

Factors of success for a transformation towards Green Economy

Challenges and opportunities for capturing local benefits

In Morocco, the potential for solar and wind energy generation is enormous and could be exploited for addressing not only energy security concerns, but also pressing social and economic needs. Smart policy design that integrates different policy objectives can have long-lasting effects, stimulating competitiveness across the economy.

By Georgeta Vidican

Morocco, a small but stable economy in North Africa, became in the past five years one of the most attractive destinations for renewable energy (RE) investments geared to developing countries. Between 2009 and 2012 more than two billion US Dollar have been committed from public and private investment sources (REN21 2013). Aside from the abundant solar and wind energy resources, the main reasons for such mobilization of funds, primarily by bilateral and multilateral donors, are the following. First, Morocco covers 95% of its energy needs through imports. Such high dependence on imports increases its vulnerability to fluctuations in international fuel prices and places a heavy burden on the national budget, especially as energy demand is expected to increase further. Hence, improving energy security is one of the key priorities for the Moroccan government. Second, before the peak of Eurozone crisis in 2012, energy market integration between Europe and south Mediterranean countries was high on the policy makers' agenda. The goal was to support investments in large-scale green electricity power plants in North Africa, to supply both domestic demand as well as a sizable share of European energy demand through exports (Dii 2013). For southern Mediterranean countries, such as Morocco, this was a favorable prospect given opportunities for earning foreign currency along with addressing energy security concerns. Yet, while this vision lost its sparkle a couple of years later, it did contribute significantly to highlighting the enormous potential for RE in the region, and hence to mobilizing financing. Third, the potential for large-scale solar energy deployment in uninhabited desert areas in North Africa also sheds light on the prospective cost reductions that could be achieved for less mature technologies such as concentrated solar power (CSP) with the added benefit of energy storage. The fact that the global solar energy market would benefit from such cost reductions added new enticement for investment.

Local policy makers were quick to capitalize on the momentum created by these factors, the increasing national energy consumption (expected to double by 2020) being the driving force behind it. As a result, a 42% target was set for renewable energy (RE) by 2020 (two gigawatts of solar energy, two gigawatts of wind energy and two gigawatts of hydropower). The solar energy target is to be achieved by constructing five large solar power plants. To this end, the Moroccan government committed nine billion US Dollar, established new organizations to support the achievement of the solar energy targets and reorganized existing organizations to support the roll-out of other low-carbon technologies such as wind energy or energy efficiency. The most important of these new organizations is the Moroccan Agency for Solar Energy, directly overseen by the Moroccan Monarch, tasked with implementing the solar energy targets. By now, the first 150 megawatt CSP plant broke ground and additional large tenders are in the pipeline. Voluntary local content requirements are also included in these tenders, aimed at increasing local value added. As wind energy is more cost competitive than solar, deployment of this technology increased more naturally, attracting both local and international investors.

Development cooperation actors are highly involved in supporting the deployment of solar energy technologies in Morocco. German bilateral cooperation agencies are particularly engaged, with both financial and technical assistance at different levels (i. e. organizational level, sectoral and policy level). The key challenge, however, is how to pursue a strategic vision for a RE driven economic development process.

Seeking opportunities for local value creation

In spite of the vast potential for RE deployment, it is essential to be reminded that Morocco is a developing country confronted not only with energy security issues, but also with various socio-economic challenges that need to be simultaneously addressed. In particular high unemployment and a growing income gap are of particular concern. Moreover, the growing trade deficit challenges national financial sustainability, while low industrial competitiveness and innovation capabilities pose concerns for long-term growth (Vidican et al. 2013: 28).

Thus, Moroccan policy makers have expressed interest in linking RE deployment to socio-economic development, through job creation, industrial development, and the enhancement of technological capabilities geared towards supporting

export-oriented sectors. However, as of yet, no strategy is in place to systematically integrate these two objectives. Furthermore, it became more evident, that the large-scale CSP plants envisioned for satisfying the solar energy targets will deliver only a limited number of jobs, with meager value added for the economy and low integration of domestic suppliers in the solar technology value chains.

Therefore, if more value added is to be created locally (i. e. employment, technological capabilities, medium-technology industries) policy makers should also consider market incentives for distributed solar energy generation (shown to generate more jobs per invested and installed unit), as well as the systematic integration of various policy areas aimed at achieving inclusive competitiveness (Vidican et al. 2013) [1].

Challenges to local value creation and policy guidelines

Drawing on literature on development policy and applying it to the specific challenges faced by Morocco, a two leveled strategic approach to achieving inclusive competitiveness in the emerging solar energy sector could be pursued. First, certain framework conditions are needed, with respect to local technological capabilities (education and training, research and development) and industrial upgrading services, along with private sector investment and market creation. Technological capabilities are critical for enhancing competitiveness, as local companies need to be able to learn, internalize and utilize management skills and technological know-how (UNCTAD 2010). Private sector investment is needed, which should be mobilized through targeted investment promotion and facilitation measures. Yet, a critical condition for both these factors is the presence of a sizable market for both large-scale solar energy plants as well a distributed generation systems (e. g. roof top installations). A stable market, with long-term predictability is critical, not only for sending the right signals to potential foreign investors; it is also a necessary condition for local companies to acquire experience and expertise domestically and to engage in export markets.

Second, to enhance competitiveness in the emerging solar energy sector, the creation of business linkages between domestic and foreign firms (especially domestic small and medium enterprises and transnational corporations) is critical. Competitiveness of countries and enterprises depends to a great extent on their ability to tap international source of knowledge, as well as on their ability to absorb and use it to deploy resources more efficiently (Altenburg 2005). Business linkages are crucial to providing local companies with the necessary assets and incentives to increase competitiveness and overall productivity, while also contributing towards attracting private sector investment.

Our extensive fieldwork in 2013 in Morocco suggested that various gaps (and hence opportunities for improvement) exist at different levels. An extensive discussion of these findings is

presented in Vidican et al. (2013). Here I focus only on three main aspects: market creation, mechanisms to support business linkages geared towards technology transfer, and strategy development and its systematic implementation.

Market creation

Although various studies point to the higher local value creation potential of solar photovoltaic technologies, lack of regulations for this market segment (in the form of feed-in tariffs, net metering) and high levels of energy subsidies (creating price disincentives for solar energy) prevent large-scale deployment of this technology and its applications (i. e. solar water heaters, solar water pumps). Yet, Morocco's private sector possesses capabilities primarily in this market segment (and less in large solar power plants), as a result of rural electrification programs in the 1990s. It would be difficult (and perhaps unrealistic) for Moroccan companies to become competitive in producing solar photovoltaic panels (due to strong competition from Chinese products). Yet, one could envision that system installation, operation and maintenance, and the manufacturing of some parts and components could be localized. Moreover, searching market opportunities in Sub-Saharan African countries could also enlarge the market potential. Thus, setting the appropriate regulatory framework could send positive signals to potential investors as well as to local small and medium enterprises (SMEs) to engage more actively in this emerging sector. Upgrading programs could also assist SMEs to upgrade their technological capabilities in light of changes in technological parameters and market conditions.

Business linkages

While various programs to support business linkages between transnational corporations (TNCs) and SMEs do exist, local companies do not seem to make much use of these services and few such linkages can be identified in the emerging solar energy sector. The main factors contributing to this outcome are the limited effectiveness of business linkage services and the relatively small market for solar energy preventing large flows of foreign direct investment. To improve effectiveness of such services it is necessary to assess, target and coordinate programs more efficiently to facilitate, create and support business linkages in line with the strategic direction for industrial development and geared towards transferring technology and know-how. A stronger focus on fostering joint ventures with lead firms and technology licensing should be pursued. Further, the capabilities of local SMEs should be fostered through inter-company training and supplier development programs, in order to improve the attractiveness of local SMEs as business partners to technology lead firms. Successful examples of joint ventures and supplier development programs exist in other sectors in Morocco. Building on these cases and transferring such knowledge to the emerging solar energy sector is critical.

Strategy development and implementation

Another key challenge for the development of the solar energy sector in Morocco relates to lack of transparency and predictability with regards to technology choice, limited inter-agency coordination and stakeholder consultation. Insufficient coordination and consultation with different stakeholders (aimed at integrating different goals) results in fragmented and disconnected initiatives, precluding competitiveness and high local value creation in the long-run. Hence, we stress the importance of developing a national strategy for industrial development for the solar energy sector, based on a multi-stakeholder approach. Without such a strategy to target both the development of a sizable local market for solar energy and the development of a local industry able to generate employment stakeholders do not receive the necessary signals to engage, on a systematic basis, in the emerging sector. The creation of a separate entity, such as the Moroccan Solar Energy Council, with strong legitimacy and steering capacity to strategically orient the development of the sector in light of technology and market changes, could address this need. A key characteristic of such an entity would be the transparent and collaborative approach to decision-making, seeking to put in place a framework for policy monitoring and evaluation to maximize learning from different initiatives, and developing a narrative for RE-driven economic development that would bring together stakeholders with conflicting interests.

Annotation

- [1] We define inclusive competitiveness as the ability of local firms to compete with international enterprises in terms of price and/or quality, such that socio-economic outcomes are achieved (in terms of jobs, integration in value chains) and participatory processes are integrated in the decision-making process (Vidican et al. 2013).

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