

Tailored lending facilities with higher investment limits and provisions for allowing portfolio lending could play a crucial role in accelerating the deployment of renewables and energy efficiency across sectors (e.g., in industry, commercial, transport).

JREEEF's scope of coverage applies to small-scale systems and is largely capitalised by domestic funds and contributions from international financing institutions and donors. JREEEF has successfully implemented a number of financing programmes covering solar water heaters; rooftop solar for households, public buildings and commercial entities; heating for schools; and energy audits for industry. In implementing the financing programmes, JREEEF has partnered with several entities including CBOs for installing over 20 000 solar water heaters. In the next phase of the programme for solar water heaters, JREEEF is partnering with commercial banks, which is presenting challenges given the lack of awareness and capacity within banks to implement small-scale lending programmes.

Recommended actions:

- Design tailored lending facilities with higher investment limits and provisions for allowing portfolio lending to support deployment across specific sectors (e.g., in industry, commercial, transport) in partnership with development finance institutions and building on the experience of the CBJ programme.
- Develop differentiated due diligence standards for proposals seeking financing from commercial banks depending on the size of the project to reduce time and transaction costs for smaller projects.
- Introduce sector-specific funding facilities for renewable energy applications, such as solar water heaters, building on the JREEEF experience and under various models such as ESCO.
- Design incentives for renewable energy solutions based on instruments, such as revolving funds, that reduce uncertainty for the private sector and consumers and contribute to long-term market development. Lessons can be drawn from the implementation of the revolving fund for solar water heaters, such as in the projects of Co-Water in Ajloun and Deir Alaa.
- Increase awareness among consumers on the new programme launched by JREEEF for solar water heaters in October 2019.

- Ensure capitalisation of existing funds, such as JREEEF, utilising domestic and international financing to support long-term market development.

5.7. Strengthen local renewable energy industries and job creation

Renewable energy technologies offer the opportunity to reduce the cost of energy in Jordan, while also contributing to energy security and environmental preservation objectives. The benefits of the energy transition can be maximised by ensuring the active participation of the local renewable energy industry, thus contributing to job creation and wider socio-economic benefits. Jordan's renewable energy industry has strong foundations, with hundreds of registered companies employing several thousand people across different segments of the value chain. Targeted actions can ensure that local industry has the right ecosystem to provide the diverse products and services needed for the energy transition in Jordan, as well as on the regional and global scale.

Action 12: Leverage capacity from other sectors and maximise renewable energy job creation

A renewable energy-based energy transition offers the opportunity to develop new manufacturing and non-manufacturing industries and generate employment opportunities. Achieving these benefits requires a broad mix of policies beyond those that focus on deployment alone. These include, for instance, industrial policies, skills development, and research and development.

The Kingdom has implemented several initiatives to support local industry development, including the introduction of local content requirements. The existing domestic manufacturing base for renewables is strong in some areas – modules, cables, mounting structures and solar water heaters – with several new opportunities (e.g., solar water heating with PV, single axis tracking and bifacial modules).

However, local enterprises continue to face several challenges. A key determinant of domestic manufacturing's attractiveness is the size of the local and export market. At the local level, abrupt policy changes, in particular the suspension of new projects over 1MW, have negatively impacted the market growth potential of local enterprises. The updated Master Strategy for the Energy Sector is expected to offer clarity for domestic and international investors

to plan for capacity augmentation locally, as well as product/service diversification to cater to local and regional markets. While a local content regulation is in place,¹⁹ its definition, effectiveness, and influence on cost and quality need to be closely assessed.

Aside from the manufacturing of renewable energy technologies, several new opportunities for value creation exist. These range from various O&M, design, engineering and financial services to the development of new solutions such as industrial automation, smart metering and hydrogen infrastructure. A key challenge for the sector is also building adequate skills to meet the needs of a rapidly growing renewable energy sector. Identifying future skills needs and partnering with training institutes, universities and industry are important steps for developing curricula and delivering quality training for the workforce. Skills development and training opportunities should be equally accessible to both men and women, with a view towards greater participation of both genders in the renewable energy workforce.

Recommended actions:

- Devise a comprehensive industrial policy providing a vision for the development of a robust local industry (manufacturing and non-manufacturing, including O&M) around renewable energy, energy efficiency and complementary solutions (e.g., storage, smart grids, green hydrogen).
 - Provide a longer-term outlook for renewables demand to enable the private sector to plan for capacity augmentation and product/service diversification.
 - Review existing public procurement processes to identify design features, such as origin of equipment requirements, that present challenges for local suppliers to participate in the sector.
 - Strengthen the export incentives available for local renewable energy products and services, building on regional agreements such as the Joint Arab Market.
 - Assess how local content regulations and their definition, effectiveness, and influence on cost and quality can be optimised.
 - Develop innovation hubs and pilot projects to address solutions needed for renewable energy integration across sectors to build knowledge and experience.
- Create a national master plan for the development of local job creation in the renewable energy industry in collaboration with the MEMR, the Ministry of Higher Education and Scientific Research, the Ministry of Labour, the EMRC and the Ministry of Industry, Trade and Supply. The master plan should identify future skills needs across the renewable energy value chain, including manufacturing and O&M, as well as complementary technologies such as battery storage and electric vehicles.
 - Focus on education and training programmes and partnerships between universities and industry to ensure skills availability in the sector.

Action 13: Raise awareness and strengthen the information base on renewable energy

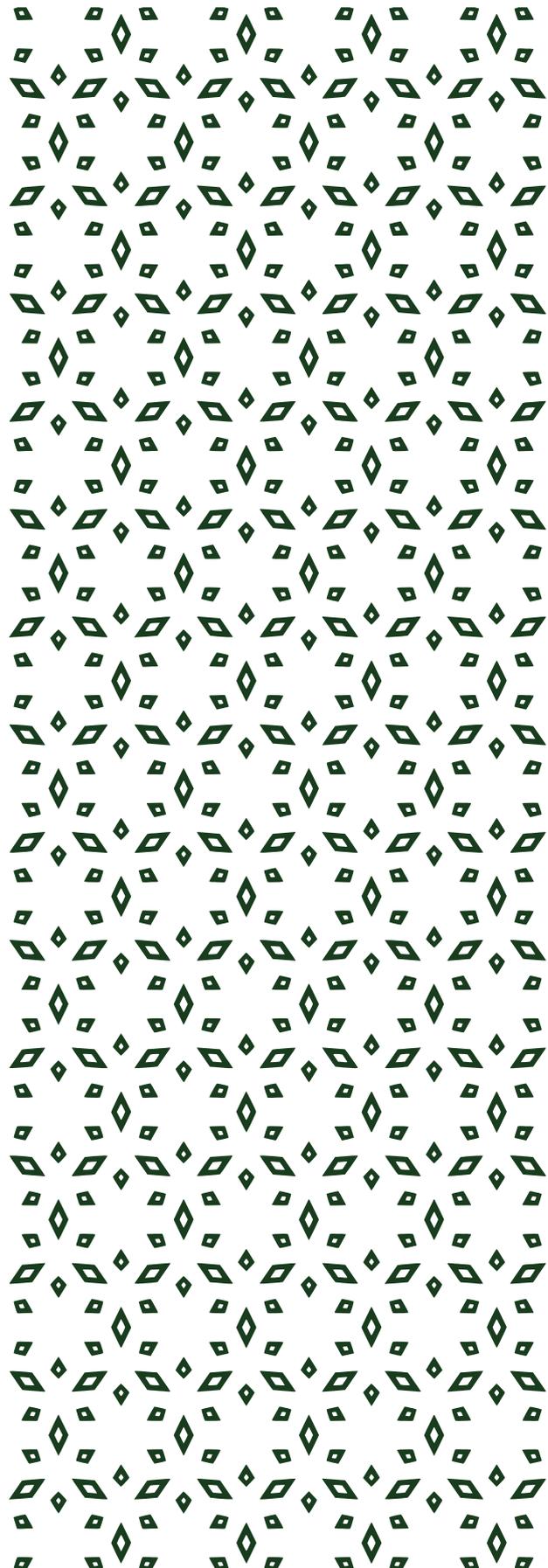
The lack of awareness among different stakeholders on the costs, benefits and opportunities of renewable energy solutions is a key impediment for the expansion of the sector. The sector is rapidly evolving, with costs falling and new technologies and applications emerging for residential, commercial, industry and transport end-uses, leading to information asymmetry among policy makers, industry and consumers. This directly impacts effective decision-making and the uptake of renewable energy solutions despite a strong economic case for adoption. Lack of awareness is also seen among consumers regarding existing policies and financial incentives offered by the government. Integrating much higher shares of variable renewables, creating end-user awareness, changing behaviours and fostering the ability to adopt new technologies (e.g., electric vehicles) will be crucial for successfully diversifying Jordan's energy mix.

Access to up-to-date data is important for planning, effective decision-making and developing awareness programmes. Yet disaggregated data related to energy use and consumption at the subsector level is not easily accessible. In industry, for instance, access to plant-level energy use data can be instrumental for national and regional benchmarking, for informing planning processes at the national level as well as for assessing the viability of renewable energy and energy efficiency measures. The enforcement of requirements for energy audits under the Energy Efficiency Bylaw No. (73) for the year 2012 already provides a sound basis to gather standardised data disaggregated at the industry level.

¹⁹ Currently set at 35% for utility-scale solar PV and 20% for wind projects.

Recommended actions:

- Convey the convincing business case for renewable energy in Jordan and its long-term socio-economic and environmental benefits. This key message should be effectively communicated by both governmental and local-level decision makers such as those at MEMR, the Ministry of Environment and other relevant institutions.
- Design tailored public awareness raising campaigns around the available renewable energy options, their costs and benefits, as well as accessible financing schemes.
- Design focused outreach programmes and campaigns aimed at high potential end-user groups, such as in industries, commercial businesses (e.g., hotels), residential and water sector, to share opportunities for renewables adoption supported with case studies of benefits realised.
- Increase outreach through media and public information agencies on the socio-economic and environmental benefits of renewable energy.
- Strengthen the data and information base on energy use at the subsector level, especially in industry. By law, the Department of Statistics is authorised to gather data; for industry, a collaborative effort with MEMR and the Chamber of Industry and Commerce is needed to conduct a nationwide effort to standardise and gather industry-specific energy data.



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