Renewable energy and employment in Saudi Arabia: Assessment and Prospects

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Overview

Guided by Vision 2030, the Kingdom of Saudi Arabia has implemented a range of energy sector reforms to support the deployment of renewables, lower energy demand growth and decrease the energy intensity of the economy. While all important in enabling energy transition and curbing greenhouse gas emissions, renewal energy projects are particularly expected to lead to other positive outcomes such as the creation of local employment. Although job estimates vary greatly due to implicit differences in data collection and methodology, the bulk of studies show that jobs needed per unit of energy produced from renewable energy projects is significantly higher compared to conventional power projects. As the government aims to increase the share of renewables from the current less than 1.0% to 50% of power generation capacity by 2030, one would expect that higher labor intensity in the sector would translate into many jobs.

In the context of the Saudi labor market, however, common analytical approaches based on input-output tables or general equilibrium modeling can only give a partial view of the likely labor market outcomes. The relevant question is rather whom, among Saudis and non-Saudis, are most likely to benefit from job creation in this emerging sector. An examination of the evidence shows that long-entrenched occupational and sectoral biases, information asymmetry, and a shortage of adequate skills could limit this job creation potential for young Saudis.

Methodology

Using publicly available data, such as the General Authority for Statistics' labor force surveys, this paper employs descriptive statistics to assess the prospects of Saudi employment in the emerging renewable energy sector.

Results

While renewable energy has the potential to create tens of thousands of jobs, the evidence shows that action may be required to unlock the job creation potential for Saudis in the sector – especially in a context where the labor supply of Saudis continues to grow. The continued preferences for training geared towards white-collar occupations, combined with a lack of vocational training, represent challenges for the employment of Saudi nationals – challenges which have their origins in issues such as occupational and sectoral biases, information asymmetry, and a shortage of adequate skills. More specifically:

1. A high degree of labor segregation subsists between nationals and non-nationals — with the former mostly working in the public sector (59% in 2020). In contrast, about 75% of expatriate workforce is currently (2020) employed in the sectors that are set to generate the bulk of renewable energy jobs — particularly manufacturing and construction.
2. This segregation also extends to gender. Data shows that Saudi labor force growth in the coming years will be more dependent on female workers, which are expected to grow at a faster rate than their male counterparts. However, Saudi females are more likely to be employed in lower paid, non-technical, administrative jobs in sectors such as public administration, education and health as well as

retail. Combined, these sectors currently account for more than 70% of total female employment. Resistance to physical and outdoor work adds to the challenge.

3. Education and training remain mis-aligned. The concentration of Saudis in the public sector is also reflected in its human capital endowment, with the majority of Saudis graduating with degrees in business, law and social sciences (60% in 2020). While technical and vocational qualifications are more relevant, less than 6.0% of males and less than 2.0% of females enroll in such programs. These figures contrast sharply with countries at the forefront of renewable energy development: 22% in Germany, 13% in Egypt, 9.0% in Morocco, and 8.0% in China.

Conclusions

- Despite wide-ranging estimates, renewable energy projects in several countries have shown a strong potential for job creation — a welcome development given strong demographics in the Kingdom.
- A risk exists however that barriers, such as labor market occupational and sectoral biases, information asymmetry, and a shortage of adequate skills among young Saudis, could limit this opportunity.
- To alleviate these constraints, more efforts could be made to provide better labor market information, expand vocational training and work with industry to better target and develop skill needs.
- Even in the case of renewable energy projects having a modest impact for Saudi workers, its strategic potential in terms of skill and entrepreneurial development should still be considered.

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