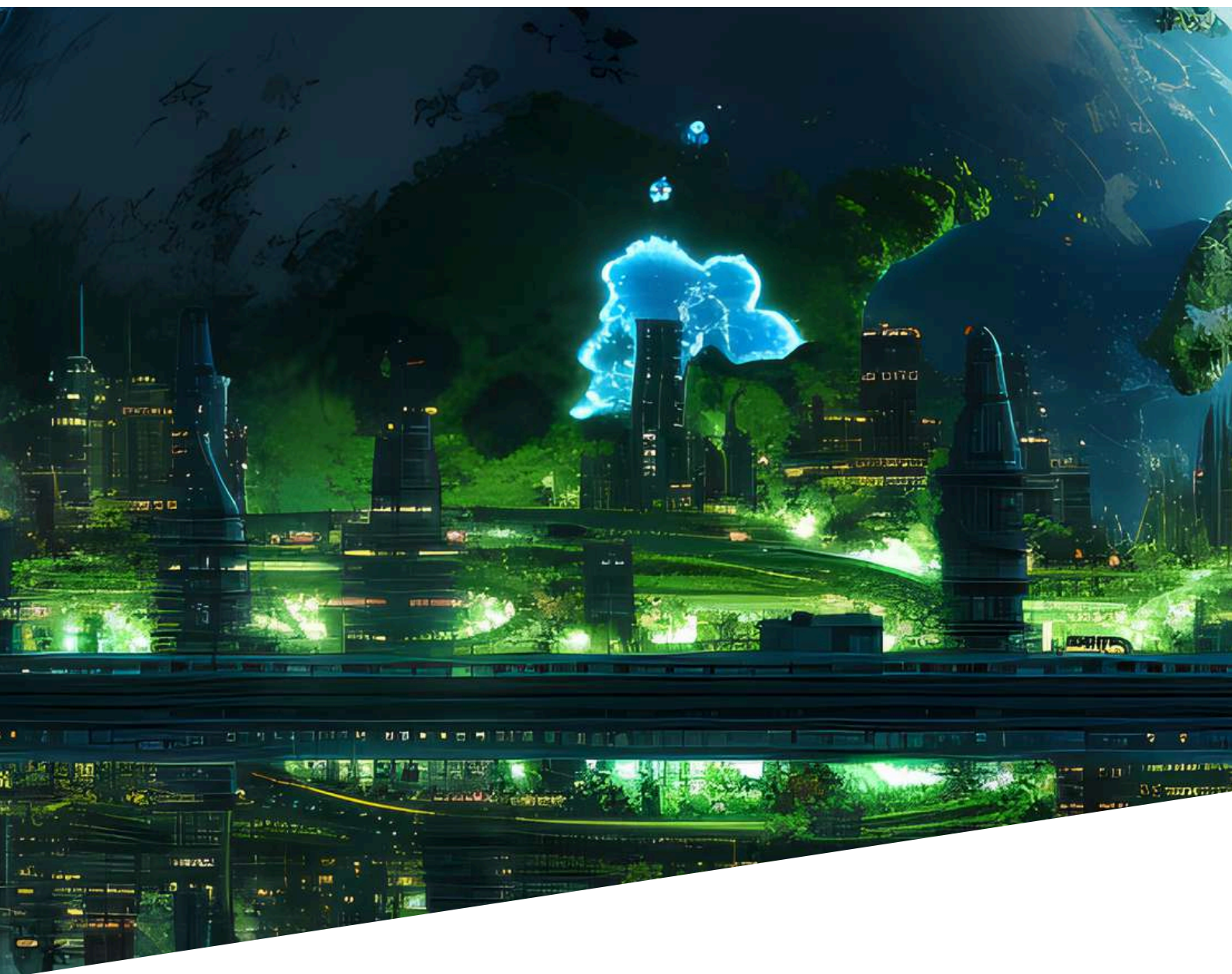




EuroMed Cluster Innovate Webinar Clusters as Catalysts for Green Tech Innovation & Sustainability in the South Med Region ⁽¹⁾

Webinar key Messages & Reporting
29th of January 2026

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EXECUTIVE SUMMARY

The EuroMed Cluster Innovate Webinar on ***“Clusters as Catalysts for Green Tech Innovation & Sustainability in the South Mediterranean Region”*** brought together policymakers, cluster managers, industry representatives, researchers, and development partners to examine the role of clusters in advancing green and digital transitions across the region. As highlighted in the report, Green Tech—encompassing renewable energy, circular economy solutions, water technologies, and digital enablers—has emerged as a strategic pillar for sustainable growth, industrial competitiveness, and climate resilience in the South and East Mediterranean (SEM). Within this context, clusters are increasingly recognised as key platforms that connect innovation ecosystems, facilitate value chain integration, and support the deployment of scalable green solutions.

Discussions throughout the webinar underscored that clusters are evolving beyond traditional networking structures into operational actors that actively bridge gaps between research, industry, finance, and policy. They play a critical role in supporting SMEs and startups by fostering collaboration, enabling access to markets and financing, and facilitating the adoption of digital and sustainable practices. However, participants also highlighted persistent structural challenges, including limited access to finance beyond early-stage funding, regulatory fragmentation, skills gaps, and weak integration of SMEs into large-scale green value chains. These constraints often prevent promising innovations from reaching commercial scale and limit the broader impact of Green Tech ecosystems in the region.

The webinar ultimately emphasised that unlocking the full potential of Green Tech in the South Mediterranean requires a systemic and coordinated approach. This includes strengthening policy coherence, improving regulatory frameworks, expanding tailored financing mechanisms, and enhancing ecosystem coordination across macro (policy), meso (clusters and business support organisations), and micro (SMEs) levels. Clusters, in this regard, are positioned as strategic enablers of this transformation—capable of linking local capacities with global opportunities and driving inclusive, sustainable industrial development.

INTRODUCTION

As countries across the South and East Mediterranean (SEM) region accelerate their ecological and digital transitions, Green Technologies (Green Tech) are increasingly recognised as a strategic pillar for sustainable economic growth, industrial competitiveness, and climate resilience. Green Tech encompasses a wide range of solutions, including renewable energy and energy efficiency, circular economy and waste valorisation, green hydrogen, water technologies, and digital tools that enable resource efficiency and decarbonisation. Together, these technologies support the shift towards low-carbon, resource-efficient, and more resilient economic systems.

Within this transition, clusters are widely perceived as effective instruments to foster industrial development, generate positive spillovers, and strengthen value chains in emerging economies. In the South and East Mediterranean region, cluster development has gained increasing attention as countries seek to enhance their competitiveness, export potential, innovation capacity, and integration into regional and global markets. Despite differences in maturity, governance models, and sectoral focus, many clusters are now active across the region, with varying levels of performance and resilience. Against this background, **the Euro-Mediterranean Forum of Institutes of Economic Sciences (FEMISE) and the Economic Research Forum (ERF)** organised the webinar “**Clusters as Catalysts for Green Tech Innovation & Sustainability in the South Med Region**” as part of the EuroMed Cluster Innovate Webinar Series, implemented under **the EuroMed Clusters Forward (ECF) project**

The webinar series provides a regional platform to examine sector-specific and cross-cutting challenges affecting Mediterranean value chains, while fostering dialogue among cluster managers, policymakers, private sector actors, researchers, and development partners. The Green Tech webinar focused on the role of clusters in enabling ecological transition across the SEM region. It builds on ECF’s mapping and analysis of the regional cluster landscape, which identified around **38 clusters active** in, or closely linked to, Green Tech sectors such as renewable energy, energy efficiency, sustainable construction, agrifood and circular economy, and ICT-based enablers of sustainability. These clusters represent strategic platforms capable of connecting research, industry, and policy, while supporting the emergence of green value chains across the Mediterranean.



Objectives and Framing of the Webinar:

The webinar aimed to explore how clusters can act as catalysts for Green Tech innovation and deployment, while addressing persistent structural challenges faced by SMEs and startups in the region. In particular, the discussion sought to examine:

- How clusters move beyond networking functions to become operational platforms supporting innovation, industrialisation, and market integration;
- How Green Tech clusters can help position the SEM region as a hub for emerging green industries, while responding to local development needs;
- How SMEs and startups can be better integrated into regional and global green value chains, including through cross-border cooperation and partnerships;
- What ecosystem-level conditions — policy frameworks, financing mechanisms, skills development, digitalisation, and governance — are required to enable scale and long-term impact.

To address these objectives, the webinar was structured around two complementary panels, each guided by targeted questions to frame the discussion.

Panel Structure and Guiding Questions

Panel 1: Clusters in Action – Catalyzing Green Tech Solutions Across the South Med focused on the practical and operational role of clusters.

The discussion was guided by questions addressing:

- The concrete challenges faced by green and circular economy start-ups across different national contexts;
- How clusters and technopoles support collaboration between SMEs, start-ups, research institutions, and industry;
- The role of digitalisation and Industry 4.0 tools in enabling green industrial transformation;
- Lessons learned from cluster-led initiatives that could be replicated across the South Med region;
- The value of cross-border cluster cooperation in accelerating technology transfer and innovation.

Panel 2: Ecosystem Enablers for Green Tech – Policy Reform, SME Support & Financing for Value Chain Integration shifted the focus to the broader enabling environment. The guiding questions explored:

- Policy gaps and misalignments slowing Green Tech adoption and green value chain development;
- The role of governance, regulatory frameworks, and coordination between public and private actors;
- Barriers to financing and scaling Green Tech projects, particularly in emerging and fragile contexts;
- How SMEs and local suppliers can be better integrated into large-scale green energy and infrastructure projects;
- The role of Business Support Organisations (BSOs), clusters, and regional programmes in bridging the gap between policy objectives and on-the-ground realities.

By combining cluster-level experience with ecosystem-wide policy and financing perspectives, the webinar contributed to ECF's broader objective of strengthening Mediterranean clusters as drivers of innovation, sustainability, and regional integration. It also aimed to inform future policy toolkits, cooperation mechanisms, and investment strategies that support Green Tech development across the South Med.

The discussions highlighted the need to move beyond isolated interventions and to adopt coordinated, multi-level approaches linking macro-level policy reform, meso-level ecosystem support, and micro-level firm capabilities. This report documents the key insights, experiences, and recommendations emerging from the webinar, with the aim of informing policymakers, development partners, and ecosystem actors engaged in advancing the Green Tech agenda in the Mediterranean region.





DISCUSSION OVERVIEW & KEY INSIGHTS

Introduction and Overview: Unleashing Green Tech in the SEM: Strategic Trends & the Role of Clusters

Maryse Louis, General Manager, FEMISE

Opening Remarks & Webinar Framing

Maryse Louis opened the webinar by situating it within the framework of the EuroMed Cluster Forward (ECF) project and the EuroMed Cluster Innovate webinar series, organised by FEMISE with the support of ANIMA and ERF.

She highlighted that the session forms part of a broader regional effort to strengthen clusters as drivers of innovation, competitiveness, and sustainable industrial development across the South Mediterranean. She framed the discussion around the dual challenge facing the region: advancing sustainable economic growth while responding to climate change and accelerating digital transformation.

She stressed that the green and digital transitions must go hand in hand, with Green Tech positioned at the heart of this intersection. Green Tech was presented as a cross-cutting sector covering renewable energy, circular economy, sustainable construction, agri-food innovation, and ICT-based solutions that improve resource efficiency. In this context, clusters were described as strategic enablers, facilitating collaboration among SMEs, startups, research institutions, financial actors, and industry to stimulate innovation and support implementation.

Maryse also referred to the mapping conducted under the ECF project, which identified 38 clusters across the region linked to Green Tech sectors, demonstrating both the growing dynamism of the ecosystem and its strategic relevance. She concluded by underlining the objectives of the webinar: to share practical cluster experiences, examine the challenges affecting value chain integration, and explore how policy frameworks, financial mechanisms, and regional cooperation can strengthen Green Tech clusters and position the South Mediterranean as a competitive hub for sustainable industries.



Emmanuel Noutary, General Delegate, ANIMA Network

Strategic Overview of EuroMed Cluster Forward & Regional Green Tech Cooperation

Emmanuel Noutary positioned Green Tech as a central pillar of EuroMed cooperation, highlighting the role of the EuroMed Cluster Forward (ECF) project, coordinated by ANIMA since 2020. The project aims to strengthen clusters, support innovation-driven industrial upscaling, and develop regional value chains between Europe and Mediterranean countries, while advancing both digital and sustainable industrial transitions. He outlined the project's three main pillars: Policy enhancement, supporting reforms related to industrial upscaling, technology transfer, and cluster development; Cluster capacity building, through training, benchmarking visits, technical assistance, and governance strengthening; Value chain activation, via business matchmaking events (Tech Days) and support for multi-country collaborative projects.

Noutary emphasised the growing importance of Green Tech clusters within the region. According to ECF mapping, approximately 15% of identified clusters operate in the energy sector, and 11% are specifically dedicated to Green Tech, with Egypt, Morocco, and Tunisia showing particularly advanced ecosystems. He highlighted several cross-border initiatives supported under ECF, including projects in circular economy, sustainable industry, eco-design, green hydrogen, water technologies, and industrial decarbonisation. These collaborations demonstrate the potential of cluster-led partnerships to activate regional value chains and accelerate technology transfer.

Beyond achievements, he identified key structural challenges. A major concern is regulatory harmonisation, particularly in relation to the EU Carbon Border Adjustment Mechanism (CBAM). He stressed the need for South Mediterranean countries to develop national carbon compensation mechanisms and called for adjustments to CBAM to better account for transport distances and regional proximity. He also underscored gaps in technical expertise across areas such as circular economy, eco-design, carbon footprint assessment, and energy transition, noting that ECF academies and training initiatives aim to strengthen regional capabilities. At the national level, emerging needs include improved access to finance, vocational training, and technology transfer mechanisms to support industrial decarbonisation. Overall, his intervention reinforced the importance of coordinated regional action, regulatory alignment, and cross-border cluster cooperation to position the South Mediterranean as an integrated and competitive Green Tech ecosystem.



Stella Tsani, Associate Professor of Economics, National and Kapodistrian University of Athens (NKUA), Greece

Clusters as Connectors Between Global Innovation and Local Capacity

Stella Tsani framed her intervention around the accelerating pace of technological innovation in the green energy transition and the Mediterranean region's particular vulnerability to climate change. She highlighted that the Mediterranean is warming approximately 20% faster than the global average, underscoring the urgency of advancing energy transition pathways that safeguard both present and future welfare. While recognising the rapid development of green technologies—often driven by large international players and embedded within established global supply chains—she cautioned that the benefits of such innovations do not automatically translate into meaningful local impact. In the South Mediterranean, the critical challenge lies not in the availability of technology, but in ensuring that its integration reflects local capacities, local content, and local socio-economic realities.

She emphasised that the region possesses significant assets, including strong human capital, technical expertise, natural resources, and strategic proximity to European markets. However, without structured mechanisms for coordination, there is a risk that large-scale renewable energy projects—such as the Benban Solar Park in Egypt or similar initiatives in Morocco and Tunisia—remain disconnected from local innovation ecosystems. Rather than reiterating the well-known advantages of clusters, Tsani focused on a less explored dimension: their role as strategic connectors. Clusters can act as hubs that bridge global technological innovation and international policy developments with local actors, SMEs, research institutions, and communities. By fostering dialogue among diverse stakeholders—industry, academia, financiers, and policymakers—they create spaces where innovation can be adapted to regional needs and contribute to inclusive development.

Her central message was that green transition should not be viewed merely as technological adaptation, but as a broader process of socio-economic and environmental transformation. Clusters are uniquely positioned to ensure that local capacities, requirements, and innovation potential are integrated into global value chains, thereby enhancing the long-term sustainability and resilience of the Mediterranean region.



Panel 1: Clusters in Action: Catalyzing Green Tech Solutions Across the South Med

The first panel focused on the practical role of clusters in accelerating green technology adoption and supporting innovation across the South Mediterranean region. Discussions explored how clusters operate on the ground to support startups and SMEs, facilitate collaboration between research and industry, and address structural barriers to scaling green solutions within local ecosystems. The session brought together diverse cluster experiences from across the region, highlighting operational challenges, lessons learned, and concrete mechanisms through which clusters contribute to green and digital transformation. The panel was moderated by **Mohammed Aljafari, Investment Consultant & Sustain MENA Partner, Jordan**, who guided the discussion around cluster impact, ecosystem readiness, and pathways for scaling green innovation.

Ingrid Salloum, Cluster Manager, KIMA Waste Valorisation Cluster – Berytech, Lebanon

Addressing Structural Barriers in Fragile Ecosystems

Ingrid Salloum provided a grounded and practical perspective on the realities facing green and circular economy startups in Lebanon. As Cluster Manager of the Qeema Waste Valorisation Cluster—a relatively young initiative operating in a challenging economic and institutional context—she emphasised that the primary barriers facing startups are not technological, but structural.

She identified three core challenges. **First, fragmentation across the waste value chain significantly limits scaling potential.** Even when startups develop strong technical solutions, weak coordination among actors leads to irregular waste inputs, inconsistent quality and volume, and operational instability. **Second, market uncertainty—including unclear pricing structures, unstable demand, and weak contractual frameworks—makes it difficult for startups to grow sustainably.** Third, **startups face limited access to decision-makers and operational partners, including municipalities, industrial actors, and buyers.** As a result, many are forced to address systemic issues—such as improving waste collection or sorting systems—that fall beyond their operational capacity at early stages.



Within this context, the cluster does not claim to resolve structural deficiencies, but rather acts as a facilitator and connector. Qeema provides a platform where start-ups can engage with established companies, access mentorship, build partnerships, and connect with buyers and service providers. Knowledge sharing and peer learning are central components of this support model. Salloum also stressed that innovation in fragile contexts is not necessarily technological—it often involves improving processes and service delivery within existing systems. A key lesson learned is that start-up success depends not only on having the right solution, but on whether the ecosystem is ready to absorb and scale it. Rather than replicating global best practices without adaptation, Qeema adopts a pragmatic, locally grounded approach—prioritising relevance, building trust gradually, and focusing on incremental progress. Starting small while maintaining a long-term vision has been essential to building credibility and sustainable impact in Lebanon’s green ecosystem.

Mahmoud Othman, Technical Manager, Industry 4.0 & Digitalization Innovation Center (InJo 4.0), Jordan

Digitalisation as a Gateway to Green Industrial Transformation

Mahmoud Othman presented InJo 4.0 as a non-profit innovation hub dedicated to Industry 4.0 technologies and industrial transformation in Jordan and the wider region. The centre works closely with SMEs and manufacturing firms through awareness-raising, hands-on training, digital maturity assessments, and tailored consultancy services. A core component of their approach is assessing the “as-is” digital maturity of factories—covering processes, technologies, and organisational dimensions—before designing practical and prioritised digital transformation roadmaps. These roadmaps are explicitly aligned with business drivers and support energy efficiency, resource optimisation, and broader green transition objectives.

From his field experience, Othman identified **three main challenges facing SMEs: cost, risk, and skills gaps**. While many firms recognise the importance of digital and green solutions, they often lack clarity on how to justify investment or where to begin. To address this, InJo 4.0 adopts a step-by-step approach—starting with awareness and capacity building, followed by pilot projects and use cases that demonstrate measurable value before scaling. He highlighted energy monitoring, data analytics, and process optimisation as practical entry points for SMEs. By linking digitalisation directly to cost savings, operational efficiency, and competitiveness, the centre helps reduce uncertainty and position sustainability as a business opportunity rather than a compliance burden.



Othman further identified four critical enabling factors for green technology adoption:

- **Collaboration and partnerships** among clusters, academia, technology providers, and industry;
- **Skills and awareness**, including continuous training for both technical teams and decision-makers;
- **Business-driven sustainability**, where green solutions are tied to return on investment and resilience;
- **Policy support and access to finance**, including incentives and funding mechanisms to help SMEs move beyond pilot stages.

Overall, his intervention underscored the importance of competency centres and clusters as bridges between technology, sustainability, and real industrial needs, enabling SMEs to translate digital and green transformation into tangible business value across the value chain.

Muhammad Said Saad, Executive Director, Egypt Industry Association (Egypt4Industry)

Connecting Digital Transformation to Green Industrial Competitiveness

Muhammad Said Saad highlighted Egypt's scale and dynamism as a major industrial market, with approximately 120 million consumers and thousands of factories across diverse sectors. While this scale presents strong opportunities for green and digital transformation, it also creates complex ecosystem-level challenges. He emphasised that digitalisation is the cornerstone of sustainability in the industrial sector. Egyptian factories increasingly recognise the value of adopting digital solutions to enhance efficiency, reduce costs, access new markets, and valorise waste streams. The country also benefits from a diverse technological ecosystem, ranging from long-established solution providers to innovative startups, with Egyptian firms playing a leading role in digital transformation projects across the wider region.

Despite this strong appetite, several barriers persist. On the factory side, challenges include identifying suitable solutions, assessing readiness in terms of infrastructure and human capital, and securing financing for transformation projects. On the solution provider side—particularly for startups and SMEs—limited marketing capacity and difficulties reaching the right customers hinder market access. Even when demand exists, financing gaps often stall implementation.



In response, the Egypt Industry Association positions itself as an ecosystem connector, operating through four main pillars:

- Awareness and outreach, through tech days, workshops, and industrial zone visits across Egypt;
- Transformation support, including assessments, roadmap design, RFP drafting, and sustainability-focused interventions;
- Matchmaking, linking technology providers with factories and facilitating access to funding programmes;
- Financing enablement, working with regional partners such as ANIMA and Berytech to connect firms to appropriate financial instruments.

Saad also underscored the importance of cross-border cluster collaboration, noting ongoing partnerships with clusters in France and Morocco. He argued that Mediterranean markets share similar industrial characteristics, allowing successful use cases to be adapted across countries rather than “reinventing the wheel.” Regional cooperation has expanded the portfolio of solutions available to Egyptian factories and strengthened knowledge exchange. Overall, his intervention illustrated how cluster-based coordination and regional partnerships can bridge the gap between digital innovation and green industrial transformation, while reinforcing the competitiveness of SMEs within broader value chains.

Amina Lamouchi, Project Manager, Société de Gestion de la Technopole de Borj Cédria (Tunisia)

Building Integrated Innovation Ecosystems for Green Value Chains

Amina Lamouchi presented the Technopole of Borj Cédria as a fully integrated innovation ecosystem designed to bridge research, entrepreneurship, and industry. Unlike a traditional science park, Borj Cédria combines four specialised research centres (energy, biotechnology, materials, and water technologies), three academic institutions, and an incubator operated by a dedicated management company. This structure was intentionally created to avoid siloed work and ensure daily interaction between researchers, startups, and industrial actors. The technopole supports the full innovation cycle—from applied research to market deployment. Research centres generate scientific knowledge in strategic green sectors, while the incubator provides startups with mentoring, technical support, access to laboratories and testing platforms, and guidance on intellectual property and market strategy.



Dedicated industrial zones within the technopole further enable pilot testing, validation, and deployment at scale, reinforcing its role as an interface between innovation and industry. More broadly, Lamouchi described the Tunisian cluster landscape as promising but facing structural constraints. Strengths include high-quality human capital, strong research linkages with universities, and well-established incubation and technology transfer mechanisms.

These assets provide SMEs with access to skills and applied research in renewable energy, water technologies, sustainable materials, and agri-biotechnology. However, key gaps remain. SMEs often struggle to integrate into structured green value chains due to limited access to anchor industrial partners and first buyers. Financing is another major bottleneck: while seed funding is available, there is a shortage of patient capital to support pilot projects, demonstration phases, and industrial scaling. Additionally, stronger coordination is needed to align cluster initiatives with public policy, industrial strategies, and climate finance mechanisms. Lamouchi concluded that Tunisia possesses significant innovation potential, but unlocking scalable green value chains requires improved governance, better integration with industry, and stronger investment frameworks to translate innovation into long-term economic and environmental impact.

Mohammed Hajji, R&D and Innovation Officer, Green H2 Morocco Cluster (Morocco)

Bridging Research and Industrial Deployment in the Hydrogen Value Chain

Mohammed Hajji presented the Green H2 Morocco Cluster as an operational catalyst within the hydrogen ecosystem, focused on accelerating energy transition through concrete, deployable solutions. Specialising in hydrogen value chain programmes, the cluster works across the full spectrum—from renewable energy production and electrolyzers to energy conversion systems and downstream applications. He emphasised that clusters should not be seen merely as exchange platforms, but as structuring actors that connect stakeholders and translate research into industrial impact.

A central challenge in Morocco's hydrogen ecosystem is the limited valorisation of research outputs. Promising technologies often face obstacles such as insufficient financing, difficulty accessing demonstration and pilot phases, and weak linkages between research institutions and industrial actors.



As a result, innovation potential remains underexploited. The cluster addresses these gaps by acting as a bridge between startups, research centres, and industry, ensuring that scientific outputs respond to real market and industrial needs. It supports projects from early research stages through pre-industrial and industrial deployment, helping structure initiatives, integrate technological solutions, and navigate regulatory frameworks.

Green H2 Morocco operates through several complementary pillars: direct technical support to startups, facilitation of access to research and testing platforms, and project structuring to strengthen industrial readiness. It also provides indirect support by fostering collaboration between academia and industry, identifying existing solutions within research ecosystems, and promoting their integration into commercial applications. Hajji concluded that strengthening coordination and aligning innovation with market demand are critical to unlocking the hydrogen sector's potential. By filling coordination gaps and supporting industrial capacity building, clusters can serve as strategic levers for sustainable industrial development and energy transition in Morocco and beyond.



Panel 2: Ecosystem Enablers for Green Tech: Policy Reform, SME Support & Financing for Value Chain Integration

The second panel examined the broader ecosystem conditions required to enable green technology development and scale across the South Mediterranean region. The discussion focused on policy frameworks, financing mechanisms, SME support systems, and institutional coordination needed to strengthen green value chains and ensure effective implementation of the green transition. Panelists explored structural governance challenges, investment barriers, and the role of business support organisations, financial institutions, and public–private partnerships in creating an enabling environment for green innovation. The session was also moderated by **Mohammed Aljafari, Investment Consultant & Sustain MENA Partner, Jordan**, who steered the conversation toward practical policy solutions, ecosystem coordination, and pathways for strengthening regional integration.

Sarine Karajerjian, Program Director – Environmental Politics, Arab Reform Initiative (Lebanon)

Governance, Justice, and the Political Economy of Green Transition

Sarine Karajerjian approached green transition from a political economy perspective, stressing that the South Mediterranean region is far from homogeneous. Political systems, socio-economic realities, and historical trajectories differ significantly across countries, shaping how green transitions are imagined, financed, and implemented. She emphasised that green technologies are often framed narrowly as technical solutions or market opportunities, while overlooking their fundamentally political and distributive nature. Green transition raises critical questions: who controls energy systems, who benefits from the transition, and who bears its costs? In many cases, green strategies exist on paper but are not embedded within coherent political settlements governing energy, land use, employment, or social protection.

A central challenge across the region is weak governance and limited policy implementation. Drawing on research from the Arab Reform Initiative, Karajerjian noted that renewable energy laws and regulatory frameworks often exist but remain unenforced. In fragile or crisis-affected contexts such as Lebanon, short-term crisis management frequently overrides long-term environmental planning.



Without credible regulatory frameworks and institutional capacity, investments in grid modernisation or smart technologies cannot deliver sustainable results. She further highlighted that many countries in the region face overlapping crises—economic collapse, political instability, conflict, or humanitarian pressures—which create structural tensions when pursuing green transition. Expecting rapid decarbonisation in such contexts without addressing governance, justice, and socio-economic vulnerabilities risks deepening inequalities.

Linking her analysis to SMEs, she identified two priority areas. First, labour and social protection policies must be integrated into green transition strategies. Questions of job displacement, reskilling, and just transition mechanisms cannot be ignored. Second, SMEs require clearer and more supportive regulatory environments to enable scaling beyond early-stage initiatives. Karajerjian also stressed the importance of coordination and inclusive governance. In many fragile states, civil society organisations, municipalities, grassroots actors, and unions play critical roles in compensating for weak state structures. Strengthening coordination among these actors—through alliance-building, shared resources, and improved information exchange—is essential. She underscored the need for data centralisation and stronger links between research institutions, policymakers, and practitioners to avoid duplication and enhance impact. Her overall message was that green transition in the South Mediterranean must be understood not only as a technological or economic process, but as a political one. Effective coordination between policymakers, private sector actors, and civil society is not merely a matter of efficiency, but a political necessity to ensure that green technologies are implemented equitably, sustainably, and in ways that reinforce long-term resilience.

Ghada Darweesh, Country Director, Globeleq

Investor Perspectives on Risk, Regulation, and Local Value Chain Integration

Ghada Darweesh provided an investor's perspective on scaling renewable energy and Green Tech projects in the South Mediterranean. Drawing on Globeleq's experience as a utility-scale independent power producer operating across Africa, she highlighted that the fundamentals for renewable energy in countries such as Egypt are strong. Egypt benefits from excellent solar and wind resources, a clear national energy strategy, and a track record of delivering large-scale projects. However, despite these favourable conditions, scaling green technologies continues to face structural constraints.



According to Darweesh, the primary barrier is not technological capability but risk perception. Investors are particularly concerned with regulatory predictability, off-taker creditworthiness, and currency risk. In markets where revenues are generated in local currency while financing is secured in hard currency, foreign exchange exposure remains a major obstacle to mobilising long-term capital.

A second constraint lies in the complexity and fragmentation of permitting processes. Even when policies are supportive on paper, delays in land allocation, grid connection approvals, and environmental clearances increase uncertainty and raise financing costs. Time-related risks directly translate into higher risk premiums. She also highlighted the need for regulatory standardisation, particularly beyond mature sectors such as solar and wind. Emerging segments—including energy storage, hybrid systems, and green hydrogen—often lack clear regulatory templates and bankable frameworks, limiting their ability to scale. Addressing the role of SMEs, Darweesh noted that large renewable energy projects can sometimes operate in isolation, generating limited spillovers for local economies.

The core issue, however, is not the absence of capable SMEs, but a mismatch between project requirements and SME readiness. Large-scale projects demand strict quality standards, reliable timelines, and access to working capital, which many SMEs struggle to meet due to certification gaps, limited scale, or financing constraints. She emphasised that clusters and industry associations can play a transformative role by bridging this gap. Through joint certification programmes, training initiatives, pooled financing or guarantee mechanisms, and structured engagement with financial institutions, clusters can help SMEs meet technical and ESG standards. When adequately supported, SMEs can evolve from subcontractors to bankable partners, strengthening local value chains while improving project sustainability and execution. Her intervention underscored that effective regulatory frameworks, risk mitigation mechanisms, and structured SME integration are critical to unlocking the full economic potential of large-scale Green Tech investments in the region.



Batir Wardam, Private Sector Advisor – Green Business, GAIN Project (GIZ)

Strengthening SME Policy Voice, R&D Linkages, and Market Integration

Batir Wardam provided a policy-focused perspective on supporting green SMEs, drawing from his experience within the GAIN (Green Action in Enterprises) Project under GIZ. He began by distinguishing between two categories of green SMEs: those that are green by design—developing solutions in sectors such as water, energy, recycling, and waste valorisation—and those in traditional sectors seeking to green their operations.

These two groups face distinct structural and policy challenges. From a policy standpoint, Wardam highlighted a critical gap at the macro level: SMEs are largely absent from national policymaking processes, which tend to be dominated by government institutions and large industry representatives. While SMEs have limited influence over national-level frameworks, they can play a more meaningful role in shaping sectoral policies and practical policy tools. In this regard, his work focuses on connecting SMEs with policymakers through concrete instruments. Examples include the development of a Jordanian Eco-Label, enabling SMEs to certify environmentally friendly products and strengthen their national and export positioning, as well as initiatives around life-cycle assessment and environmental product declarations—tools that are increasingly necessary for accessing international markets.

A second major area of intervention concerns the link between SMEs and research and development institutions. In Jordan, many SMEs benefit from incubation programmes but lack sustained technical support once these programmes end. Green SMEs, in particular, require access to certified laboratories, testing facilities, and R&D infrastructure to refine products and move beyond the prototype stage. Strengthening partnerships between universities, innovation hubs, and SMEs is therefore essential for product maturation and industrial readiness. Access to finance remains a central challenge. Outside of the energy sector—where returns on investment are more evident—green SMEs face difficulty accessing traditional commercial finance. As a result, alternative financing mechanisms such as impact investment and angel investors are becoming increasingly important.

Wardam further emphasised the need to integrate SMEs into national value chains. While many SMEs attempt to export to highly regulated international markets, significant untapped opportunities exist domestically—particularly in linking SMEs with large industrial actors, agricultural producers, and real estate developers.



Limited consumer awareness of green products, however, reduces demand-driven incentives. Therefore, expanding domestic market access and strengthening connections with large-scale consumers are crucial. Overall, his intervention underscored that enabling green SMEs requires stronger policy inclusion, sustained R&D support, diversified financing mechanisms, and improved integration into local and national value chains.

Afef Ajengui, Regional Programme Manager – Green Forward, SPARK

Strengthening the Meso Level: Empowering Business Support Organisations as Ecosystem Bridges

Afef Ajengui presented the Green Forward programme's approach to strengthening the green and circular economy in the Southern Mediterranean by working primarily at the meso level—through business support organisations (BSOs). Based on baseline assessments and field engagement, she identified three core gaps limiting the effectiveness of green SME support.

The first gap is limited technical expertise within BSOs. Many lack specialised knowledge in areas such as carbon measurement, sustainability standards, and environmental performance tools. This restricts their ability to provide tailored and credible support to green SMEs. The second gap concerns access to green finance. While financing is widely recognised as a major barrier for green entrepreneurs, BSOs often lack the financial literacy, tools, and methodologies required to help SMEs become investment-ready or navigate complex green finance instruments. The third gap is a disconnect between policy objectives and on-the-ground realities. BSOs, despite being close to entrepreneurs and understanding operational constraints, are often insufficiently engaged in policy dialogue. This weakens the relevance and implement ability of green policies.

Green Forward addresses these challenges by strengthening BSOs through capacity building, practical toolkits, and peer-learning initiatives. The programme positions BSOs as effective intermediaries—able to translate policy priorities into actionable SME support, while also feeding field-based insights back into policymaking processes. In this way, BSOs become strategic bridges between entrepreneurs and policymakers. Ajengui further emphasised that isolated interventions are ineffective. Impact requires structured ecosystem coordination. Key enablers include:

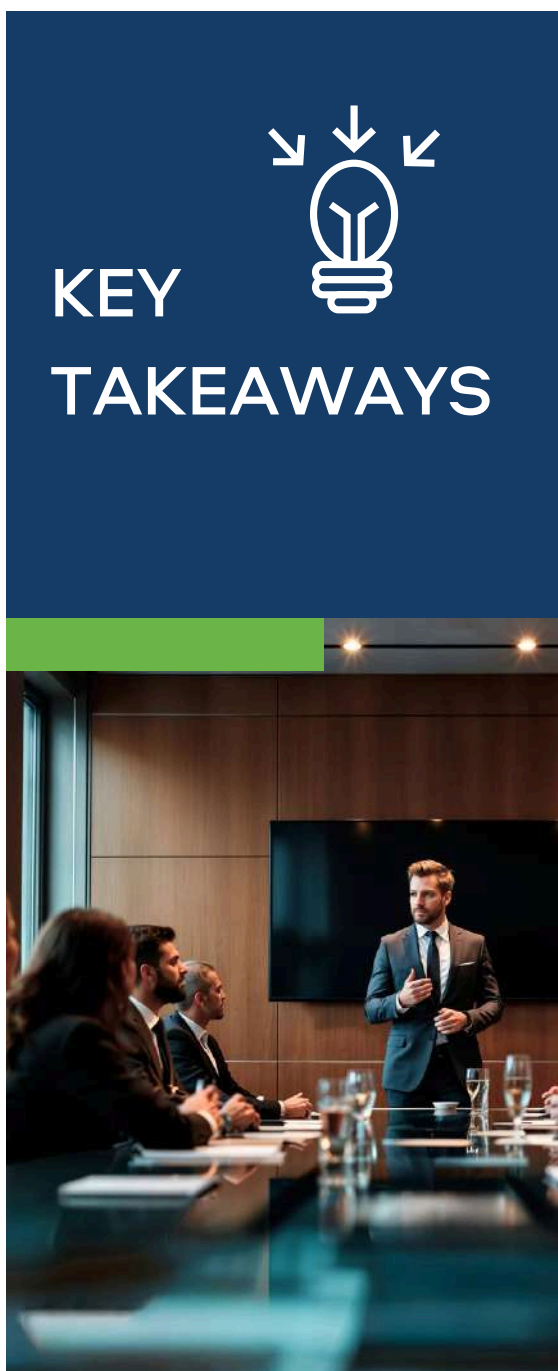


- **Strategic partnerships** between BSOs, financial institutions, technology providers, and SMEs, allowing BSOs to act as conveners that facilitate access to finance and markets.
- **Market-driven capacity building**, ensuring that training is linked to tangible opportunities, such as compliance with EU standards or CBAM requirements.
- **Cross-border cooperation**, recognising that many green value chains are regional in nature and that shared platforms can expand SME visibility and partnerships.
- **Alignment between macro, meso, and micro levels**, ensuring coherence between policy reforms, BSO services, and SME needs.

She concluded that scaling green SMEs sustainably is not about addressing a single bottleneck. It requires orchestrating the entire ecosystem—across policy, institutional, and entrepreneurial levels—to enable long-term resilience and impact.

KEY TAKEAWAYS & POLICY RECOMMENDATIONS

The discussions across both panels converged around a set of structural themes that are critical to unlocking the full potential of green tech clusters in the South Mediterranean. The following key takeaways and policy recommendations are organised by thematic priority areas.



1. Clusters as Strategic Drivers of Green Transition

Key Takeaways

- Green tech clusters are not merely networking platforms; they function as operational catalysts linking research, industry, finance, and policymakers.
- Clusters can accelerate SME integration into value chains by aligning innovation with market demand.
- Their strongest value lies in connecting local capabilities with global technological and regulatory developments.
- Clusters are particularly effective when they move beyond dialogue and actively structure projects and partnerships.

Policy Recommendations

- Recognise clusters formally within national green transition strategies as strategic implementation partners.
- Provide institutional and financial support to cluster governance structures to ensure long-term sustainability.
- Incentivise cluster-based project development (e.g., joint R&D, shared certification schemes, industrial pilot projects).
- Strengthen cluster roles in connecting SMEs to anchor projects (e.g., large renewable or infrastructure projects).



KEY TAKEAWAYS



2. Bridging the Gap Between Innovation and Market Integration

Key Takeaways

- Many green innovations remain underexploited due to weak integration into structured value chains.
- SMEs often lack access to large industrial players who can act as co-developers or first buyers.
- There is a persistent mismatch between SME readiness (certification, scale, capital) and project requirements.
- Large-scale renewable projects can operate in isolation unless deliberately designed to create local spillovers.

Policy Recommendations

- Introduce local content and SME participation frameworks in large renewable energy and infrastructure projects.
- Support joint certification, quality upgrading, and ESG compliance programmes for SMEs.
- Develop supplier development programmes linked to utility-scale green projects.
- Promote cluster-led matchmaking between SMEs and large developers.





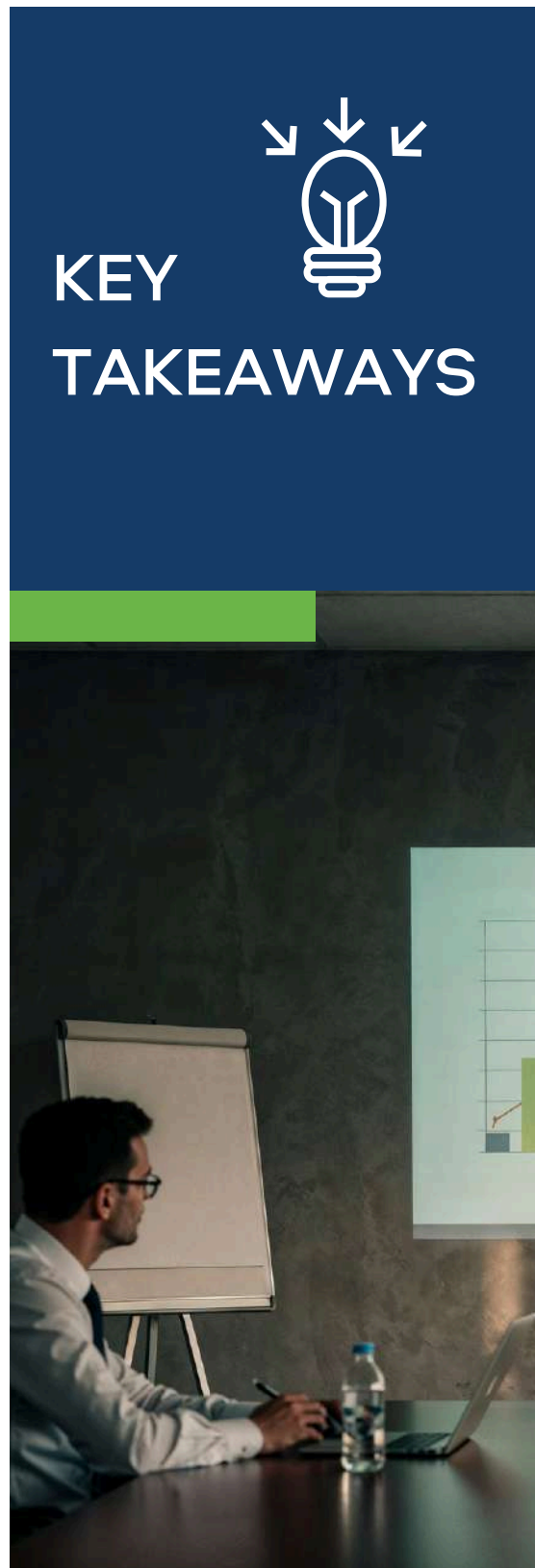
3. Financing the Green Transition: Beyond Pilot Projects

Key Takeaways

- Access to capital remains one of the most significant barriers for green SMEs.
- Seed funding exists in some contexts, but patient capital for pilot, demonstration, and scale-up phases is limited.
- Currency risk, regulatory unpredictability, and financing fragmentation constrain investor confidence.
- Many SMEs struggle to become investment-ready due to lack of financial literacy and technical preparation.

Policy Recommendations

- Develop blended finance and guarantee-based mechanisms tailored to green SMEs.
- Expand impact investment and climate finance instruments targeting early-stage green ventures.
- Support investment-readiness programmes through clusters and business support organisations (BSOs).
- Improve regulatory predictability and standardisation (e.g., bankable PPAs, grid access rules, CBAM alignment).
- Facilitate SME access to certified labs, testing platforms, and technical validation infrastructure.





4. Governance, Regulatory Frameworks & Policy Coherence

Key Takeaways

- Green transition is not only a technical process—it is deeply political and distributive.
- Laws promoting renewable energy and sustainability often exist but suffer from weak implementation.
- Fragile and crisis-affected states face structural governance challenges that complicate transition efforts.
- Fragmented permitting processes and regulatory uncertainty increase project risk and costs.

Policy Recommendations

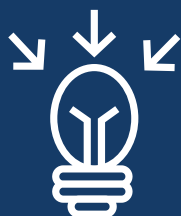
- Prioritise implementation and enforcement of existing renewable energy and sustainability legislation.
- Streamline permitting processes and reduce administrative fragmentation.
- Develop national CBAM response mechanisms to avoid externalised carbon compensation costs.
- Embed green tech strategies within broader industrial, labour, and social protection frameworks.
- Ensure inclusive policymaking that integrates SME voices, workers' unions, and civil society.



KEY TAKEAWAYS



KEY TAKEAWAYS



5. Skills, Human Capital & Capacity Building

Key Takeaways

- Skills gaps remain a central constraint in green and digital transitions.
- Green technology adoption requires awareness and trust across management and operational levels.
- BSOs often lack technical expertise in carbon accounting, sustainability standards, and green finance.
- Green transition must incorporate reskilling and just transition policies.

Policy Recommendations

- Expand sector-specific green skills programmes linked to industrial needs.
- Support cluster-led training and certification initiatives.
- Strengthen BSO technical capacity in sustainability tools and green finance instruments.
- Integrate just transition frameworks, including labour market adaptation and reskilling policies.



KEY TAKEAWAYS



6. Ecosystem Coordination: From Fragmentation to Structured Collaboration

Key Takeaways

- Isolated interventions are ineffective; green transition requires ecosystem orchestration.
- Weak coordination between policymakers, private sector, research institutions, and civil society limits impact.
- Data fragmentation reduces policy effectiveness and increases duplication of efforts.
- Regional cooperation significantly amplifies impact and avoids reinventing solutions.

Policy Recommendations

- Institutionalise structured public–private–cluster coordination platforms at national level.
- Develop shared data platforms to centralise sustainability-related indicators and SME performance data.
- Strengthen cross-border cluster cooperation and regional matchmaking initiatives.
- Encourage cluster-based regional task forces on green transition monitoring and policy benchmarking.
- Promote alignment between macro (policy), meso (clusters/BSOs), and micro (SMEs) levels.

7. Aligning Green Transition with Social and Economic Realities

Key Takeaways

- Green transition must address structural inequalities and fragile state realities.
- Socio-economic crises, currency collapses, and conflict create additional barriers to scaling green technologies.
- Justice and equity are central to the legitimacy of green tech adoption.
- Without inclusive governance, green transition risks deepening inequalities.

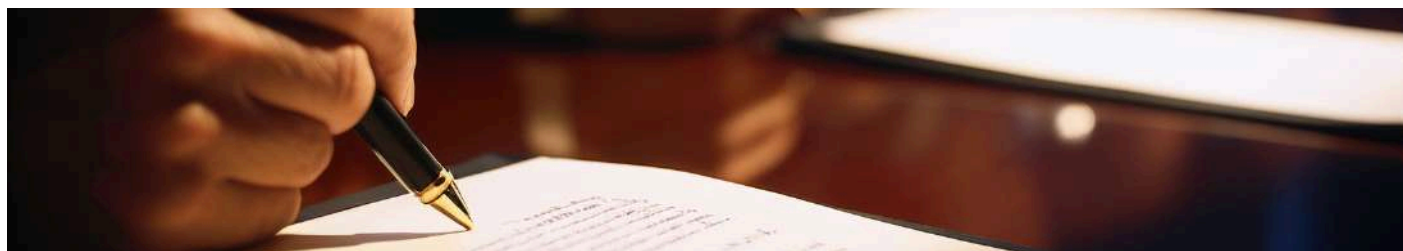
Policy Recommendations

- Integrate social protection and employment impact assessments into green transition strategies.
- Support municipal-level green initiatives and decentralised implementation models.
- Design green industrial policies that explicitly address inclusion, youth participation, and regional disparities.
- Embed equity considerations in climate finance allocation mechanisms.



KEY TAKEAWAYS





Concluding Synthesis

The webinar demonstrated that green tech clusters in the South Mediterranean hold significant potential to act as bridges between innovation and industrial deployment, local capacity and global markets, policy ambition and practical implementation.

However, unlocking this potential requires:

- Stronger policy coherence
- Targeted financing instruments
- Robust governance frameworks
- Structured ecosystem coordination
- And sustained regional cooperation

Green transition in the South Mediterranean will not be achieved through isolated technological upgrades. It requires systemic transformation—anchored in collaboration, supported by policy reform, and driven by inclusive and coordinated ecosystem action.

ANNEX

SPEAKERS BIOS

**Panel 1: Clusters in Action: Catalyzing Green Tech Solutions
Across the South Med**

Mahmoud Othman
Technical Manager,
INJO4.0, Jordan

Mahmoud Othman is a Technical Manager and Digitalization Consultant at the InJo4.0 Competence Center, specializing in industrial digital transformation and energy management. With over 12 years of experience in industrial automation, he is a certified SIRI assessor supporting factories through structured Industry 4.0 assessments and strategic digitalization initiatives.



Ingrid Salloum
Cluster Manager,
Berytech, Lebanon

Ingrid Salloum is the Cluster Manager of QEEMA, Waste Valorization Cluster in Lebanon, where she works on ecosystem coordination and collaboration around waste valorization and circular economy. She has experience in managing innovation and entrepreneurship programs related to sustainability.



Muhammad Saad
Egypt4Industry,
Egypt

Muhammad Said Saad is a serial entrepreneur and digital transformation expert with a background in communications engineering and an MBA. He has founded and co-founded multiple startups in tech, biomedical, and retail sectors, several of which are market leaders in the Middle East. He has led major tech and IoT projects across the region for both government and private sectors. Currently, he is Chairman & CEO of a leading recruitment and outsourcing firm and Co-founder and Board Member of the Egyptian Association for Industrial Technology (Egypt4Industry). He also works closely with startups to develop sustainable business models and drive innovation.



Amina Lamouchi
Project Manager,
SGTBC, Tunisia

Amina Lamouchi is a Project Manager with a PhD in Physics and a background in Materials Engineering, bringing extensive experience in international project coordination. She currently serves as a Project Coordinator within the Interreg NEXT MED Programme, is the initiator of the Green Building Cluster under the GreenBuilding project, and acts as the National Contact Point for Horizon Europe in the field of Energy.



Mohammed Hajji
R&D and Innovation
Officer at the Green
H2 Morocco Cluster,
Morocco

Mohammed Hajji is a PhD in Physics, specializing in renewable energy, system modelling, and the hydrogen value chain. He graduated from the Faculty of Sciences at Mohammed V University in Rabat, Morocco. He is currently responsible for R&D and innovation at the Green H2 Morocco Cluster, whose mission is to identify, manage, and support innovative research projects in the field of green hydrogen.

Panel 2: Ecosystem Enablers for Green Tech: Policy Reform, SME Support & Financing for Value Chain Integration



Sarine Karajerjian
Program Director,
Arab Reform Initiative

Sarine Karajerjian is Program Director of Environmental Politics at the Arab Reform Initiative. She previously spent 15 years at the Issam Fares Institute at AUB, where she led work on strategic management, partnerships, and grant development. Her research currently focuses on the exile and trauma of Syrian refugee women in Beirut, as part of her PhD in Anthropology at the École des Hautes Études en Sciences Sociales (EHESS) in Paris. She holds a Master's in Environmental Policy Planning and a Bachelor of Science in Environmental Health from AUB.



Ghada Darweesh
Country Director,
Globeleq

Ghada Darwish is a mechanical engineer and energy sector leader with over 20 years of experience in developing public and private energy and industrial projects across the energy, renewable, and chemicals sectors. She brings extensive expertise in government relations and donor-funded initiatives, and has previously served as Secretary General of the Benban Solar Energy Developers Association. She is currently Country Director of Globeleq Egypt and CEO of DEM Consulting, and serves as Chairwoman of the Egyptian Renewable Energy Association (in establishment, with EBRD support).



Afef Ajengui
Regional Programme
Manager, Green Forward,
Spark

Afef Ajengui is currently the Regional Programme Manager for the GreenForward programme at SPARK. Previously, she held other senior positions in program management within the civil society, entrepreneurship, and green sectors. Afef has developed expertise in green and climate sectors, fundraising, project design and management, budget planning, reporting and research, community building, and establishing networks at both national and international levels across the green, climate, entrepreneurial, and social domains.



Batir Wardam
Private Sector Advisor
(GAIN) Project, GIZ

Batir Wardam is a Jordanian environmental management expert with 20 years of experience in disciplines of green economy, natural resource management, climate and environmental policies.

Mr Wardam is currently working with GIZ as a private sector advisor in Green Economy focusing on connecting Business Support organizations with SMEs in green/circular product development within the overall green business ecosystem. He has previously coordinated green policy development and implementation, developing green economy activities and institutional coordination. He has been a member of the Green Jordan driver advisory committee in the Economic Modernization Vision development team



MODERATOR



Mohammed Aljafari
Investment Consultant
& Sustain MENA
Partner, Jordan

Dr. Mohammed Aljafari is a leading expert in innovation commercialization and regional innovation policy, with extensive experience supporting entrepreneurs, startups, and institutions across the MENA region. A partner at Sustain MENA since 2025 and former director at iPARK, he has led and advised multinational, donor-funded programs focused on green innovation, entrepreneurship, and capacity building. He holds a PhD in Pharmaceutical Sciences from the University of Nottingham and serves on multiple academic and industry advisory boards worldwide.

PHOTOS

Mapping

Cluster: 15% Energy, 1% Green tech, 19% ICT.

Advanced:

- Egypt: 8 clusters, regulations on renewables 53% by 2035
- Morocco: 9 clusters, national strategy and legal framework, institutions created on renewable energy and hydrogen
- Tunisia: 7 clusters, 35% of renewable energy by 2030; TERI trust fund supporting MSMEs to migrate. Solar and Wind

Challenges but policy will

- Algeria: 2 clusters, no regulation, 95% fossil
- Jordan: 96% of net energy import in 2022

Need to improve:

- Lebanon: 4 clusters, no priority until now but national action plan

Under preparation; organic initiatives

- Palestine: No cluster, no regulation, organic initiatives on solar



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