Tunisia:
what is the energy transition about?
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The energy transition is a structural change, which would transform the current energy system’s non-renewable energy resources into primarily renewable resources. It is a major issue at both the national and international levels.

Most Maghreb countries are aiming to gradually increase the amount of renewable energy in their energy mix. Algeria and Morocco are investing in renewable energy, as is Tunisia, although to a lesser extent. However, this energy transition is currently blocked in Tunisia, since various initiatives and planned public policies aimed at accelerating the energy transition over the past decades have failed to ensure the expansion of the country’s renewable energy sector.

On the other hand, European countries have been making efforts to expand renewable energy production outside of Europe. Major projects such as Medgrid, the Mediterranean Solar Plan, or the Desertec Industrial Initiative, aim to exploit the Saharan desert to produce large volumes of solar energy that will then be exported to the European Union.

In addition, there is a global trend of increasing investment into renewable energy, which is due on one hand to the fact that international donors, financial institutions, and private investors have shown a heightening of both interest and commitment to renewable energy projects, and on the other hand to the climate emergency and the way climate change has negatively impacted the availability of energy resources.

In this general context, this paper aims to give an overview of the national energy transition in Tunisia, to analyze why the project is forestalled, and to offer some proposals for moving forward.

**Renewable Resources in the Tunisian Energy Mix: a National Imperative**

Tunisia is the first North African country to implement institutional and regulatory measures that promote renewable energy. Since the 1980s, several laws and decrees have established the main pillars of the regulatory framework for the development of energy efficiency and renewable energy, including the Decree Law No. 85-8 on energy efficiency, ratified by Law No. 85-92. This legislative process created the Agency for Energy Management (AME, Agence de Maîtrise de l’Energie), whose achievements have made Tunisia among the most progressive countries of the Maghreb region in terms of energy efficiency.

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1 The energy mix is a group of different primary energy sources for the energy consumption of a given geographical area
However, since the conventional energy consumption per capita was considered to be a reliable indicator of a given country’s level of development and since energy demand was considered a pillar of growth and socio-economic development, the national strategy focused mainly on energy efficiency. As a result, the sectors of housing, industry, and power generation became increasingly dependent on the natural gas network, especially in the 1990s with the discovery of Miskar, the country’s largest gas field.\(^2\) The exploitation of the Miskar offshore gas field in 1996, followed by that of Hasdrubal, in the Gulf of Gabes, in the 2000s, and several other fields in the south of the country, have decisively contributed to gas being established as a prominent resource in the Tunisian energy system.\(^3\)

Renewable energy was not promoted until the 2000s. Above all, this change was made to accommodate the transition in the country’s role from being an energy supplier to a net energy import country which itself resulted from the increase in demand combined with the decline in national energy production. Indeed, if during the seventies, eighties, and even nineties, Tunisia was considered as an oil and gas exporter, it became an importer starting in the 2000s. The country’s energy balance, which was in surplus until 2000, became a deficit in 2001\(^4\) (see Fig. 1).

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\(^2\) Ministry of Industry, Mines and Energy  
To meet the energy security challenges in the early 2000s, and to confront how vulnerable the country was to the volatility of international fossil fuel prices, Tunisia decided to consider making an energy transition within a broader strategy of sustainable socio-economic development. A paradigm shift was then introduced to improve economic profitability while taking into consideration both sustainable development in the energy sector as well as environmental concerns related to greenhouse gas emissions.5

To incorporate these changes, Decree No. 98-2532, changed the AME into the National Agency for Renewable Energies (ANER, Agence Nationale des Energies Renouvelables) and become under the administrative supervision of the Ministry of Environment, after which Law No. 2004-72, changing it to the National Agency for Energy Management (ANME, Agence Nationale de Maîtrise de l’Energie) and become under the administrative supervision of the Ministry of Industry and Technology. The ANME is now the main actor for the design and implementation of energy efficiency and renewable energy policies in Tunisia.

Despite the efforts made since then, the contribution made by renewable energies to Tunisia’s energy mix is still insignificant. Seventy-four percent of the country’s primary energy production is generated by fossil fuels, divided equally between crude oil and natural gas. Moreover, natural gas is still the main form of energy consumed in Tunisia: in 2019, it made up 49% of total demand, followed by oil products, which made up 40% of the total demand. As for energy consumption, the production of electricity is responsible for consuming the largest portion of natural gas, taking up 76% of the demand in 2020.6 Beyond that, the current electricity mix7 in Tunisia is poorly diversified: there is a high dependence on natural gas, which accounts for 97% of the consumption in the electricity sector. This raises the serious problem of securing the production of electricity in Tunisia, since the national resources of natural gas produced on the Tunisian territory are currently able to cover only about one third of the national need and the rest (62%) comes from Algeria in the form of imports (45%) or royalty (17%).8

As for renewable energies, excluding biomass, and despite the fivefold increase in the national primary production between 2010 and 2019 (from 0.5% to 2.6%), they still form a modest contribution in terms of quantity. For electricity production, the percentage of renewables has risen from 1.2% to 3.7%, which can be explained by the growing and then relatively stable contribution made by wind power and the sustained growth of photovoltaics (see Table 1).

5 Ministère des affaires locales et de l’environnement – Rapport sur l’énergie durable en Tunisie 2018
6 Ministry of Industry, Mines and Energy
7 Similar to the energy mix, which designates the distribution of the different primary energy sources in the final energy consumption of a given geographical area, the electricity mix represents the proportions of each of the electricity production methods: thermal (oil, natural gas, coal), hydroelectric, solar, wind or bioenergy, in a geographical area
8 Observatoire National des Energies et des Mines – Bilan énergétique 10 ans d’évolution 2010 - 2019
<table>
<thead>
<tr>
<th>Producer</th>
<th>Production Profile</th>
<th>Projects</th>
<th>Indicator</th>
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<tr>
<td><strong>Residents</strong></td>
<td>Photovoltaic auto production (low voltage, Prosol Elec project)</td>
<td>Installed capacity (MW)</td>
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<td></td>
<td></td>
<td>Estimated production (GWh/yr)</td>
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<td></td>
<td>Photovoltaic auto production (medium and high voltage, auto production company)</td>
<td>No. of authorizations</td>
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<tr>
<td></td>
<td></td>
<td>Capacity (MW)</td>
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<td>No. of projects commissioned</td>
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<td>Capacity commissioned (MW)</td>
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<td>Estimated production (GWh/yr)</td>
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<td><strong>Private</strong></td>
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<td>No. of projects commissioned</td>
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<td>Estimated production (GWh/yr)</td>
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<tr>
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<td>Capacity launched (MW)</td>
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<td>No. of projects commissioned</td>
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<td></td>
<td>Capacity commissioned (MW)</td>
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<td>Estimated production (GWh/yr)</td>
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<td><strong>Public Producer</strong></td>
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<td>No. of projects commissioned</td>
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<td></td>
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<td>Capacity commissioned (MW)</td>
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<td></td>
<td></td>
<td>Productivity (GWh/yr)</td>
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<td>STEG Wind power</td>
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<td>Power commissioned (MW)</td>
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<td>Productivity (GWh/yr)</td>
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<td>STEG Hydraulics</td>
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<td>Capacity commissioned (MW)</td>
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<td><strong>Total installed renewable energy capacity</strong></td>
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<td><strong>Renewable energy coverage (%) - [in energy]</strong></td>
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<td></td>
<td>2.60%</td>
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</table>

*Table 1: Total installed renewable energy capacity by type of producer and production profile in 2019*

*Source: Ministry of Industry, Mines and Energy*
A regulatory framework under influence

It is only with ANME’s launch of the Tunisian Solar Plan in 2010 that a major shift in national energy policy has taken place. Indeed, in 2009 the implementation of regulatory and incentive means was more a “proactive” gesture made to ensure that steps were being taken towards creating energy efficiency and breakthroughs in the field of renewable energy on a large scale, reducing dependence on energy imports, and reducing greenhouse gas emissions. Nevertheless, the “voluntarism” of this approach was actually guided by the fact that the Tunisian Solar Plan was initially linked to the Mediterranean Solar Plan. Indeed, at the same time, to achieve its objectives in terms of renewable energy, the European Union launched the Mediterranean Solar Plan in 2008, in cooperation with the countries of the southern and eastern Mediterranean, within the framework of the Union for the Mediterranean. Realizing the existence of a large potential for renewable energy production on its borders, the EU decided to launch the Union for the Mediterranean, a set of regional energy projects undertaken jointly with countries in the Maghreb region. The Mediterranean Solar Plan, the Union for the Mediterranean’s main project launched the same year, provided for the production of additional capacity from wind and solar resources for countries in the Middle East and North Africa region, and the export of part of this energy to the EU through transportation lines. The export of energy to the EU represented a promise of a boost in foreign direct investment for the southern Mediterranean countries.

The Mediterranean Solar Plan has since been abandoned by the EU. This was justified mainly by the fact that the national legislative framework in place for the project did not conform with that in effect in Europe, the existence of energy subsidies, and the lack of confidence on behalf of investors. But it should also be noted that the progress of these projects was severely impacted by the high costs of producing renewable energy in comparison to the low costs of producing energy from fossil fuels for the Maghreb countries. Other factors include the 2008 financial crisis. Indeed, the negative impacts of the financial and economic crises on the prospects of foreign direct investment were decisive, and contributed to the closure of companies and the postponement or cancellation of projects in African countries such as Tunisia.

However, the economic crisis of 2008 also created the concept of a “Global Green New Deal”, which was backed by a number of international organizations. The initiatives linked to this Global Green New Deal advocated for investing in “green” sectors as a way to revive the economy after the crisis. As a result, the Organization for Economic Cooperation and Development, the United Nations Environment Programme and the World Bank have all called for the implementation of strategies for “green growth”, a

“Global Green New Deal” and a “green economy” in their reports published between 2011 and 2012, during which time the ANME updated the Tunisian Solar Plan.

With the support of the EU, in 2012, ANME launched a strategic study on the development of renewable energy. This study has helped to establish a new action plan for the period 2014–2020 and define the strategic goals for 2030, ensuring that these are consistent with the choices already established in the strategy of the electricity mix and the Tunisian Solar Plan, which planned to increase the amount of renewable energy in the production of electricity to 20% by 2020 and to 30% by 2030. Among other countries, Germany has been a major supporter of this new action plan. Indeed, in 2012, the Tunisian-German energy partnership was born with the signing of a memorandum of understanding between the foreign ministries of both countries, which established an plan for energy cooperation that focused primarily on renewable energy, reducing energy consumption, sustainable development, and climate protection. Germany has provided technical and financial support through industrial investments within the framework of bilateral cooperation. In addition, in 2013 the German Embassy coordinated the European effort to involve Tunisia in the process of signing the Energy Charter Treaty within the framework of the “MENA project”. Indeed, the EU has signed an Energy Community Treaty to extend the rules of its internal energy market and to adopt the EU's regulatory framework. Tunisia’s accession to the Energy Charter is currently suspended. Nevertheless, Germany continues to be an important partner for Tunisia in the development of partnership projects in the renewable energy sector and since 2022, in the promotion of a new green hydrogen economy in Tunisia.

However, investment in renewable energy peaked in 2011 ($279 billion), and began declining starting in 2012. This decline was caused by a decline in developed countries’ investment in the renewable energy sector from $190 billion in 2011 to $149 billion in 2012. Indeed, most of the subsidy and support programmes for the renewable energy sector that were announced by governments following the economic crisis of 2008 expired at the end of 2011. This decline in investment in Tunisia coincided with a period of time in which the national situation was mainly focused on the implementation of the new Tunisian constitution, which had been stagnant until 2014. This was another factor which had a large impact on the new action plan of the Tunisian Solar Plan.

16 https://www.energypartnership-tunisia.org/
18 Tunisia has been an observer of the Energy Charter Conference by invitation since 1995. In 2013, in coordination with the German Embassy in Tunisia (ECLE), the Secretariat discussed the signing of the Energy Charter declaration by the Tunisian government. The matter has since been in the hands of the Ministry of Foreign Affairs.
22 Ibid.
New Interests – New Projects

In 2014, Tunisia’s renewable energy sector once again recorded growth after the cost for solar and wind energy technologies declined, allowing a renewed investment in these two technologies. In 2015, this expansion led the Conference of the Parties 21 (COP 21) to list renewable energy as a central component of the action plans presented by different countries. For example, 10 member countries announced the participation in raising 10 billion dollars for financing renewable energy projects in Africa until 2020. France alone committed to providing two billion euros until 2020 for this cause. Multilateral development banks and multilateral climate funds have also committed to financing renewable energy projects. This funding is to be provided in the form of loans and grants, with the goal of providing additional renewable electricity capacity by 2020 and 2030. In its Nationally Determined Contribution, elaborated in 2015, Tunisia proposed to reduce its greenhouse gas emissions in all sectors (energy, industrial processes, agriculture, forests and other land uses, and waste) in order to lower its carbon consumption by 41% by 2030 compared to the levels set in 2010. The mitigation effort will come from the energy sector in particular, which alone accounts for 75% of the reductions in emissions, thus making it largely responsible for this decrease in consumption. This project has been described as the “most ambitious” greenhouse gas reduction project in the Maghreb region, from a country whose greenhouse gas emissions represent only 0.07% of global emissions. Furthermore, the implementation of this project will require the mobilization of significant financial resources estimated at around $18 billion to cover investment needs and capacity-building programs, which will be sourced from bilateral and multilateral cooperation.

In 2015, the same year, Tunisia significantly amended its energy policy measures via Law 12-2015, which is a legal framework for the production of electricity from renewable energy. This law aims to define the legal structure for the implementation of electricity production projects from renewable energy for the sake of self-consumption, for meeting the needs of local consumption, as well as for export. This law also stipulates the legal status of the facilities, equipment, materials, and goods necessary for the production and transmission of electricity from renewable energy sources. It also proposes a legal framework which favours private sector investments into the production of electricity from renewable sources under the authorization and concession regime. The regulatory decree of 24 August 2016 sets the terms and conditions for the realization of projects for the production and sale of electricity from renewable energy sources, with feed-in tariffs for surpluses from self-producers of electricity.
The implementation of this law also coincides with the official beginning of the negotiations of the Deep and Comprehensive Free Trade Agreement (DCFTA), which was negotiated between Tunisia and the EU in 2015. As part of the European Neighborhood Policy and in addition to the 1995 Association Agreement between Tunisia and the EU, the objective of DCFTA was to liberalize trade in Tunisia so that it aligns with European standards and legislation. This agreement focused on energy in particular, with provisions for trade in energy and raw materials. However, despite an important set of reforms in the Tunisian renewable energy sector that are either part of the overall DCFTA framework or parallel to the negotiation, the Tunisian renewable energy sector still does not adhere to the EU’s free trade standards. The key private investments in this sector have still not been made. The ongoing trade liberalization in Tunisia was not satisfactory for the EU. In fact, the EU explains that an adequate, transparent and stable legislative framework could further promote trade relations relations of Tunisia with the EU in the field of energy. In other words, Tunisia has yet to liberalize its trade policies to align with European standards and legislation. However, due to the fact that it is rooted in the idea of “convergence”, that is to say, of a gradual adoption of the EU regulatory framework, the DCFTA was considered as a hierarchical and neo-colonial approach and was criticized in both the private and public sectors in Tunisia, which were looking for a more symbiotic and technically-oriented form of cooperation and integration. Moreover, the inequality between Tunisia’s leverage in the negotiation processes and that of the EU raised the question the how useful the negotiation process was for Tunisia, and the negotiations were eventually suspended.

To deal with the private sector’s lack of commitment to invest in renewable energy production project, the Tunisian minister in charge of energy made amendments in May 2018, who changed the power purchase agreements and issued a call for projects under the authorization regime to finally convince some European investors to make a few modest investments in Tunisia. The following year, Law No. 2015-12 was then amended by Law 2019-47, which allowed power purchase agreements to be made directly between the consumer and the producer. This permits companies using renewable energy for purposes of self-production to sell electricity to other consumers or companies whose consumption power is above the 30% threshold established by the Ministry of Energy, Mines and Energy Transition, as well as to use the national distribution grid to transport their electricity. Efforts to attract private investors have continued with, among other things, the adoption of the government Decree No. 2020-105, which sets the conditions and methods for the realization of projects for the production and sale of electricity from renewable energy sources.
All of this legislative activity explains the fivefold increase in the share of renewable energy in primary energy production between 2010 and 2019 (from 0.5% to 2.6%), which provides an interesting illustration of how a potential energy transition is being prepared in Tunisia.

The current legislative framework has been shaped to satisfy donor requirements and in the hopes of attracting foreign investors. Pressure from debt and international financial institutions has radicalized this trend by imposing private sector participation and privatization in the renewable energy sector and shifting this production towards being based on an export model.

Thus, shifts in Tunisia’s energy policy have gradually tended to favour private sector participation at the expense of public investment, and which includes using foreign direct investment to achieve national objectives. In this schema, the private sector figures as the most reliable asset in ensuring the energy transition, while the failures of the public sector are made clear in public debate. However, all the most important investments in the private sector are made in projects that aim to develop renewable energy in North Africa for export to Europe, such as the Desertec or Nur Energy projects, or more recently the TuNur project, which was formed with the explicit goal of establishing a large solar power plant in the region of Kebili, that would export the electricity produced to Europe via submarine cables. It will be difficult to achieve Tunisia’s national objectives of reducing primary energy demand by 30% and increasing the ratio of renewable energy in the electricity production mix to 30% by 2030 if the entire national effort is focused on producing exports.

**STEG: A Major actor in the Energy Transition**

The three main official stakeholders in the Tunisian energy transition are the Tunisian Ministry of Industry, Mines and Energy; the National Agency for Energy Management (ANME); and the Tunisian Electricity and Gas Company (STEG, Société Tunisiene de l’Electricité et du Gaz). STEG was founded in 1962 by Law No. 62-8, which made STEG responsible for the management, production, transport, and distribution of electricity and gas in Tunisia. The production and distribution of energy are often considered to be a means of generating national independence and pride, which explains why a national company was given the power to control policy making in this sector. From the very beginning, the government gave this public company a strong political mandate that combined two objectives: national energy independence in a context of decolonization in a country with fewer energy resources than its neighbours Algeria and Libya, and socio-economic development through the electrification of isolated or socially disadvantaged areas (e.g., working-class neighbourhoods, rural areas). Tunisia’s political leaders have always considered electricity to be a strategic economic, social and political resource, and have set the goal of guaranteeing universal access to electricity to all groups and areas, since electricity is considered a cornerstone of national development and for improving living standards. In other words, STEG has played a major unifying role in Tunisia and has contributed to providing a national platform for the post-independence
In about 50 years, STEG has managed to increase the rate of urban and rural electrification from 20% and 6% to nearly 100% and 99% respectively. Overall, STEG’s performance is satisfactory, especially in comparison to other countries in the region. STEG has succeeded in achieving the targets set, and has managed to meet the growing energy demand of households and industry.33

Since its creation, STEG has operated as an autonomous public enterprise. This autonomy has been strengthened since the early 1990s, with the introduction of contractual agreements between STEG and the Tunisian state that incorporate certain measures associated with privatization, such as a focus on cost reduction and financial efficiency requirements. However, STEG has thus far managed to avoid the wave of privatization that affected other sectors, though it has deviated away from its initial objective of “serving the public” towards “seeking financial equilibrium”, implemented a cost-recovery policy which “makes customers pay the cost incurred by the company”, and pursuing “the gradual elimination of preferential tariffs whose prices are not economically justified”. Without resorting to a classic privatization model, STEG has been able to achieve its financial objectives and identify performance indicators that can be used to justify subsidies for the development of certain technologies or unprofitable investments.34

This rigorous financial management has long enabled STEG to earn the state’s trust, which ensures that it is provided with international financing at an affordable rate. International donors recognize STEG as being rigorous in its management and control of debt. Beyond that, state guarantees for STEG allow it to access sovereign borrowing rates. Its main creditors have been the European Investment Bank, the Arab Fund for Development, the African Development Bank, and the French Development Agency, who have often acted as co-financers.

**Energy Subsidies: A Barrier to the Energy Transition?**

In 2016, the government at the time made a commitment to the IMF to continue the restructuring programme that would provide $2.9 billion funding for an “economic and financial reform program”, namely a structural adjustment plan aimed at public institutions surrounding STEG.35 Before negotiating the agreement, the government started the painful process of meeting the prior conditions required by the IMF, including the passing the Central Bank Independence Law, the Banking Law, and the Bankruptcy Law in Parliament in April 2016. Even thereafter, the IMF continued make the disbursement of loan instalments conditional upon the implementation of reforms, including the three key reforms in particular: the “business climate” reform,

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33 La STEG : Hier, Aujourd’hui & Demain


35 Lettre d’intention adressée par le gouverneur de la Banque centrale et le ministre des Finances au directeur du Fonds monétaire international le 2 mai, 2016
reforming the exchange rate policy, and the elimination of subsidies.\textsuperscript{36}

All these reforms have had a large impact on STEG, which already began showing signs of financial difficulties in 2010 due to the rise in fuel prices and problems with the non-payment of bills problems since the Tunisian revolution.\textsuperscript{37} First, it should be pointed out that since 2014, in order to receive the aforementioned IMF loan, the Jomaa government has begun to implement reforms that target public enterprises by “abandoning” funding for STEG by freezing the payment of energy subsidies. By 2021, the state had withheld the payment of 2,629 million dinars of accumulated subsidies from STEG.\textsuperscript{38}

Indeed, STEG is involved in subsidies for energy products. These subsidies, were introduced in 2004, and pertain to three public companies, including STEG. Their overall aim is to tackle the increase in international oil prices, following the shift in 2000 of Tunisia’s status from a producer of oil and natural gas to an importer, and to support Tunisian companies exposed to international competition. The subsidies on electricity represent more than 50% of the subsidy on energy products,\textsuperscript{39} and they are implemented indirectly by supplying STEG with natural gas at a fixed administered price lower than the international price. This minimizes the effect of the exchange rate and international price volatility on domestic prices,\textsuperscript{40} allowing STEG to carry out its goal of the production and distribution of electricity and natural gas within Tunisia.

Since their introduction, energy subsidy expenditures were stable until 2010. Between 2010 and 2013, subsidy expenditures increased 6.7 times. During the same period, the energy deficit quadrupled from 605 Ktoe to 2,508 Ktoe. The energy deficit increased at an average annual rate of 61%, while subsidies increased at an average annual rate of 89%, but have decreased ever since.

Since STEG’s contract with the government requires that tariffs reflect costs in order to limit the budget deficit, STEG has already taken several steps in this direction, which has necessarily included the reform of subsidies. Because the tariffs were almost generalized, even the most energy-intensive sectors have benefited: industrial, hotel, even oil companies and energy producers. To address these inequalities, a first reform of the structure of electricity tariffs was adopted in 2014. The introduction of this reform aimed at safeguarding the purchasing power of the middle class and the underprivileged groups, through implementing several consumption levels that incentivize energy conservation. The state would thus continue to subsidize small consumers, while large consumers would pay true prices (and sometimes even more). A second tariff reform went into effect in 2017. It takes into consideration the purchasing power and competitiveness of businesses. Small consumers whose consumption does not exceed 100 kilowatt hours (Kwh) per month and small trades are not affected by the increases: their rates remain


\textsuperscript{37} According to STEG official, 44% of unpaid bills come from households. STEG’s union, however, blames the losses on other state actors, saying that unpaid bills from municipalities account for 63% of lost revenue, compared to only 15% from households.

\textsuperscript{38} التقرير حول المشاريع العمومية مشروع قانون المالية 2022

\textsuperscript{39} Ben Rabah I., (2017) Quelle stratégie de réforme de la subvention énergétique en Tunisie ? – Tribune de l’ITCEQ n°19

\textsuperscript{40} Chebli F., (2017) Politique énergétique en Tunisie – Notes et analyses de l’ITCEQ n°55
the same. For consumers who fall into the other categories, the new tariff schedule retains the same consumption categories. The unit cost per kWh has increased by 5% overall. Natural gas rates have increased by 7%. Due to the pressure exerted by international financial institutions and rating agencies regarding the implementation of the reform plans announced since 2016, the government has committed to remove subsidies on non-consumer-oriented commodities, in parallel with direct intervention in the amount and structure of subsidies. Discussions are also taking place on how best to target social pricing, which risk fueling tensions between socio-economic groups. In the meantime, STEG continues to apply new tariffs at the latest pricing, included in the Finance Law 2022 which entered into effect starting 1 May 2022, with the billing of natural gas and electricity at rates ranging between 12.2% and 16% for residential customers and 15% for industrial customers.

Nevertheless, the three causes for the increase in subsidy spending include the increase in imports due to the increase in the energy deficit, the increase in the price of a barrel of oil, and the deterioration of the exchange rate. The financial statements of STEG in 2017 produced a loss estimated at 1,193.7 million dinars, compared to an estimated loss of 354.4 million dinars for the year 2016. According to the report issued by the Ministry of Finance on public institutions, this deterioration is due to the increase in the exchange rate of the euro and the dollar against the dinar in the same period, which resulted in net financial expenses estimated at 1,039.9 million dinars in 2017, compared to 635.4 million dinars in 2016. For STEG, the losses in 2017 were mainly due to financial charges (interest and exchange losses) of bank loans in foreign currencies concluded and paid off by STEG without state support to finance its purchases and investments. The same report also states that 2018 recorded a loss of 2,093.5 million dinars due to an increase in the price of oil barrels since 2017, but also because of the depreciation of the dinar against the dollar during 2018. The result was 1,543.1 million dinars in net financial expenses in 2018, as compared to 1,039.9 million dinars in 2017, which led to an increase in the price of purchase and production for STEG. According to the 2020 Finance Law, STEG has recorded a total of 1,500 million dinars stemming from exchange losses and bank interest, which resulted from fluctuations in the exchange rate of the dinar against the dollar and the euro. Thus, after the application of IMF conditions regarding the devaluation of the dinar, the depreciation of the dinar against the euro and the dollar since April 2016 is the main factor explaining “the over-indebtedness” of this public company.
It is therefore important to specify that STEG’s financial problems are not the result of mismanagement of its finances; they result mainly from the increase in imports caused by the energy deficit, the increase in the international price of oil, and the deterioration of the exchange rate. STEG has no control over these three factors, they are the direct result of governments choices being guided by IMF requirements, namely the liberalization of the exchange rate and the introduction of “true prices” policies.

Despite all the arguments around the financial situation and the failure of STEG to justify the “abandonment” of its role as an actor who could play an important role in the energy transition, it is clear that the real motivations behind this abandonment are the negotiations with the IMF. Indeed, privatization has always been one of the pillars of the IMF’s structural adjustment programmes and its ultimate solution to redress economic and financial imbalances. This privatization process accelerated during the 1990s, with 250 public enterprises being privatized between 1987 and 2010, and now impacts other public companies including STEG, which is currently part of the restructuring programme for public institutions presented in the context of the latest negotiations with the IMF.

In order for Tunisia to repay its debt, the country must engage in activities that generate foreign currency. This perfectly explains the fact that according to the legislative framework in place, the only plan of the state to change its energy policy up until now is to shift towards the export of renewable energy. With the country’s debt ratio at around 100% of its GDP in 2021, the repayment of the debt does not only weigh on public finances but also on investment and development spending and particularly on the public investment necessary for the energy transition, which would support STEG in carrying out this transition. As for the current government, it is engaged in policies that tend in the same direction.

Is the Private Sector the Last Resort for Ensuring the Energy Transition?

One of the main themes of the IMF reforms is “developing Tunisia’s private sector so as to increase growth and make the country’s economy more employment-oriented”. Achieving this would ensure that the national energy transition receive support from all the major media outlets, but especially from the partnership union the Confederation of Citizen Enterprises of Tunisia (CONECT, Confédération des Entreprises Citoyennes de Tunisie) which recently launched a campaign called “Sayeb triciti” (Free the electricity) to address the challenges facing the national private sector. Some of these challenges include removing the barriers to the promotion of renewable energy and the acceleration of the energy transition, which has the very noble goal of ensuring a balanced state for the state’s finances.

48 مصطلحات الجوبيتي - المؤسسات العمومية التدمير الممنهج ومغالطات خطاب الخصخصة - الدرب نوفمبر 2020
49 Fonds Monétaire International - Communiqué de presse n° 21/52
In reality, the main barrier to expanding the reliance on renewable energy is its high cost compared to conventional sources. Several renewable energy technologies have made considerable progress on this front, such as wind and solar photovoltaic, but state intervention in the form of subsidies and financial aid are still needed to encourage investment in this sector worldwide. In Tunisia, the national means of support available for a renewed energy policy remain weak. With the passing of Finance Law No. 54-2013 (Articles 67-68), Tunisia established the Energy Transition Fund (ETF) as an instrument to specifically support energy policy in Tunisia and accelerate the country’s energy transition. Aside from Decree No. 2017-983, which sets out the rules for the organization and operation of the ETF, exactly how this fund will be provided with additional loans and repayable allocations or participation in the capital market has yet to be defined, and its current intervention is limited to the provision of grants. Even under the Tunisian Investment Fund (TIF) created by Law No. 2016-71, which allows the provision of aid and loans in the context of new investment projects, only renewable energy projects subject to the authorization regime are eligible for this fund, and are subject to specific criteria which apply to each project site.

Moreover, while some of the funding needed for the Tunisian Solar Plan may come from foreign direct investment, no effort has been made as of yet to explore the means necessary to reduce dependence on technology and capital from industrialized countries, which reinforces Tunisia’s peripheral position, since the country’s national renewable energy sector is not sufficiently equipped to carry out the large-scale projects expected in the current context. Furthermore, despite the existence of some national players, Tunisia’s efforts to attract foreign investors tends to exclude local companies, giving priority to foreign companies and particularly European ones who have already developed projects of the same scale with the same technology. Indeed, projects are selected based on the company’s prior experience or its subcontractors, as well as how consistent and feasible the project is. This also favours foreign investors from countries that develop renewable energy projects, have greater financial resources, and benefit from large subsidy programmes. Thus, under the authorization regime (projects of 10MW), of the 22 projects that received an agreement-in-principle after the three rounds of tenders between 2017 and 2019, only half of the project holders were Tunisian and only four projects are carried out exclusively by Tunisian companies. In comparison, five projects involve exclusively French companies and three involve exclusively German companies. With regard to concessions for solar energy production, all five projects (for a total of 500MW) were awarded to foreign companies. The Norwegian company SCATEC Solar alone has won the bidding for three projects, for a total of 300MW.\footnote{51}
An Energy Transition “Blocked” by Conflicting Interests?

When the IMF announces that thanks to the reform of public enterprises, Tunisia will strengthen competition and open its economy to private sector investment, it is really focused on foreign investments. Nevertheless, this is not the problem for the national private sector: according to CONECT, the problem is the blocking of the General Federation of Electricity and Gas (FEG, Fédération générale de l’électricité et du gaz) under the Tunisian General Labor Union (UGTT, Union Générale Tunisienne du Travail) which takes the Tunisian energy transition hostage only to ensure the purchasing power of STEG workers.

With Law No. 2015-12, STEG was forced to buy the surplus of electricity from producers of renewable energy at fixed prices. But what STEG really fears is being forced to purchase electricity from foreign companies producing renewable energy in Tunisia at international market rates. This fear explains why the FEG is blocked under UGTT for large-scale projects.

The former Minister of Industry, Mines and Energy describes this blockage as sabotage, and accuses the FEG of “sabotaging” the operation of the 10 MW photovoltaic plant in Tataouine, which was built under the authorization regime put in place by STEG and a subsidiary of ENI (an Italian oil company). Indeed, the UGTT has not connected this power plant to the national grid, even though it has been ready to be operational since June 2020. This situation has not yet been resolved, and the plant is waiting to be connected to the national grid while negotiations with the union continue.

Moreover, the UGTT’s opposition does not target this project in particular, nor the purchase of electricity from a private producer, but rather privatization in general. Indeed, the FEG’s opposition to Public Private Partnerships and the privatization of electricity production from renewable energy is not new. As early as 2014, the UGTT spoke out against the drafted law prepared by the Ministry of Industry and adopted by the Jomaa government, which would eventually become Law No. 2015-12, on the grounds that this draft was developed without either the involvement of the UGTT nor the managers and engineers of STEG. The secretary general of the FEG explains the reason this law was rejected is because the project was launched hastily and without reference to prior studies or a general national energy strategy. In 2018, the FEG reiterated a call for to stop the privatization of the power generation sector. Later, in 2020, a few months before the UGTT block the plans for the Tataouine power plant, the government issued a decree authorizing the creation of renewable energy from self-generating electricity companies and defining the conditions for the transport of electricity, as well as the sale of surplus energy to STEG. The Secretary General of the FEG then expressed the federation’s categorical opposition to the privatization of electricity production in Tunisia. These policies have been described as opening the way for private and foreign investment, favouring the profit of investors at the expense of the public company. For the FEG, orienting the production of electricity around private companies and selling it directly to customers would disrupt the
electricity network and have an impact on the distribution of electricity, making it inaccessible to certain sectors of the population.

The FGEG’s position can also be explained by the fact that, on the one hand, STEG’s role is currently limited to ensuring the transport of electricity, purchasing surplus self-generated electricity, and authorizing the creation of companies specializing in electricity production for local consumption (sold to STEG) or for export. On the other hand, the only project STEG can invest in are those that improve or enlarge the electricity transmission network. STEG’s gain in this process will be minimal, since the costs of electricity transmission will be charged to the renewable energy production units. This price has been calculated to allow the amortization of investments made by STEG, which is of little interest to the FGEG, since the latter thinks that STEG, the largest Tunisian company in terms of revenue, should play a more important role in the energy transition and be supported to invest in large-scale projects in the renewable energy sector.

In reality, the FGEG is subject to the same changes as the STEG, both due to its monopoly as well as the country’s political and socio-economic situation, which impacts the STEG’s financial situation. In addition to this, the FGEG has no other tool of claim besides blocking projects that it considers dangerous for STEG. Thus, there are currently 172 blocked authorizations with a total power volume of 32 MW.

**Citizens: The First Beneficiaries of the Energy Transition?**

The strategy adopted by successive governments over the past decade has focused on attracting private, especially foreign, investors rather than public services and securing their profits. This has resulted in the neglect of community rights, which ranges from inadequate access to electricity to land dispossession, especially for people living in already marginalized areas. Indeed, in some regions it is the citizens who oppose renewable energy projects, such as the wind turbine projects in Borj Essalhi in Cap Bon, whose establishment more than 20 years ago has led to many injustices, or the 120MW project in Segdoud in Gafsa led by Engie-Navera, a Franco-Moroccan consortium. This latter was one of the five mega projects announced with a ceremony at the Government Palace. Citizens consider the project to further contribute to marginalization, since it will create a monopoly over their lands and resources, and the local populations have no reason to believe they will benefit from the revenues made from the energy produced on their own land. Furthermore, current policies are too focused on the implementation of large projects at all costs, and do not sufficiently take into account the needs of local populations, the environment in which these projects are located, or the conditions required for the economic integration of local population into the national economy.

On the other hand, those working in the private sector are making efforts to win over the citizens by arguing that the implementation of projects for the production of renewable energy will result in a decrease in the price of energy bills for

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57 À Borj Essalhi, le prix salé des éoliennes – Inkyfada
58 "C’est notre soleil!" : à Segdoud, la lutte pour la souveraineté énergétique – Inkyfada
consumers. However, this claim remains to be proven. Indeed, the most difficult barrier to overcome remains the high cost of renewable energies, which are not yet competitive with fossil energy. The countries that have succeeded in having a very high share of renewable energies, such as Germany, Spain and Denmark, have granted high subsidies to the renewable energy sector in order to cover additional costs. In Germany, for example, the subsidies are covered by the consumers. In Tunisia, the situation is much more complicated, since electricity produced from natural gas is already subsidized by the state. In order to integrate a significant amount of electricity produced by renewable energies into the Tunisian energy mix, the State must devote an even greater subsidy, even if a portion of this subsidy has to be funded by citizens. Nevertheless, in the absence of official estimates for the price that would be charged to consumers, it is clear that only the reduction of gas and fuel consumption in favour of renewable energies will reduce the budget deficit and improve the energy dependence of the country as a whole. In other words, the energy bill of the country as a whole will benefit from this arrangement, even if the electricity bills of citizens does not. Indeed, the three calls for tenders recently announced an investment of 5 billion dinars ($1.5 to 2 billion) into the installation of 2000 megawatts (MW) of renewable energy. This project will save fuel since the average price of a kilowatt hour (kwh) is estimated at 100 millimes/kwh, half the cost of producing electricity from natural gas (200 millimes/kwh). The energy bill will also be reduced by avoiding production costs associated with natural gas, which amounts to nearly 600 million dinars per year. Through this approach Tunisia is expecting to make benefits of 100 millimes on each kwh and thus reduce its energy dependence through a reduction of 30% of gas imports. There has not been much evidence presented to substantiate the claims about the direct benefits this approach would have for lowering costs for consumers. Indeed, the arguments concerning the decrease in consumers’ bills, if they really exist, should be made as clear as those pertaining the decrease of the energy bill for the country as a whole in order to convince the consumers to play an important role in the change in the mode of energy consumption. On the other hand, involving citizens in the process of energy transition is essential, but this requires first having a clear plan with clear political goals which go beyond the vague promises that citizens have heard for several years now.

Which Way Forward to Accelerate the Energy Transition?

The reforms for the energy transition are based on the encouragement of investment in the renewable energy sector. We hear the same refrain time after time: implementing legislative reforms would release the necessary funds to achieve the ambitious projects planned by successive governments. Beyond that, we hear the same recommendations and requirements of international donors, namely the abolition of authorizations, the removal of energy subsidies, and the acceleration of the price adjustment to reach the real prices in 2023. To improve the Tunisian business climate, legislative reforms will be needed, in addition to a further liberalization of the energy sector for export, and a plan for overcoming the lack of confidence of investors.

However, Tunisia does not have a solid long-term plan to accommodate its ambitions to increase the amount of renewable energy it generates. The integrated planning for the period 2017-2022 was set mainly with reference to the objectives of the Tunisian Solar Plan. Despite the fact that Law No. 2015-12 provides for a national plan for the production of electricity from renewable energy within five years of it going into effect, no such plan has been implemented, even though in 2018, ANME began preparing the studies necessary for its development.

Furthermore, the current government is not leading any of its initiatives in this direction. Indeed, the proposed 2023–2025 development plan is the most short-term plan in comparison with the previous five-year development plans. With its short-term agenda, this plan does not aim to do more than implement the reform programs linked to international cooperation programmes. Indeed, at a press conference held on 7 June 2022 concerning the reform programme, the Minister of Energy, Mines and Renewable Energies confirmed that the national energy transition will (still) require legislative reforms, the digitization of the sector, the establishment of a regulatory body for the electricity production sector, speeding up the process of releasing a publication detailing the programme of electricity production from renewable resources for 2022-2025, and the acceleration of the electrical connection between Tunisia and Europe via Italy. The target for the share of renewable energy in the production of electricity has since been raised to 35% instead of 30% in 2030, which would require mobilizing an annual investment of 900 million dinars to boost energy projects planned in this framework. To do this, the Minister of Industry, Energy and Mines announced that new bidding processes for the production of electricity from renewable energy will be launched in a few weeks. She believes that the achievement of the goal of 35% in eight years is “very possible”; even if the country remains dependent on imported fossil fuels and its current national energy mix contains only 3.7% of renewable energy. The minister also reemphasized her intention to develop the production of green hydrogen through the establishment of a legislative framework adapted to the production of hydrogen both for the local market and for export. The Minister plans to (further) update the regulatory and legal framework governing the production of electricity from renewable energy sources so that it covers other resources such as green hydrogen and is adapted to global progress in the field of clean energy. His plans are based on the consideration that new clean energy sources are promising niches for production, employment, investment and sustainable development, and therefore for growth.

It is clear that the Tunisian energy transition in its current state reflects the absence of a real plan that would allow Tunisia to have a set of coherent policies and be less affected by changes in international trends. The absence of an energy policy is the greatest obstacle to the improvement of the national energy situation. Regardless of whether it is led by the private or public sector, it is necessary to put a long-term energy plan in place that goes beyond general guidelines and objectives.

However, the Tunisian energy situation is very costly for the country. Tunisia faces a significant energy deficit that has continued to grow in recent years. Indeed, national production has declined by 39% over the period 2010–2019. This can best be observed in the crude oil sector, with a decline in exports of 55% over 10 years and 37% increase in imports, which in 2019 generated a deficit in the total balance of foreign trade of 40%, which had remained at about 6% during the previous decade. Thus, the energy deficit has

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increased ninefold in just ten years, from 0.65 million tons of oil equivalent (Mtoe) in 2010 to 5.8 Mtoe in 2019.\textsuperscript{62} Despite the slowdown in the consumption of energy products in 2020 and 2021 resulting from the health crisis related to coronavirus, the energy deficit continues to generate a significant deficit in the energy trade balance, reaching -5,219.2 billion dinars in 2021, which makes up 32.2% of the total deficit in the trade balance.\textsuperscript{63} In addition, the Tunisian energy dependence, which reached 48% in 2021 from 11% in 2010, is likely to increase again in 2022. Indeed, Tunisia has already recorded a loss of 12% of its energy independence rate in the first quarter of 2022. This was due to the increase in the volume of imports of energy products, a figure which more than doubled in March 2022 (+117.2%),\textsuperscript{64} combined with the unprecedented rise in energy prices since the Russian military intervention in Ukraine, which is expected to last until 2024.

Nevertheless, the Bouden government is determined to unfreeze this situation and accelerate the energy transition by launching bidding processes for large projects complete with approval ceremonies. In this she has the support of the Minister of Economy and Planning, the Minister of Industry and Energy, the Minister of Finance, the Minister of Foreign Affairs, as well as investors and donors such as IFC, Proparco, ADB, Bred, and World Bank. All agree on the energy transition plan and pledge to support the country in this transition by improving Tunisia’s competitiveness for different solar photovoltaic projects,\textsuperscript{65} yet this is all being done without STEG and its FGEG, and without input from the citizens living in the regions affected by these major life-saving projects.

In this situation of no long-term energy policy and with struggle that exists between the UGTT and the government of Bouden in the national political context and particularly in the renewable energy sector, it is difficult to talk about an energy transition at all, let alone a fair energy transition. The energy transition cannot be implemented by a single actor alone, even if it is supported by donors. Indeed, it is important to include all stakeholders involved in this sector, including the trade union. After all, the term Just Transition\textsuperscript{66} was developed by the trade union movement to encompass a range of social interventions needed to secure workers’ rights and livelihoods as economies move towards sustainable production, to combat climate change, and to protect biodiversity.

The energy transition cannot be conceived as the mere process of replacing fossil energies with renewable energies to improve Tunisian economic situation. The Tunisian government should design coherent policies aiming at social development in all its aspects. The energy transition depends on the state having a coherent vision of the plan, one which would create an institutional framework to strengthen the interaction between social actors and different stakeholders, facilitating the design of an adequate social policy.\textsuperscript{67} The important task of forming a stable and coherent policy aimed at solving the fundamental problems faced by the Tunisian citizens cannot be implemented without first involving all the various stakeholders which are interested in different aspects of renewable energies: be it the environmental aspect, the economic aspect, the industrial aspect, the employment aspect, the social aspect, or the

\textsuperscript{62} Observatoire National des Energies et des Mines – Bilan énergétique 10 ans d’évolution 2010 - 2019
\textsuperscript{63} Institut national de la statistique – Commerce Extérieur aux prix courants, Décembre 2021
\textsuperscript{64} Institut national de la statistique – Commerce Extérieur aux prix courants, Mars 2022
\textsuperscript{65} Transition énergétique : le gouvernement passe la vitesse supérieure
\textsuperscript{66} The term «just transition» was created by North American unions in the 1990s to describe a system of support for workers who were put out of work because of environmental protection policies.
\textsuperscript{67} Khribich A., Kacem R.H., Bazin D., (2022) «The Impact of Social Development on Renewable Energy Consumption in Tunisia: A Need for Sustainability and Equity of Capabilities,» GREDEG Working Papers 2022-05, Group de Recherche en Droit, Economie, Gestion (GREDEG CNRS), Université Côte d’Azur, France.
scientific aspect. By considering these aspects, the different stakeholders will have a real impetus to catalyze the change towards the adoption of renewable energies and to promote the integration and growth of these energies.

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