



EDAMA
Energy, Water & Environment

Edama's vision on the Energy Sector Strategy 2020 - 2030





Edama's vision on the Energy Sector Strategy 2020 - 2030

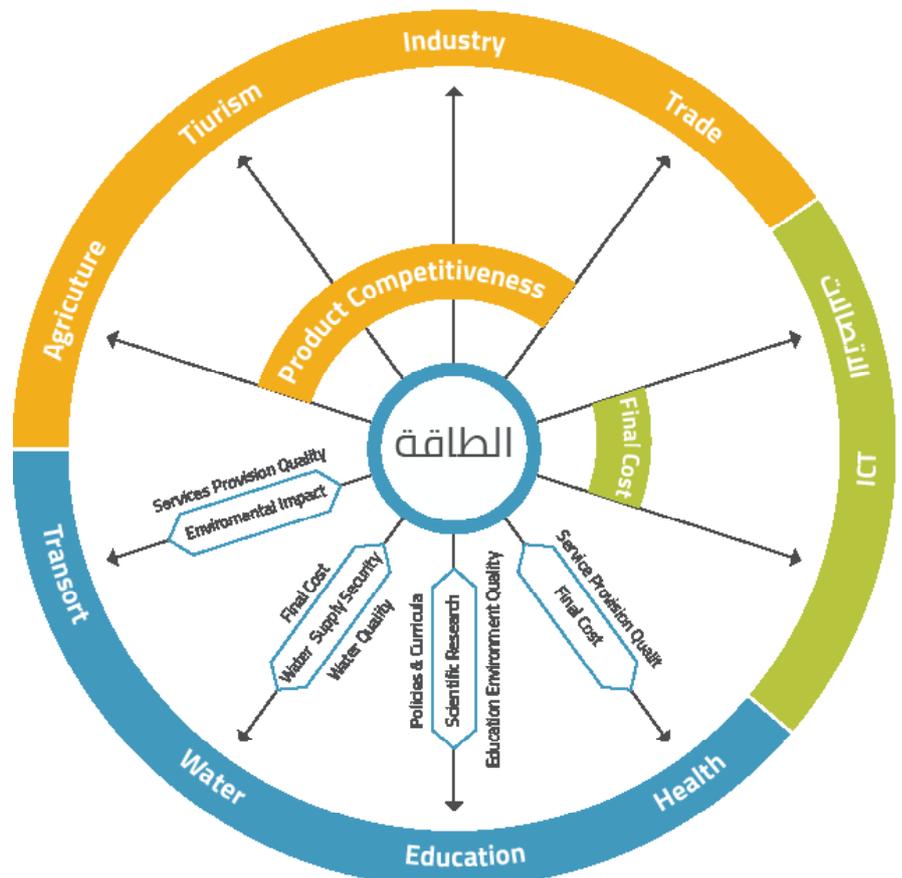
The Ministry of Energy and Mining Resources (MEMR) has recently issued its Energy Sector Strategy 2020 - 2030 as a step in the right direction, albeit one year later from the intended and previously announced date. The document summarizes the strategic direction towards increased self-dependency in the next ten years. The strategy was followed by the National Strategy Executive Plan to implement the set strategy goals. The Strategy was realized following the efforts of the Royal Energy Commission in 2007 that reviewed and updated the National Energy Strategy covering the years 2007 - 2020, and updated again in 2015 covering 2015 - 2025.

Continuously updating this strategy is a fundamental matter particularly within such a vital sector as the energy sector, that is characterized by accelerated technological advancements and changes in raw material prices, in addition to the general perception regarding its management and fast turnover in key positions and stakeholders, in response to accelerated changes within its structure, calling for utmost preparedness to develop suitable plans that are responsive to the demands of each phase.

The exerted efforts in putting forth this strategy are appreciated in terms of drawing the broad guidelines for the upcoming interval, however, more strategic development is needed. Hence, we hereby present some comments that should be taken into account, as follows:

Strategic comprehensiveness

It is a known and reiterated fact that energy is one of the most important pillars in current and future economic development; this necessitates sector-based planning given that energy connects all other sectors. Water, industry, commerce, agriculture, transport, education, tourism, health, ICT and finance sectors are directly related to, and impacted by, the growth and development of this sector. Energy defines the costs of production and creates competitive advantages per





sector. It contributes to investment attraction, sustainability and job creation leading to economic growth and increased competitiveness.

This nexus among sectors has to be presented with utmost clarity, using measuring tools that can monitor job creation, attraction of foreign funds (foreign direct investments – FDI), has impact on costs and end-user tariffs in order to derive at direct and consequent socio-economic impacts, in addition to measuring the return on investments / treasury income, in a clear and concise manner.

However, the results and recommendations that should promote integrity and complementarity among sectors, were open-ended void of a clear-cut timeframe or specific goals that can be measured and assessed, examples:

- Decreasing energy consumption and costs of the water sector, have to go hand-in-hand with clear goals that can transform the sector towards renewable energy, water desalination and pumping through locally generated energy.
- Using electricity-based locomotives and transportation methodologies whether in the public or private sectors transportation (this includes the electrification of the transportation sector). This has to be carried out within specific goals through which increased demand on electricity can be predicted.
- Lack of clarity of the role of research and development (R&D), and academia within the portrayed strategy. Diminished chances of inclusion of the information and communications technology (ICT) sector and energy to motivate and incentivize economy by developing programs, applications (apps) and scientific solutions to service this merge, and marketing them towards a universal and methodological transformation of clean energy.
- It has been denoted that the strategy will contribute to lowering the percentages of carbon dioxide (CO₂) emissions by 10% by the end of 2030 during the introductory presentation, however there was no mention of this in the Energy Sector Strategy Summary, nor was this reflected in the plans and programs in the National Strategy Executive Plan and expected contributions towards this decrease.

The development of strategic planning in the Jordanian energy sector

The strategic directives are going for self-dependency and increased share of local resources within the energy mix. This is not a new trend; it has been tackled in consecutive strategies, however, the fast technological advancements contributed to the concept of self-dependency which now includes countries that do not have fossil fuel. It made this type of progress possible and expedited, so that it is sometimes faster than what was



planned for. However, this is possible conditional to committing to the requirements needed to realize this transformation on the level of electricity grid development and conversion to smart meters, smart grids and dependence on new technologies such as energy storage using batteries and hydrogen.

Focusing on these technologies that pave the way towards self-dependency has to be within clear, ambitious and measurable goals that can be reviewed. This was an aspect that lacked clarity in the proposed strategy.

Renewable Energy Percentage of the Total Energy Mix		
2007 Strategy	2007	2020
	1%	6%
2015 Update	2017	2025
	6%	9%
2020 Strategy	2020	2030
	11%	14%

The adopted scenario

- Lack of clarity in the methodology of selecting the adopted scenario, as the methodology of work mentioned that the selection will be based on economic, social and environmental impacts. However, there was lack of clarity in terms of comparatively and preferentialism among the scenario based on that selection criteria.
- The adopted scenario is the fourth one (Scenario 4), i.e. increased self-dependency as an optimal scenario for forward looking towards the upcoming interval and planning for it. However, there limitations that stand in the way of selecting the increased sustainability scenario (Scenario 2) were not clarified, which included duplication of the set renewable energy in the adopted scenario, nor was there any clarity on how the capability discrepancy would be compensated for and what technologies would be used for that purpose.
- One of the scenario assumptions that were taken into consideration was the technical limitations to operate an electricity system: has that been studied according to the technological advancements that may contribute to the mitigation of those limitations? Were those limitations dealt with as temporary ones that will be overcome through a studied plan to develop the electrical system towards smart grids and digital transformation?
- The assumption of increased dependency of the transport sector on compressed gas and the electric transport methodologies call for specific goals whose impacts are measurable in terms of the demand for



gas and electricity. What are the legislations, legal frameworks and instruction that are needed to ensure optimal and safest usages?

-

	Baseline senario	Increased self-dependency	Increased sustainability	Fast growth in demand
2030	2.6 to 2.7 GW	3.8 GW	4.1 GW	
2050	5.8 GW	9.6 GW	6.7 GW	

***The goals of the renewable energy that are expected to be realized per scenario**

The proposed scenarios of the energy sector strategy 2020 – 2030

The contribution of fuel in the overall energy mix

- Energy supply security and dependence on local sources are among the most important pillars in the main strategy, however, the proposed strategy did not register clear progress in this regard, so that that the percentage of local energy in the overall energy mix increases by 3% only in the next 10 years, which is a slow indicator of transformation towards self-dependency.

Strategy contribution to reduction of costs

- The new strategy contribution methodology has been clarified in terms of lowering the costs of energy production in addition to lowering the cost of energy for the end-user across the different sectors, however, the reflection of those methodologies in the form of results that expect a degree of decrease on costs has not been clarified and hence cannot be measured and assessed.



Comments on the National Strategy Executive Plan of the comprehensive Energy Sector Strategy

Electricity Energy – Program 1: Diversifying energy generation sources

Project 2.1: continue to work towards increasing the renewable and alternative energy contributions

- The planned capabilities amount to 600 Megawatt (MW) whereas the set goal to be reached in the adopted scenario is 3.2 Gigawatt (GW) by 2030, and in case 2.4 Gigawatt (GW) were realized in 2030, the remainder of the planned-for capability of 200 Megawatt is unlisted in the plan.
- Merging 'Net Measurements' among capabilities to be constructed on government land without mentioning that transit system, lacks clarity.
- It is necessary to identify the set capability to support small consumers.
- Allocate specific capabilities for end-users is a model that somehow resembles the 100 Megawatt one that had been allocated to industry, and has not yet been worked on, up till now.

Electricity Energy – Program 2: Promoting the safety of the electricity system

Project 5.2: gradual conversion to grid systems and smart meters

- There was no mention of working on developing the electricity tariffs unless through updates after fulfilling the transformation to smart meters. However, the electric tariffs need an expedited review and a clear work plan to remedy the deformations in order to incentivize the economy and create work opportunities.
- Commit the electricity company towards gradual transformation to smart meters without opting for the digital transformation plan in general. Lack of special legislations and instructions in this regard for service provision via e-platforms as a first step, in addition to availing the needed data flow to predict the amount of generated and required energy in real time, hence manage the grids and ensure their safety in optimal.

Project 6.2: encourage expansion using electric transportation methodologies

- All depicted upon procedures in this project are undefined goals. These terms: 'sufficient number' of charging stations, 'more' dependency on electric cars, 'encourage' and 'motivate' are non-committing actions, and were not streamlined with the Ministry of Finance and the Customs Department.



- The project to encourage expansion on electric transport methodologies did not mention legislations that have to be worked on to promote and support this transformation.

Electricity Energy – Program 3: Financial status sustainability of the electricity sector

Project 3.1: moving from the one-buyer model to a competitive structure model

- The National Strategy Executive Plan did not mention how the ministry, its institutions and affiliated agencies are going to be restructured, to allow them to manage the transformation file - later on, towards the competitive structure model.
- The transformation to a competitive structure system instead of the one buyer system is a core requirement in the upcoming phase, given the challenges that the sector is going through and the accumulated debts of the National Electricity Company (NEC). There has been no clarity on the methodology of this transformation, nor was this goal tied up to a clear timeframe.

Project 3.2: implementing the road map towards financial sustainability of the electricity sector

- The intended road map to be executed aims to reduce electricity costs in a manner that is reflected on the consumer, according to what had been mentioned in the comprehensive Energy Sector Strategy Summary, however, the methods to be used are unclear, nor was the plan and its most important features shared to be assessed by the different sectors when it comes to its implementation.

Natural Gas – Program 2: Using natural gas across different sectors

- The program includes a number of projects that study the feasibility of constructing a grid for the distribution of natural gas in the main governorates, plus encouraging investment in this regard and the right legislative environment that is needed. This is a directive that is not well understood given that the natural gas is an imported source of energy that calls for investing in building an infrastructure of a non-local source of energy while there is an already existing infrastructure which is the electricity grid that reaches 99% of the Kingdom's areas, and transports the energy that can be locally generated.
- Work should promote dependency on electricity as the sole local source that can replace gas across all its usages, this can be through an electrification strategy that is cross cutting across all sectors.



Recommendations

The Jordan National Energy Sector Strategy and the National Strategy Executive Plan together focus on the National Electricity Company (NEC) and how to enhance its situation while modestly shedding light on the important interactive roles of each of the Energy and Minerals Regulatory Commission (EMRE) and the Jordan Renewable Energy and Energy Efficiency Fund (JREEEF). They did not mention several studies that are sitting on the shelves of the Ministry and NEC, on the development of the Ministry and NEC to stay abreast of the recent technologies and enhance their performance, knowing that these studies had been funded by specialized international agencies.

Finally, EDAMA suggests forming a specialized National Committee represented by various government sectors that are impacted by and impacting the strategy, together with experts and technical persons from the private sector, to work on developing this strategy, help create projects that mitigate current challenges of the energy sector and turn them into opportunities that attract investments and create jobs while reducing electricity tariffs and transforming the existing structure into a digital electricity based economy that puts Jordan at the forefront in this regard and a model in the region.