

SONELGAZ in Algeria: Diversification into Industrial Energy Efficiency Services and Value Creation Potential in a Changing Sector

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سونلغاز في الجزائر: التنوع في خدمات كفاءة الطاقة الصناعية وإمكانية خلق القيمة في قطاع متغير

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Abstract: SONELGAZ, a major player in the electricity sector in Algeria, is exploring diversification toward energy efficiency for industries. An in-depth study analyzes the advantages (reduction of energy consumption, savings, and sustainable development) and challenges (initial investment, culture change, and competition) of this strategy. The aim is to inform SONELGAZ's decision-making and to feed the debate on the energy transition in Algeria. Success will depend on careful planning, sound investments, and collaboration with key partners, such as the economic partner, the foreign company General Electric (GE). This diversification represents a major opportunity for the company and for Algeria to meet the challenges of the energy transition and to create a sustainable energy future.

Keywords: Energy transition, stakeholder engagement, overall performance, diversification strategy, Algeria.

Jel Classification Codes : L 2 ; L 32 ; L 94 ; P 28

ملخص: سونلغاز، الفاعل الرئيسي في مجال الكهرباء في الجزائر، تستكشف التنوع نحو كفاءة الطاقة للصناعات. دراسة معمقة تحلل مزايا (تقليل استهلاك الطاقة، وفورات، وتنمية مستدامة (وتحديات) الاستثمار الأولي، وتغيير الثقافة، والمنافسة (لهذه الاستراتيجية). الهدف هو إلقاء الضوء على عملية صنع القرار في سونلغاز وتغذية النقاش حول التحول في مجال الطاقة في الجزائر. يعتمد النجاح على التخطيط الدقيق والاستثمارات الحكيمة والتعاون مع شركاء رئيسيين مثل GE. يمثل هذا التنوع فرصة كبيرة للشركة وللجزائر للاستجابة لتحديات التحول في مجال الطاقة وخلق مستقبل طاقتي مستدام.

الكلمات المفتاح : انتقال الطاقة، إشراك أصحاب المصلحة، الأداء العام، استراتيجية التنوع، الجزائر.

تصنيف JEL : L 2 ; L 32 ; L 94 ; P 28

I -Introduction :

Today, it is clear that access to electricity has a critical impact on the growth and well-being of societies, including for economies in transition such as Algeria. Incumbent electricity operators are facing major challenges in a changing environment, pushing them to reorient their strategies to remain competitive and aligned with the requirements of performance, development of new markets, and energy transition.

Traditionally focused on social responsibility, these state-owned enterprises now need to adopt a more business-performance approach to survive in a market that is open to competition. Several key points are highlighted for their adaptation, including technological innovation, the use of various energy sources, improved user satisfaction, responsible financial management, stakeholder engagement, transparent governance, wise strategic choices, an entrepreneurial spirit that prioritizes the achievement of ambitious objectives, and social and environmental responsibility.

In line with the search for a cleaner and more sustainable energy future, energy operators are facing a major challenge: reconciling their public service obligations with their competitiveness imperatives. Our contribution to this research effort aims to shed light on this central question by exploring two major axes:

- Diversifying activities: what are the opportunities? The energy transition offers energy operators the opportunity to diversify their activities by offering energy optimization solutions to industrial companies. This diversification could generate new revenues and help reduce overall energy demand, thus meeting both the imperatives of competitiveness and the obligation of operators to meet the basic needs of the population.
- The Benefits, Risks and Challenges: How to Create Value for All?: Assessing the potential benefits, risks and challenges associated with this diversification is important to ensure the success of this strategy. Indeed, it is essential to take into account the interests of all stakeholders: Industrial companies (reduction of energy costs and improvement of their environmental performance); Energy consumers (reduction of energy bills and contribution to the energy transition); State structures at the decentralized level, committed to eco-responsibility and sustainable progress; Energy operators (consolidation of their market position and positive contribution to the energy transition).

II- Methods and Materials:

The methodology adopted for this study is a qualitative case study. This method is appropriate for understanding a phenomenon in its context and for exploring complex issues. It collects rich and detailed data, including non-quantifiable data, such as perceptions, attitudes, and experiences. The case studied is that of SONELGAZ, the incumbent electricity operator in Algeria. SONELGAZ is a public company that supplies electricity to more than 99% of Algerian households. It is also active in covering the entire energy value chain. This case study includes a spotlight on innovative approaches for the electricity industry and for incumbent electricity operators, a presentation of the energy context

in Algeria and SONELGAZ as an incumbent operator, as well as a future projection on SONELGAZ's commitment to energy efficiency services for industrial companies. To inform this case study, we gathered information from multiple sources, including:

- An exploration of the strategic options of the incumbent electricity operators,
- A presentation of the energy context in Algeria and SONELGAZ as an incumbent operator,
- Gathering information from the managers of the SONELGAZ company ,
- An exploratory study by participatory observation of the potential for the deployment of energy efficiency services by SONELGAZ.

Also, it is essential to mention that the:

- The information collected was qualitatively analyzed using thematic analysis. This analysis has made it possible to identify the main themes and concepts related to the opportunity and relevance of SONELGAZ's diversification of activity into energy efficiency services.
- The main purpose of this research is to provide an in-depth understanding of the opportunity and relevance of SONELGAZ's diversification into energy efficiency services for industrial companies, in the evolving energy context in Algeria. To do so, the study will analyze the motivations and challenges of SONELGAZ's diversification, assess the opportunity and relevance of its commitment to energy efficiency services, and propose scenarios for its future development.
- The key learnings from this case study will inform SONELGAZ's decision-making and feed into the debate on the energy transition in Algeria. They will also enrich the literature on the diversification strategies of electricity operators and contribute to the understanding of the challenges of the energy efficiency market.

III-Results and Discussion :

The changing energy landscape requires historical electricity players, such as SONELGAZ, to adapt and innovate to ensure their sustainability and growth. Industrial energy efficiency is emerging as a key strategy to address today's challenges and create value for stakeholders. Indeed, it makes it possible to actively contribute to the energy transition and generate economic benefits. In the Algerian context marked by profound transformations, energy efficiency is becoming a national strategic priority. Concerted efforts and innovations, both institutional and private, are needed to optimize energy efficiency in Algerian industry.

Faced with the changes in the energy sector, SONELGAZ, a major player, must adapt and innovate to ensure its sustainability. The search for new business models is important to meet the requirements of stakeholders. This transformation opens up promising opportunities. A bureaucratization is necessary to increase agility and responsiveness. Responsible investments in sustainable areas, such as energy efficiency, are essential. The analysis of SONELGAZ's behavior in the face of energy management challenges reveals opportunities and challenges related to diversification towards the provision of energy efficiency assistance for industry professionals. This contribution aims to identify the keys to SONELGAZ's success in this new field.

In the face of constantly changing national and international economic conditions, incumbent power operators need to take a multi-faceted approach to succeed. Exploring new markets and working with partners is essential. By drawing on renewed theories, they can develop comprehensive strategies to adapt to market changes, generate shared benefits, and thrive in a competitive environment. This contribution proposes a review of the broader literature to shed light on this research work.

- **Disruptive Innovation Theory:** This theory, developed by Clayton Christensen (Christensen, 2021), explains how technological innovations can disrupt established markets: To innovate, companies must tap into a wide range of resources, both internal and external (babaroux, 2014). Incumbent electricity operators, by adopting a strategic vision focused on innovation, can develop new technologies and approaches, such as alternative energy solutions and smart grids, to meet the changing needs of consumers and compete effectively with new challengers in the energy industry.
- **Stakeholder theory:** This approach seeks to establish mutual trust and shared understanding with all stakeholders involved in the company (Mullenbach, 2007). In his 1995 work, Clarkson (Clarkson, 1995) introduces a distinction between the fundamental participants directly concerned by the economic process of the enterprise with formal or contractual relationships, such as shareholders, employees, managers, suppliers, customers, etc. Indeed, secondary stakeholders, such as consumer associations and local authorities, maintain informal relations with operators Historical. By prioritizing the satisfaction of customers, employees, communities, and investors, these operators can build positive relationships with these stakeholders, which can provide them with increased support and a better reputation in the market.
- **Transaction cost theory:** This economic theory supports firms' initiatives to control their transaction costs by adopting effective governance and management methods (Abecassis, 1997). By adapting to a more efficient and market-oriented approach, electricity operators can improve their operational efficiency, reduce costs and strengthen their competitiveness in the face of a progressive liberalization of the energy market.
- **Change Management Theory:** The adoption of a new strategic direction represents the implementation of new ways of working and managing. Change management theory offers approaches to effectively manage this transformation process. Utilities can apply innovative management models based on results, innovation, and customer centricity. Thus, according to Annie Judith MOUANGUE-SMITH (Mouangue-smith, 2022), For public companies to succeed in transformation, they must excel in their operations and adopt a strategic and coherent approach to the market.
- **Resource and capacity theory:** This approach suggests that firms need to develop and exploit their unique resources and capabilities to achieve a sustainable competitive advantage (Grandvar & Sopamot, 2006). By developing capabilities in innovation, inflow management,

marketing and skills management, incumbent electricity operators can strategically position themselves in the energy market and seize new opportunities to conquer emerging markets.

- **Michael Porter's Competitive Advantage Theory:** According to Michael E. Porter, (Porter, 2023) companies can gain a competitive advantage by adopting one of three generic strategies: cost leadership, differentiation, or focus. In the context of incumbent electricity operators, this means that they must choose a strategic approach that differentiates them from their competitors, whether by offering competitive tariffs, offering innovative services or targeting specific markets.
- **Total Economic Value Theory:** Pressure on natural resources is intensifying globally in the face of rising energy demand. States, companies, organizations and NGOs are mobilizing to optimize the use of non-renewable resources. Today, improving energy efficiency is a major factor in improving quality of life and creating value. Indeed, according to Frederick M. Peterson and Anthony C. Fisher (Peterson & Fisher, 1977), this perspective emphasizes the economic development of natural resources. This can also include exploring complementarities between different energy sources.
- **Public goods theory:** Electric utilities are often considered public goods because of their essential nature to society. The theory of public goods (Le Masne, 2007) emphasizes the need to provide these services efficiently and equitably, taking into account the needs and expectations of users.
- **Customer experience theory:** for Laurence Chabry, Florence Gillet-Goinard and Raphaëlle Jourdan, this approach highlights the overall customer experience (Chabry, Gillet-Goinard, & Jourdan, 2020) with a company. Utilities need to be attuned to market trends in order to provide customized solutions, improve satisfaction, and drive loyalty.
- **Strategic alliance theory:** In an ever-changing environment, utilities can benefit from strategic partnerships with other partners. Strategic alliances (Morin, 2002) make it possible to share costs, access new technologies and skills, and expand their geographical reach into new markets.

2. The importance for incumbent electricity operators to invest in the strategic business of providing energy efficiency services to industrial companies and its role in increasing value for stakeholders

Investing in energy efficiency for industrial companies offers many benefits to power operators, investors, employees, customers, and the state. It allows operators to diversify their activities, increase their revenues and meet customer expectations. Investors appreciate the company's commitment to sustainability and growth. Employees benefit from new opportunities and a more motivating work environment. Customers reduce their energy costs and improve their competitiveness. The State, for its part, stimulates wealth creation, controls the energy costs of companies, strengthens energy autonomy, reduces environmental impact and increases tax revenues. Energy efficiency is therefore a winning strategy for all stakeholders.

3. Energy Transition in Algeria: Industrial Energy Efficiency as a lever and as a business opportunity

Faced with growing energy demand and limited fossil resources, it is imperative that Algeria adopt a cleaner and more sustainable energy future. The transformation of the energy system requires a comprehensive and inclusive approach, involving all stakeholders. Investment in industrial energy efficiency is decisive for reducing energy consumption and greenhouse gas emissions. This contribution explores specific strategies to optimize energy use in the manufacturing sector, taking into account synergies with other sectors and renewable energy initiatives.

3.1. Current national energy context and future changes

The current energy situation in Algeria is essentially characterized by high energy consumption, unequal distribution of energy consumption and continuous growth in energy demand.

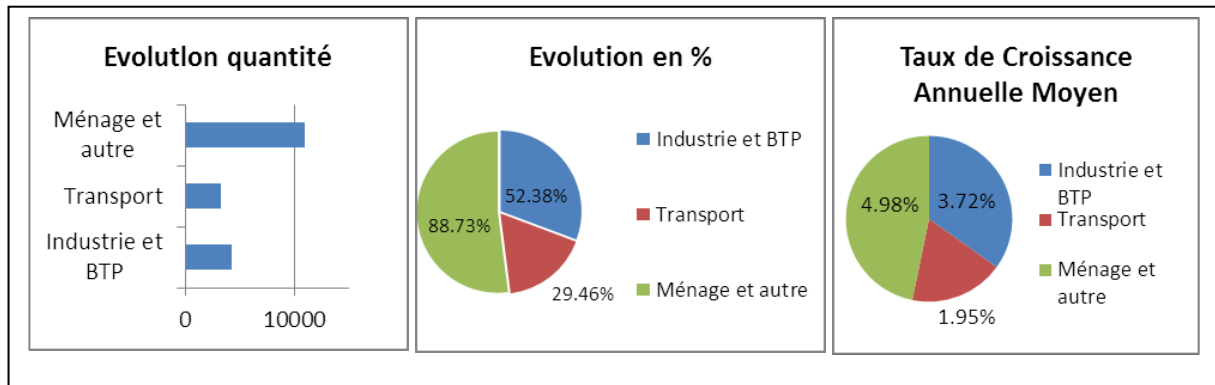
- High energy consumption and uneven distribution :

In 2021, energy consumption in Algeria was distributed as follows: 24% for industries and construction, 47% for households and others, and 29% for transport: (Ministry of Industry and Mines, 2022):

Energy use in Algeria by sector of activity is constantly increasing, in line with the trajectory observed since the year 2000, as illustrated by the data in the table below:

4,98%

year	Sectors of activity		
	Industry and construction	Transportation	Housekeeping and other
2010	8019	11215	12415
2011	7440	12189	13449
2012	7948	13372	15075
2013	8010	13762	15704
2014	8238	14551	16579
2015	8818	15495	18145
2016	9242	15057	18584
2017	9943	14895	19808
2018	10450	15281	22414
2019	11424	15405	23529
2020	10 911	13499	22 056
2021	12 220	14 520	23 431
Total	112 663	169 241	221 189
Evolution quantity	4 201	3 305	11 016
Evolution en %	52,38 %	29,46%	88,73%
Average Annual Growth Rate (AAGR)	3,72%	1,95%	4,98%



Source: Based on data from the national energy balance sheets from 2010 to 2021, from the Ministry of Energy and Mines (www.energy.gov.dz)

The analysis of energy consumption by sector in Algeria reveals a growing dynamic, with the household sector in the lead (221,189 K toe), followed by transport (169,241 K toe) and industry (112,663 K toe). In the face of this increase, close collaboration between governments, energy companies and industry is needed to promote energy efficiency and control growing demand. A proactive and concerted approach is essential to address the challenges and opportunities presented by this dynamic evolution.

- **Continued growth in energy demand:** If the current situation of domestic energy demand continues, it is projected to double by 2030 or even triple by 2040. This growth is fueled by the country's economic and population growth, as well as the growing popularity of oil and natural gas goods. For a graphical visualization of this evolution, we refer to the illustrative graph (Graph N°01, see Appendix 01).
- **High dependence on natural gas :** Natural gas plays an important role in Algeria's energy system, supplying more than two-thirds of household energy consumption and about one-third of the country's overall energy consumption (see Chart 2, Annex 2). In addition, almost all (98%) of the electricity produced in Algeria is generated from natural gas.
- **Patterns of energy consumption that mortgage natural resources and the well-being of future generations:** The structure of energy consumption in Algeria is unsustainable, marked by high intensity, unequal distribution, and over-dependence on natural gas. An economic and energy approach that focuses on the fight against energy waste is imperative. In this context, energy moderation and the judicious use of energy in energy-intensive sectors (transport, housing, tertiary buildings, industry) must be prioritised.

However, several questions and future changes arise around the following concerns:

- **The use of hydrocarbons :** Should we continue to consume hydrocarbons in the traditional way or adopt a more rational approach, focused on energy efficiency and the search for alternative solutions?
- **Energy production and consumption model :** How can we design an energy model that meets national needs, and optimizes available resources?

- **Energy transition by 2030** : How to plan an energy transition for Algeria by 2030 by defining clear objectives in terms of energy diversification and reduction of dependence on hydrocarbons?
- **Energy Security vs. Energy Transition** : How do we balance the need to ensure energy security (providing reliable energy for people and the economy) with the imperative to lead an energy transition towards a more sustainable approach?

3.2. Energy efficiency: a national and international concern

Faced with the energy emergency, Algeria must adopt a responsible management of its resources. This will reduce costs, improve business performance, preserve the environment and build a sustainable future. Adequate preparation and innovative regulations are needed for a successful transition

Internationally and according to the conclusions of the International Energy Agency (IEA) (International Energy Agency (IEA), 2020, p. 222), energy efficiency, described as a "hidden source of energy", currently occupies a strategic place in international energy policies. Now, the fight against energy waste has become a political and economic priority for governments. However, the lack of data and indicators suitable for monitoring energy efficiency often hinders the implementation of intentions. These essential elements are essential for optimising, monitoring and learning energy policies.

In this context, already in 2011, and according to data from the International Energy Agency (IEA) (International Energy Agency (IEA), 2020, p. 111), industry accounted for more than a quarter of Total Final Energy Consumption (TFC) worldwide, compared to about a third in 1973.

The transition to a sustainable energy mix is therefore an imperative necessity for Algeria, in order to guarantee its energy security, preserve its environment and stimulate sustainable economic growth. As such, the sustainable management of the energy issue is an important political and economic subject that concerns macro governance actors (For example, the reform of the institutional and regulatory framework, public policy on energy efficiency, etc.). etc.), meso-government actors (central government institutions, head of the energy sector) and micro-governance actors (the end customer, the supplier, competition, monitoring, etc.).

In this regard, and in the service of the 2030 Agenda, Algeria has made an active and comprehensive commitment to the negotiation process as well as to the various related consultations and initiatives to aspirations for a sustainable future nationally, regionally and internationally. It naturally adhered to the consensus surrounding the adoption of the SDG platform, as indicated in the Algeria Voluntary National Report 2019 (United Nations Development Programme, 2019), which assesses the progress of the SDGs. And to achieve SDG Goal 7 to ensure universal access to energy, Algeria is making efforts in three key areas: expanding access to electricity and gas, diversifying the energy mix with renewable sources, and reducing the environmental impact of energy consumption.

3.3. Towards a more energy-efficient Algerian industry: a collective challenge

The Improving the energy performance of Algerian industry is now part of the concern of the public authorities. Indeed Algeria is committed to better energy efficiency with a national program launched in 2011.

For the industrial sector, the goal is to save up to 34 million tons of oil equivalent (toe) by 2030 (Raquel Ersoy & Terrapon-Pfaff, 2021). Considerable energy savings are possible in Algerian industries, particularly in construction, metallurgy, mechanics and the oil and gas sector. To do this, it is necessary to implement operational excellence measures in industrial facilities. The public authorities' strategy in this area proposes concrete solutions such as the improvement of industrial processes, the optimization of production systems, the use of more efficient technologies and the awareness of companies.

In view of the above, The government is planning financial support for all sectors. This budget envelope testifies to the importance given to this issue. Although progress has been made in energy efficiency in various sectors, significant improvements are still possible, particularly in the industrial sector.

With this in mind, SONELGAZ, the national incumbent electricity operator, can play a key role in improving the energy efficiency of industrial companies. By strengthening its expertise services and promoting the self-production of renewable energy, SONELGAZ can help companies reduce their costs and contribute to environmental sustainability. This strategic collaboration can make SONELGAZ a leader in the energy transition in the industrial sector.

4. SONELGAZ, a responsible public economic company looking for new business models

Despite the reforms undertaken since 1988, Algerian state-owned enterprises are struggling to free themselves from bureaucracy and adapt to a constantly changing environment. To stimulate their growth and performance, these entities must adopt autonomous management, characterized by free managers, collective interest and financial autonomy, while being subject to effective economic regulation. In this respect, economic, technological, societal and strategic developments are forcing these companies to undergo a profound transformation. In this context, we look at the example of SONELGAZ, an energy company in Algeria, and how it could invest responsibly in sustainable development. Top of the form

4.1. The Algerian public economic enterprise: between the elimination of all bureaucratization of the company and the evolution of its environment

Despite the reforms initiated since 1988, Algerian public companies still suffer from organizational dysfunctions. However, the conversion of these companies into public limited companies owned by the State implies a total withdrawal of the State from direct management, since their economic performance is closely dependent on it. Indeed, according to Salah Mohamed, management autonomy is not a privilege, but a necessity for the company that wants to survive and prosper in a constantly changing market (Salah, 1991). In this context, M. Boussoumah (Boussoumah, 1989, p. 9) specifies that the reorganization of the public company in order to have complete autonomy of management requires the following results:

- the freedom of action of managers,
- an interest of the legal person,
- a certain patrimonial autonomy and,
- economic regulation and not administrative regulation.

It is certain that the orientation of the mode of management of the Algerian public economic company in this perspective will result in accessing its natural and dormant growth potential. It is clear that in order to develop good governance practices for the Algerian public economic company, and to put its vision and strategic plan in line with performance, its institutional and managerial stakeholders are expected to make a constant, responsible and irreversible investment in the elimination of any bureaucratization of the company, essentially by eliminating all clientelism (Zouaïmia, 1989, p. 145). It then becomes advantageous for the state shareholder to completely relinquish direct control of the national company. Taking this position does not mean that the state must relinquish its authority. On the contrary, it will strengthen it by promoting better governance and real performance of the public company. In doing so, the national economy will equip itself with an efficient economic public sector, capable of compensating for the shortcomings of the past. (Brahimi, 1989, p. 89).

Also, today, the environment of the Algerian public economic enterprise is evolving, it necessarily leads it to adapt. Different series of reasons can explain the evolution of the Algerian public economic company:

- Economic reasons related to the slowdown in growth and the stagnation of the resources of the public service, which make the national public economic enterprise compete with entities in the commercial sector that will try to take over its fields of activity under the constraint of the transition to a market economy and that of global competition,
- Technological reasons, the digital revolution and communication techniques caused by the generalization of micro-computing having a real impact only if it allows us to work differently,
- Sociological reasons again, which specify that the user, the customer, the staff and other stakeholders (internal or external, economic or institutional) of the public company have changed and that the expectations are no longer necessarily the same,
- The internationalization of trade, which is countered by deregulation and decentralization, leads to changes in the structures (Delion, 1977, p. 7) of the public enterprise in order to make it more responsive to change.
- Challenges in the saving of natural resources and investment in areas of activity with a high content in sustainable development and overall performance,
- Strategic reasons, wanting to propel the strategic horizon of the public company towards the entry into new strategic areas of activity or new markets, related to its core businesses.

4.2. The evolution of SONELGAZ over half a century: A management perspective (From the EGA era to the birth of a new energy player)

SONELGAZ's history, from its creation as Electricité et Gaz d'Algérie (EGA) to its development into a leading industrial Group, reflects a journey marked by key stages of transformation and adaptation to meet energy needs and challenges strengthening and diversifying the national economy. This evolution can be summarized as follows (SONELGAZ, 2023):

- **Creation of the EGA (1946):** The nationalization of the electricity and gas sectors in Algeria resulted in the creation of the EGA, assuming responsibility as a historical supplier of electricity and gas in an environment marked by colonization.
- **Dissolution of the EGA (1969):** Outside the colonial grip, the EGA is dissolved to give birth to the Société Nationale de l'Electricité et du Gaz (SONELGAZ), holding the monopoly of the production, transmission, distribution and trade of electricity and natural gas. This milestone marks a turning point in the role and scope of the company.
- **First restructuring (1983):** SONELGAZ underwent a first restructuring by creating subsidiaries specializing in specific fields, thus adopting a model of Parent Company and Subsidiaries. This decentralized organization promotes better project management and serves as a precursor to modern management practices.
- **Transformation into an EPIC (1995):** SONELGAZ evolves to become a Public Industrial and Commercial Establishment (EPIC). It is under the supervision of the Ministry of Energy and Mines and assumes a public service role.
- **Change of status to SPA (2002):** SONELGAZ becomes an Algerian Electricity and Gas Company as a Joint Stock Company (SPA), allowing it to diversify its activities and engage outside the national market.
- **Emergence of the Industrial Group (2004):** SONELGAZ develops into an Industrial Group by transforming its entities into subsidiaries dedicated to its core businesses.
- **New strategy and organization (2020-2021):** SONELGAZ adopts a new strategic plan "SONELGAZ 2035" focused on the role of responsible and sustainable energy company. A new two-tier organization is being set up with holding companies and executive management to implement this strategy.

This evolution sums up how SONELGAZ has gone from a historical company with a limited role to a major energy player encompassing several businesses and adopting new strategies to meet energy needs in Algeria and beyond.

4.3. SONELGAZ: for a responsible and profitable investment in new sustainable businesses

Social and environmental responsibility (CSR) represents a strategic opportunity for SONELGAZ to contribute to the energy transition and promote sustainable investments. The company could, for example, offer auditing and industrial energy renovation services. By adopting a participatory CSR approach, SONELGAZ can unite its employees and partners around a global performance culture. A

strategic approach to sustainable management would allow SONELGAZ to broaden its responsibilities and strengthen its alignment with its environment, at all levels (macro, meso and micro).

By adopting this socially responsible approach, SONELGAZ strengthens its strategic and societal positioning. The company then adopts a holistic approach to governance by integrating the principles of sustainable development, in order to Promote economically viable, socially equitable and environmentally sustainable energy solutions. This includes ISO 50001 certification for all its subsidiaries and support for industrial customers in the implementation of certified energy management systems. It is important to note that ISO 50001 (Afnor, 2023) is a consensus international standard developed by about 50 ISO member countries in 2011. Although this requires time and collaboration with foreign partners, this approach is part of SONELGAZ's growth strategy and change management.

5. SONELGAZ's behavior in the face of energy performance issues:

The more active involvement of SONELGAZ in responsible investment to support industrial companies in improving their energy performance requires an open mind on the part of SONELGAZ and its customers. Indeed, the integration of energy performance issues into the professional culture, long-term policy directions and prospects for development of SONELGAZ and its targeted customers is essential to achieve this objective.

5.1.The provision of energy efficiency services as a new source of value creation for the incumbent electricity operator SONELGAZ and its external parties

The offer of energy efficiency services has multiple advantages for SONELGAZ and its partners. It helps diversify revenue streams, expand service offerings, control operating costs, and reduce energy demand. SONELGAZ, as a long-standing player in the electricity sector, is ideally positioned to support its customers in reducing their energy consumption, thus responding to current environmental and economic challenges. From an economic point of view, energy efficiency services represent a significant source of income and profitability, while reducing dependence on a single source of income. In addition, it allows SONELGAZ to strengthen its strategic positioning by improving customer relations, brand image and differentiation from the competition. And to excel in this field, it is necessary to have the skills, resources and strategic partnerships to provide quality services at competitive prices.

5.2.Opportunities for SONELGAZ and its stakeholders

If the SONELGAZ group wishes to make a strategic choice of diversification by integrating energy services, like ENGIE in France (ENGIE, 2023), it will be important for it to mobilise the necessary resources and skills to ensure a quality service to its customers. Indeed, the choice of a development method in partnership with other companies, national and foreign, with a wealth of experience and proven know-how, is essential. In this context, a strategic partnership between SONELGAZ and General Electric (GE) in the field of support for national industrial companies in the integration of energy service solutions is a high value-added opportunity to:

- The company SONELGAZ, in order to first upgrade the compliance of its electrical equipment and installations to universal energy performance standards (certification of its electrical equipment and installations to the required standards: ISO 50001). To this end, the subsidiaries of the SONELGAZ group already constitute an important and solvent market for this new strategic field of activity. Especially since the recent changes made to the legal status of the SONELGAZ group open the door to offering new services, beyond its main activities. In addition, the choice of GE as a partner in this Strategic Business Area is more possible, as it is already a partner with SONELGAZ in other projects and areas of activity in Algeria. This partnership, once finalized, would have a great influence and would constitute a competitive advantage and a major commercial argument to attract potential customers, in Algeria and internationally (in particular, the African energy services market). Also, SONELGAZ will benefit from a strengthening of the expertise capacity of its engineers with its partner GE and ultimately act as a strategic partner to support ISO 50001 certification in Algeria and internationally.
- The multinational firm GE, which would benefit from SONELGAZ's customer portfolio and its customer information system to expand and sustainably develop this energy service provision on the Algerian market.
- national industrial companies, which will benefit from an opportunity to upgrade and certify their energy management systems. This investment in improving their energy performance will certainly have an impact on the optimization of their economic functions of production and cost; and enhancing their contributions to the imperatives of sustainable development.
- The community: This strategic investment pillar will be a key driver of the success of the national energy security and diversification policy.

5.3. Constraints or Opportunities for National Industrial Enterprises

From the outset, it is worth emphasizing the distinction often observed between:

- On the one hand, some companies perceive investments in energy efficiency and social responsibility as constraints on their business. However, a proactive approach can turn these constraints into opportunities for differentiation and sustainable growth. In Algeria, the National Agency for the Promotion and Rationalization of Energy Use (APRUE) supports companies in improving their industrial energy performance. APRUE offers energy audits, training and financial support for the integration of high-performance equipment.
- and, on the other hand, other companies naturally integrate these issues into their strategy and perceive them as opportunities for development. From this perspective, by taking a proactive and innovative approach to these issues, companies can create new products and services that meet consumer expectations and environmental challenges, while generating profits. For example, the French electricity company (EDF) has set up an initiative to help industrial and commercial customers reduce their natural gas consumption. The program offers free energy audits, personalized advice and financial aid for the installation of energy efficiency solutions. This initiative allows it to strengthen its image and build customer loyalty.

5.4. Key dimensions related to the possibility and opportunity for the incumbent electricity operator, SONELGAZ, to invest in energy efficiency for industrial companies: VISIONER approach

The incumbent electricity operator is facing an ever-changing environment, characterized by challenges such as the energy transition, growing energy demand and environmental concerns. In this context, strategic diversification towards the provision of energy efficiency services to industrial companies may be a relevant opportunity. This forward-looking reflection aims upstream to explore the possible implications, repercussions, costs, complexity, time to results, success factors and expert perspectives associated with this approach:

- **Overview (possible implications):** Diversification into energy efficiency services involves expanding the traditional role of the incumbent electricity operator, SONELGAZ, by becoming a strategic partner for industrial companies. This requires expertise in designing energy-efficient solutions, using advanced technology solutions and providing personalized advice to take a responsible approach to energy
- **Impact (repercussions):** The repercussions of this diversification could be positive for both the operator SONELGAZ and industrial companies. For the operator, this can help diversify its revenue streams, in addition to the sale of raw electricity. For industrial companies, they can improve their competitiveness and strengthen their commitment to environmental sustainability.
- **Financial sequences (potential costs):** The deployment of energy optimization solutions involves upfront costs related to staff training, technology acquisition, and the design of tailored solutions. However, these costs can be offset by the revenue generated from the provision of these services.
- **Complex implementation (complexity related to the deployment of solutions):** this complexity will depend on SONELGAZ's ability to acquire the necessary expertise and develop partnerships with technology providers. Coordinating with industrial companies to understand their specific needs and tailor solutions accordingly can also present challenges.
- **Time Objectives (Results Deadline):** The results may depend on the nature of the projects, the maturity of the technologies implemented. However, industrial companies could start to see measurable improvements in their energy efficiency within 6 to 12 months of the project coming to fruition.
- **Success Requirements:** Key success factors include strong technical expertise, a deep understanding of the needs of industrial companies, customized and scalable solutions, and transparent communication of economic and environmental benefits to customers.
- **Insightful Expertise (Expert Perspectives):** According to experts in the field (IRENA, 2021), diversification into energy efficiency services can be a logical step for incumbent electricity operators as the energy sector moves towards a more sustainable and solution-oriented approach.

- **Realistic rendering (Translate a perspective):** The development of a diversification strategy into a new sector of activity is an essential process for the SONELGAZ company, in search of growth and resilience. This approach requires a precise diagnosis, the definition of solid reasons that justify this diversification, a careful study of the target market, a detailed strategic plan, proactive risk management, the identification of the necessary resources and skills, realistic financial planning, and finally, an evaluation. This credible and well-structured presentation will help persuade stakeholders of the feasibility and potential for success of this new strategic direction.

Indeed, today, the strategic diversification towards energy efficiency services for industrial companies represents a significant opportunity for the incumbent electricity operator. While this involves implications, costs and complexity, the potential positive impacts, measurable timelines for results and well-identified success factors make it a serious consideration for adapt to the changing requirements of the energy market and industrial players.

IV -Conclusion:

The strategic alignment of the Algerian energy sector with global challenges, with its share of environmental, economic and social challenges, is forcing incumbent electricity operators such as SONELGAZ to rethink their business model. This reflection leads them to consider diversification towards industrial energy efficiency services as a strategic response to the imperatives of performance, sustainability and competitiveness.

To succeed in this transition, several key dimensions must be taken into account, ranging from technological innovation to action-commitment to collective well-being, including openness to competition and participatory governance. This transformation towards more sustainable and diversified economic models is essential to ensure the long-term relevance of SONELGAZ and to meet the country's energy needs.

Integrating energy efficiency principles into the design and management of industrial projects offers significant benefits, including diversifying revenue streams, optimizing customer experience and operational profitability, and positive environmental impacts. In addition, it can help boost the national economy, strengthen energy security, and improve public finances.

Strategic collaboration with partners such as GE could be a key factor in the success of this diversification, allowing SONELGAZ to acquire the necessary expertise and develop innovative products and services that meet the challenges of industrial customers.

Finally, this shift towards energy efficiency services represents a major opportunity for SONELGAZ and its stakeholders, but it requires careful planning, wise investments and a clear and sustainable direction to create value and contribute to Algeria's sustainable energy future.

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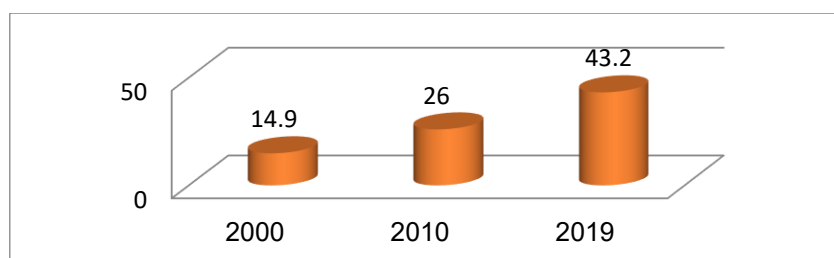
References:

- (IEA), A. I. (2020). *Energy efficiency indicators: fundamental principles of statistics*. Paris.
- (OUCH), A. I. (2020). *Energy efficiency indicators: fundamental principles of statistics*. Paris.
- (IRENA), L. i. (2021). *Outlook for Global Energy Transitions: Pathway to the 1.5°C target*. Abu Dhabi: IRENA.
- (UNDP), B. d. (2019). *Algeria Voluntary National Report 2019: Progress in the implementation of the SDGs*. Algiers. Algiers: United Nations Development Programme Office in Algeria.
- Abecassis, C. (1997). Transaction costs: state of the theory. (CNRS-Editions, Ed.) *Networks. Communication-Technology-Society*, pp. 9-19.
- Afnor. (2023, December 23). *AFNOR*. Retrieved from energy: www.afnor.org/energie/faq/c'est-quoi-la-norme-iso-50001/
- International Energy Agency (IEA). (2020). *Energy Efficiency Indicators: Fundamental Principles of Statistics*. Paris.
- International Energy Agency (IEA). (2020). *Energy Efficiency Indicators: Fundamental Principles of Statistics*. Paris.
- Babaroux , P. (2014). Disruptive innovation of an ecosystem: journeys to the origins of the Internet. *Journal of Industrial Economics*, 2(146), pp. 27-59.
- Boussoumah, M. (1989). The notion of public company in Algerian law. *Revue Algérienne*(1), p. 9.
- Brahimi, M. (1989). Some questions about the reform of the public company. *Revue Algérienne*(1), p. 89.
- Chabry, L., Gillet-Goinard, F., & Jourdan, R. (2020). *the customer experience toolbox*. Paris: Dunod.
- Christensen, C. (2021). *The innovator's dilemma: when new technologies are the cause of the failure of large companies*. Paris: Eyrolles bookstore.
- Clarkson, M. (1995, janvier). A stakeholder framework for analyzing and evaluating corporate social performance. *the academy of management review*, 20(1), 92-117.
- Delion, A. (1977). The Structures of Public Enterprises. *R.F.A.P*(4), p. 7.
- ENGIE. (2023, November 13). *ENGIE, at the service of the energy efficiency of companies and local authorities*. Retrieved from www.engie.fr: <https://www.engie.fr/services-energie/>
- Grandvar, S., & Sopamot, R. (2006). *Developing the company: the theory of resources and skills in perspective*. Paris: Vuibert.
- IRENA. (2021). *Outlook for Global Energy Transitions: Pathway to the 1.5°C Goal*. Abu Dhabi: IRENA.
- Le Masne, P. (2007). Public services. Economic approaches and social issues. *Coll. Didact économie* (p. 149). France: Presses Universitaires de Renne.
- Ministry of Energy and Mines. (2023, September 23). *new, renewable energy and energy management*. Retrieved from energy.gov.dz: <https://www.energy.gov.dz/?rubrique=energies-nouvelles-renouvelables-et-maitrise-de-lrenergie>
- Ministry of Industry and Mines. (2022). *National Energy Balance 2021*. Algiers: Ministry of Industry and Mines.
- Ministry of Industry and Mines. (2022). *National Energy Balance 2021*. Algiers: Ministry of Industry and Mines.
- Morin, P. (2002). Towards a realistic evolutionary theory of strategic alliances. *Revue Française de Gestion*, 3(139), pp. 49-71.
- Mouangue-smith, A. (2022). Public enterprises in the logic of change towards market-oriented management. *International Journal of Financial Studies, Economists ANF Management*, 1(2), 23-50.
- Mullenbach, A. (2007). The contribution of stakeholder theory to the modernization of corporate social responsibility. *La Revue des sciences de gestion; Direction et gestion*, 1(223), pp. 109-120.

- Peterson, F., & Fisher, A. (1977, October-December). The Economics of Natural Resources. *L'actualité économique*, 53(4), pp. 510-558.
- Porter, M. (2023). *Competitive advantage: how to get ahead of your competitors and maintain your lead*. Paris: Dunod.
- United Nations Development Programme. (2019). *Algerian Voluntary National Report 2019*. Algiers: UNDP.
- United Nations Development Programme. (2019). *Algerian Voluntary National Report 2019*. Algiers: UNDP.
- United Nations Development Programme. (2019). *Algeria Voluntary National Report 2019: Progress in the implementation of the SDGs*. Algiers. Algiers: United Nations Development Programme Office in Algeria.
- Raquel Ersoy, S., & Terrapon-Pfaff, J. (2021). *Algeria's energy system: Development of a phase model for sustainable transformation*. Algiers: Fridirich Ebert Stifturmes.
- Salah, M. (1991, July-September). The dysfunction of the public economic enterprise in Algeria. *International Journal of Comparative Law*, 43(3), pp. 627-676.
- SONELGAZ. (2023, November 28). *Sonelgaz*. Retrieved from category: <https://www.sonelgaz.dz/fr/category/qui-sommes-nous>
- Zouaimia, R. (1989). The ambivalence of the public enterprise in Algeria. *Revue Algérienne*(1), p. 145.

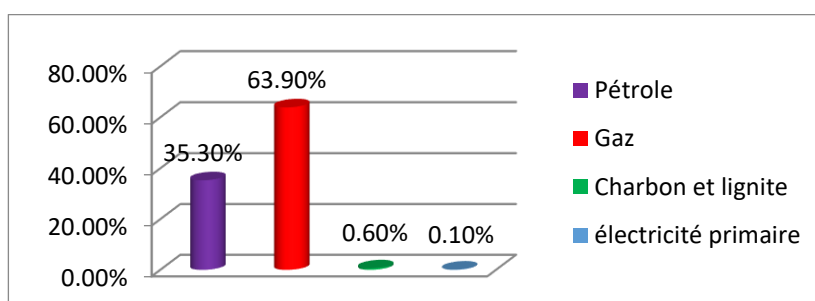
Appendices :

Graph n°01: Trends in Algeria's final energy consumption: 2000-2019 (Unit: million tonnes of oil equivalent)



Source: adapted according to Enerdata, latest data available as of 21/06/2021

Graph 02: Primary energy consumption by source in 2019



Source: adapted according to Enerdata, latest data available as of 21/06/2021

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