety for workers.

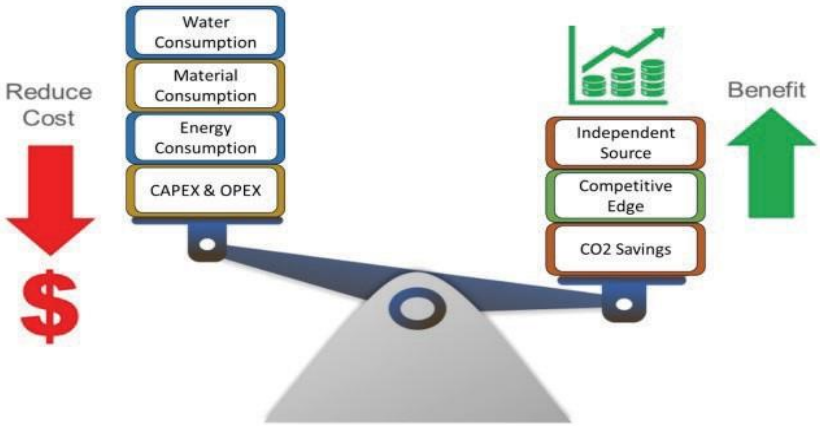

Figure 2: Cost reduction and benefits of resource efficiency

Key takeaways:

• Self-auditing and benchmarking: The key steps of self-auditing, benchmarking, and identifying savings opportunities within an industrial facility begin with the facility's technical team, including the operational and/or maintenance teams. The identified saving opportunities can be summarized and reported to upper management to enable informed decision-making regarding implementation. Alternatively, they can serve as the basis for requesting the services of a specialized company or supplier to implement the opportunity. The key steps and workflow of the team are discussed and presented below.

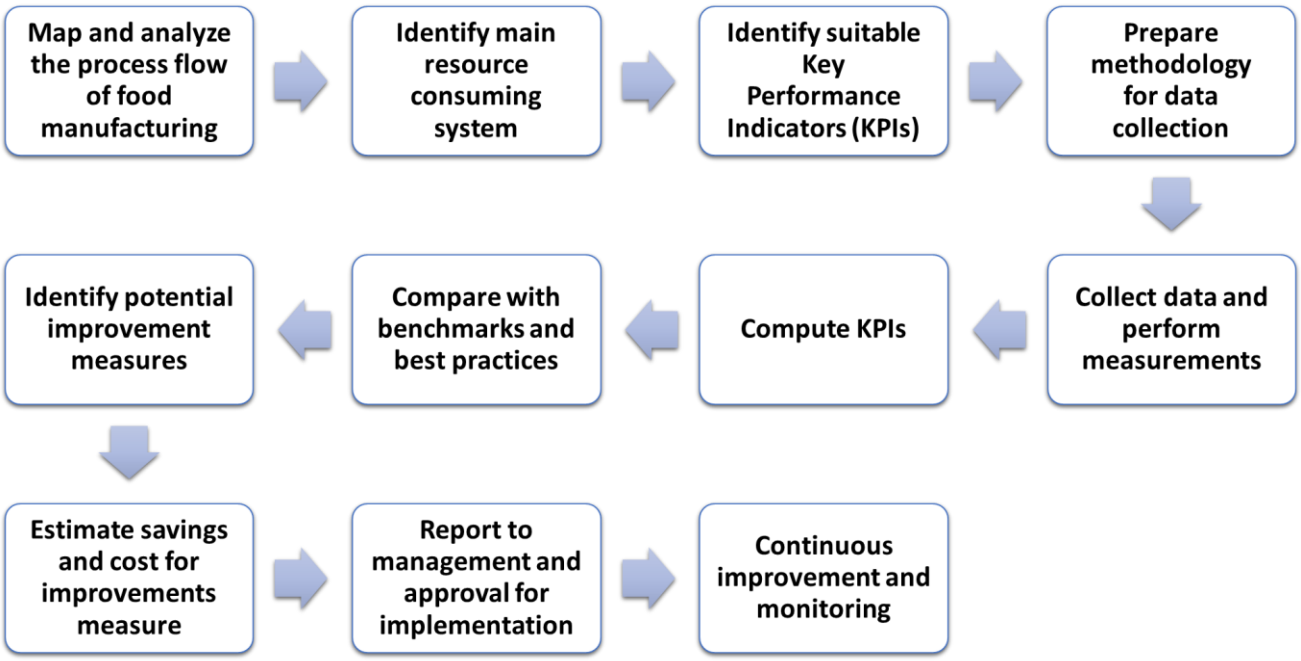

Figure 3: Self-auditing and benchmarking workflow

• Energy efficiency: The guide identifies several opportunities for energy savings in the sector, including optimizing motor systems, pumps, and compressed air systems. This involves upgrading to more efficient equipment, improving maintenance practices, and utilizing technologies such as variable speed drives (VSDs) to match energy consumption with demand.

• Water conservation: Recommended strategies can include upgrades to water-efficient equipment, optimizing water use in various processes, and implementing wastewater treatment and reuse strategies.

• Solid waste management: Waste not only poses environmental hazards but also significantly impacts resource efficiency and operational costs. Any food and solid waste generated means that the energy and water used to process these materials, along with other resources such as labor, have also been wasted. However, by adopting waste-saving and valorization measures, businesses can optimize resource utilization, enhance operational efficiency, and reduce costs while promoting environmental sustainability. The guide suggests strategies for minimizing waste generation, improving recycling efforts, and converting waste into valuable by-products, which can significantly reduce disposal costs and replace resource-intensive alternatives.

B. Resource efficiency in the bio-based economy

Resource utilization encompasses all resources, including raw materials, water, and chemicals as inputs, as well as waste and pollution as non-product outputs. Resource utilization is crucial for companies seeking to enhance their profitability while also reducing their environmental impact. It involves the efficient use of all available natural resources—ranging from raw materials to energy and water—across various stages of production. By optimizing resource utilization, companies can reduce operational costs and minimize waste, thereby contributing to environmental sustainability. This approach is particularly significant in the Egyptian market, where diverse resources such as municipal waste, biomass, and agricultural by-products can be transformed into valuable products. Given that resources are increasingly costly and scarce, optimizing the use of these materials not only contributes to economic growth but also addresses the pressing challenge of resource depletion, ensuring a more sustainable and resilient supply chain for the future.

The bio-based economy presents promising opportunities for SMEs seeking to improve resource efficiency while capitalizing on high-growth investment sectors. By transforming agricultural and industrial waste into valuable products, businesses can mitigate their environmental impact and generate substantial revenue streams. For example, transforming fruit waste into fruit concentrates for the food and feed industries not only reduces organic waste but also provides an affordable and sustainable source of ingredients. SMEs investing in this area can address both environmental challenges and market demand.

Similarly, recycled paper made from agricultural waste presents a cost-effective and eco-friendly alternative to conventional paper, supporting both the consumer market and sustainable practices.

Other bio-based ventures also present high investment potential. Pulp derived from sugarcane bagasse offers a renewable feedstock for the paper industry, which can lead to reduced reliance on forest resources. Moreover, producing ethanol from sugarcane molasses for the pharmaceutical industry enables SMEs to contribute to a greener pharmaceutical supply chain.

Agricultural waste can also be repurposed into medium-density fiberboard (MDF) for the wood industry, enhancing the circular economy by minimizing raw material consumption.

Additionally, agro-industrial waste can be converted into specialized biochemicals, offering new opportunities for SMEs in niche markets with high-value-added products.

For SMEs interested in these investment opportunities, the Climate and Environment Investment Unit (CLEIU) of the Ministry of Environment publishes green investment opportunities, including a fact sheet for each investment opportunity enlisting its potential markets, required technologies, estimated capital requirements, and guidance on initiating the operational process. For further information, SMEs are encouraged to explore CLEIU's website for more details: https://clei.moenv.gov.eg/investment-opportunities/

2.3 Opening new markets

Greening SME operations and increasing sustainable practices can significantly open new market opportunities for SMEs across business-to-consumer (B2C), business-to-business (B2B), and business-to-government (B2G) models.

In B2C models, companies that offer eco-friendly consumer goods, such as organic food products or biodegradable packaging, have seen increased demand as sustainability becomes a priority for individual buyers. By incorporating traceability into their supply chains, these businesses provide transparency about the environmental impact of their products, appealing to conscious consumers who prioritize eco-friendly purchases. Export markets have also embraced such B2C models, particularly for products that meet international sustainability standards.

In B2B markets, businesses have thrived by offering eco-friendly solutions to other companies. For instance, a supplier offering recycled raw materials or sustainable packaging solutions helps other firms reduce their environmental footprint, meeting their own sustainability goals. Extended producer responsibility (EPR) plays a crucial role in this context, as companies are increasingly expected to manage the lifecycle impact of their products. By offering services that facilitate compliance with EPR regulations, such as waste recovery, recycling, or product take-back programs, B2B companies find themselves well-positioned to

grow both domestically and internationally.

B2G models have gained traction as governments prioritize sustainability in procurement. Businesses offering green infrastructure, renewable energy systems, or environmentally friendly construction materials can benefit from government contracts that emphasize environmental impact. These companies not only meet the green criteria set by public sector tenders but also contribute to long-term sustainability goals. By leveraging traceability and EPR concepts, B2G models ensure that their green solutions are both accountable and aligned with the regulatory frameworks that governments enforce, opening doors to more significant projects both locally and in export markets.

3. How to green operations: Key strategies and support available for greening SMEs

This section focuses on how to start a green business or green an existing SME. The subsection includes data that is valid as of April 2025. If your organization would like to be listed in the directories or if you have updated information on the website, please email cleiu@moenv.gov.eg

3.1 An overview of enabling policies and incentives

This section aims to support SMEs in navigating enabling policies and incentives, including opportunities for:

- Networking and access to different markets, including tendering platforms, marketplaces, export support, and matchmaking events;
- Access to finance, including tax exemptions, feed-in tariffs, carbon credits, and green financing facilities;
- Access to knowledge and technical assistance, including green SME support programs, BDS services, and market data;
- Access to land, streamlined establishment processes, and reduced establishment investment costs;
- Research services, including both private and public sector providers;
- Licensing and standards setting across the green sectors;
- Other supporting measures.

The mapping is designed to give an executive summary of available support from the public and private sectors to assist SMEs in greening their existing operations or venturing into a green business opportunity. For the mapping, please refer to the CLEIU website, the section titled "Investment support services" and find access to the policy mapping in the sub-section titled "Policies and incentives for green SMEs" by following this link:
https://clei.moenv.gov.eg/investment-support-services/policies-and-incentives-for-green-smes

3.2 Accessing green finance and investments

Green financing facilities specifically support businesses that aim to grow while reducing their environmental impact through greener operations. This section of the guide aims to support SMEs in exploring various green financing options, including debt financing, equity financing, grants, and other development financing programs. It is essential to align the choice of financing mechanisms with the business's strategic plan and specific financing needs. Expert support may be useful in assessing financing offerings. The guide's green SME stakeholder mapping section includes various entities that may offer relevant support. The listing includes:

- Mapping public information on debt-lending non-governmental institutions (NGOs), microfinance institutions (MFIs), financial technology firms (Fintech), and banking institutions with dedicated green finance products. The mapping includes:
  - Finance product;
  - Description;
  - Use of funds (OPEX, CAPEX);
  - Clients or types of projects;
  - Conditions;
  - Interest rate;
  - Link to the product on the institution's website.
- Mapping public information on equity-financing entities, including angel investor groups, venture capital funds, and early private equity funds with a history or an interest in investing in green sectors. The mapping includes:
  - Institution's name;
  - Green sectors they have invested in;
  - Link to the institution's website.
- Mapping publicly available grants for green sectors with eligibility for the Egyptian market.

For the mapping, please refer to the CLEIU website, the section titled ''Green Finance'' by following this link:
https://clei.moenv.gov.eg/green-finance

Call for Participation: The mapping leverages publicly available information on various green financing products and funds, presenting data as of April 2025. Further support can be available by reaching out to the CLEIU at the Ministry of Environment through the following email: cleiu@moenv.gov.eg

3.3 Networking

A. Partnership development approach

Increasing your environmental impact and greening your business operations can be significantly enhanced by collaborating with the right partners along your value chain. These partners can provide the necessary resources, expertise, and support to effectively implement

sustainable practices. This section of the guide aims to assist SMEs in identifying and engaging with various partners, as well as developing a green SME stakeholder directory for further support. The partnership development approach outlined below is based on the successful outcomes of the UNIDO IGGE project, which used business linkages as a core strategy to promote the growth of green start-ups and SMEs.

By adopting this proven methodology, the guide strongly advocates for the consistent and systematic use of partnerships to enhance companies' value propositions, strengthen their competitive advantage, and positively impact their environmental footprint.

Figure 4: UNIDO IGGE partnership development approach

1. *See the whole picture first: Map the value chain*

Key takeaway: Aim to see the complete picture of the industry, including the roles played by different entities, to identify synergies that align with different roles and incentives.

- Create a comprehensive flowchart: Develop a detailed flowchart that outlines the entire value chain, from raw material sourcing to production, distribution, consumption, and disposal.
- Identify key stakeholders and processes: Highlight critical processes and potential stakeholders at each stage. This step provides insight into who can support as a partner to optimize operations, introduce innovation, help with customer outreach, or enhance sustainability.
- Clarify stakeholder roles and incentives: Define the expectations for each potential partner and their benefits based on a partner's needs analysis.

2. *Prioritize: Identify areas for strategic intervention*

Key takeaway: Everything you say "yes" to automatically means saying "no" to something else due to limited time and resources; therefore, choose wisely.

- Align with business objectives: A successful partnership must align with the business goals and marketing objectives. Build partnership proposals that contribute the most to the company's growth plan.
- Pinpoint high-impact areas: Determine which stages in the value chain offer the most significant opportunities to add value to customers and strengthen the company's value proposition.

3. *Research potential partners*

Key takeaway: Building on existing market knowledge enables a company to utilize resources and build effective partnerships.

- Identify well-positioned partners: Look for partners who excel in key areas that can help in achieving the company's goals.
- Utilize networks and directories: Use published stakeholder directories, industry networks, and professional associations to find potential collaborators.
- Design mutual-value creation: Consider how the partnership will benefit both parties, ensuring potential partners also see clear advantages in collaborating with you.

4. *Evaluate partner credentials*

Key takeaway: Understanding prospective partners well enables risk mitigation and further value addition from a partnership.

- Conduct essential due diligence: Assess the credibility, track record, capabilities, and alignment of potential partners with your company's sustainability and business goals. Examine their certifications, past projects, client testimonials, and industry standing.
- Ensure value alignment: Assess whether their corporate values and practices align with your company's, particularly in terms of sustainability and ethics.

5. Engage and collaborate

Key takeaway: Networking is a valuable skill that enhances your company at every stage. Make it a habit, engage strategically, align initiatives, and build lasting relationships.

- Network regularly: Networking opens doors to various partnerships and can occur digitally by being active on professional networking platforms, such as LinkedIn, or participating in key industry events, joining relevant organizations like export councils, chambers, and other professional affiliations, and through personal and professional referrals.
- Initiate contact: Reach out to potential partners through referrals whenever possible; otherwise, use professional digital channels, such as their website, LinkedIn page, or social media channels.
- Establish clear communication: Clearly define collaboration objectives, roles, responsibilities, and mutual expectations from the outset.
- Formalize agreements through contracts or Memoranda of Understanding (MOUs).

6. Monitor and scale up or down accordingly

Key takeaway: While a new partnership can be very optimistic at first, it is essential to stay grounded in operations; therefore, observe and gradually scale the partnership up or down according to performance.

- Define specific key performance indicators (KPIs) to measure the partnership's effectiveness, such as cost reduction, environmental impact, customer satisfaction, and innovation milestones.
- Start small and gradually scale up: Begin with pilot projects to test partnership dynamics and expand progressively as trust and synergy develop.
- Consistent communication: Establish regular check-ins and reporting mechanisms to maintain alignment and address issues promptly.
- Regularly assess the partnership's performance against established KPIs and make necessary adjustments.
- Seek continuous improvement: Look for opportunities to review the partnership, explore new areas of collaboration, and adapt to changing market conditions.
- Engage wider stakeholders: Include calls to action encouraging customers, suppliers, and other stakeholders to engage with the partnership's objectives.

B. Green SME support directory

This section of the guide provides an overview of Egypt's green SME stakeholders. The aforementioned partnership development approach can be applied to assess and engage with the entities listed in this directory. The mapping includes organizations offering the following services:

- Awareness raising and advocacy;
- Incubation and acceleration;
- Research centers;
- Networking;
- Technical assistance and market development programs;
- Governmental support for green SMEs;
- Export support service providers (public and private sectors);
- Agriculture supply chain service providers;
- Sustainable energy service providers;
- Waste management service providers;
- Water treatment service providers;
- Sustainable building service providers;
- Others.

Disclaimer: This directory is the result of secondary research on entities with an established track record and an active digital presence, as validated by industry experts. Please note that this list does not represent the entire ecosystem of green SME support, nor does it endorse the listed companies. It is a sample of active entities within the green SME support field at the time of publishing this guide.

Call for Participation: The mapping leverages publicly available information on various green SME support entities and presents data as of April 2025. Further support can be made available by reaching out to the CLEIU at the Ministry of Environment through the following email: cleiu@moenv.gov.eg

The selection criteria for companies that will be included in the directory include legal registration, an established operational track record, positive customer feedback, a strong market reputation, and compliance with environmental practices and standards.

For the directory, please refer to the CLEIU website, the section titled **''Investment support services'',** and find access to the stakeholders' directory in the sub-section titled **''Green SMEs Stakeholders directory''** by following this link: https://clei.moenv.gov.eg/investment-support-services/green-smes-stakeholders-directory/

4. Conclusion

In conclusion, this guide provides SMEs with the necessary tools to navigate the green economy and capitalize on the growing opportunities it presents. By recognizing the benefits of going green, such as cost reduction, access to new markets, green financing, and technical assistance, in parallel to contributing to enhanced climate resilience, businesses can position themselves for sustainable growth.

The guide outlines practical steps to greening an SME's operations, from leveraging enabling policies and incentives to accessing green finance and building strategic partnerships. By following this roadmap, SMEs can reduce their environmental impact while strengthening their competitiveness in local and global markets.

This guide presents data that is valid as of April 2025; further support can be available by reaching out to the CLEIU at the Ministry of Environment through the following email: cleiu@moenv.gov.eg