

**SIEMENS**

*Ingenuity for life*



# In Algeria. For Algeria.

**Business to Society Report**

---

## Table of content

---

|           |  |
|-----------|--|
| <b>3</b>  | <b>Siemens in Algeria:<br/>an engagement, a responsibility!</b>              |
| <b>5</b>  | <b>Why Business to Society</b>   |
| <b>7</b>  | <b>Business to Society in Algeria</b>  |
| <b>8</b>  | <b>Algeria's ambitions</b>   |
| <b>10</b> | <b>Our contribution to the social and economic<br/>prosperity of Algeria</b> |
| <b>13</b> | <b>Stimulating the economy</b>   |
| <b>21</b> | <b>Stimulating jobs and skills</b>   |
| <b>29</b> | <b>Supporting environmental protection</b>                                   |
| <b>35</b> | <b>Quality of life, health and integrity</b>                                 |
| <b>41</b> | <b>Productivity and innovation</b>   |
| <b>47</b> | <b>Transformation of society</b>   |

---

**Published by Siemens Spa**

Address:

Lotissement El Kadous, lot n°10, Moutchatchou  
Haut site d'Hydra, Hydra  
Alger - Algeria

Website: [www.siemens.dz](http://www.siemens.dz)

Printed in Algeria

Illustrations: ©Siemens 2017

Disclaimer:

This report may not be reproduced or used,  
in full or in part, without prior authorisation.

© Siemens 2017. All rights reserved.



# Siemens in Algeria: an engagement, a responsibility!

Siemens has been present in Algeria for 55 years and since our start we have always done more than just carrying out economic activities. Through our innovative solutions and services, we have extensively contributed to the sustainable development of the local infrastructures. From the installation in 1857 of the first telegraphic cable linking Annaba (North Africa) to Cagliari (Italy), in the presence of Werner Von Siemens, to the creation of the Siemens Algeria company on 20<sup>th</sup> August 1962, Siemens has always showed a keen interest in this country. As demonstrated by the many projects developed after independence

But are winning and implementing contracts the only motivation for a company? We live in a world where companies are clearly looking to grow, to increase their productivity and to acquire new sources of revenue. However they also need to consider the impact they have on societies and environments in which they function.

This country has enormous potential with young people bubbling over with ideas in a multicultural environment that is omnipresent. We at Siemens will continue our ambition to be part of this society and we are driven to leave our mark on it.

At Siemens Algeria we firmly believe that it is impossible to lay the foundations of a sustainable business without taking part in the life of the community. As a company, our responsibility to society and the environment in which we work is far more important than any other project. This is why, based on our experience and our know-how, we decided to publish this

report, that we call "Business to Society Algeria".

It talks about our country, but from a business point of view. The aim is not to present our achievements, but to ask important questions such as: what is our added value in Algeria? How do our activities create value for the Algerian society? And what exactly do these values need to be? In this report, we have quite simply measured our impact on society and our participation in the development and growth of our country.

For the very first time in Algeria, Siemens illustrates its contribution to employability, training, health, etc. through figures and facts. I am particularly proud of the jobs we have created, of the training we give in the SITRAIN training center, of our Digital Grid Engineering Center, which serves Western Europe and French-speaking Africa, of the successful partnership between Siemens and the SNTF (ESTEL), and of the construction of the first metro line in Algiers! We have been able to show what is important for the Algerian society and we will continue to do so through the new challenges that wait ahead of us.

To conclude, I hope that you will find this report as interesting as I do, showing that over our 55 years of presence here, "we say what we do and we do what we say".

Siemens in Algeria, for Algeria!



Farouk Benabdoun  
CEO Siemens Algeria

وتحيا الجزائر

*“Siemens is able to recognize potential wherever it is!”*

Farouk Benabdoun, CEO Siemens Algeria and Tunisia

# Why Business to Society?

At Siemens, we like to understand our true value. As an international company, we are driven by the desire to make a real difference in the countries in which we work.

We measure the economic growth we create in a country through our products, our services and the employees who work in our offices. But, for Siemens, “making a difference” goes far beyond these financial indicators. We aim to evaluate how we can help improve the wellbeing and prosperity of a society as a whole. Business to Society consists in spotlighting what Siemens brings to society.

## Measuring our impact

Business to Society is a new and different way of placing things in perspective. Traditionally, we tended to measure our impact primarily from the viewpoint of internal indices, such as the budget we devote to education and research, or the quantity of CO<sub>2</sub> we emit.

But this method did not enable us to precisely identify what difference we made to society. We therefore decided to measure things differently, at a whole new level.

In this Business to Society report for Algeria, we first of all examined a range of data such as the status of the Algerian economy and its future strategic orientation. From the social standpoint, we analyzed the social and health indices, the economic indices and the education indices. We were gradually able to gain a clearer understanding of Algeria’s real concerns.

After this first step, we mapped what Siemens does in Algeria to tackle these developments and meet the country’s goals. By more closely examining the current influence of Siemens in Algeria, we clearly determined the short, medium and long-term future potential.

Finally, all this information was collated. It constitutes the reference framework enabling us to address the important issues for our customers, our suppliers, for the local authorities, for governmental communities and for all the other parties concerned.

Business to Society therefore helps us move away from the traditional financial report. The aim is to explore and optimize the advantages for Algerian society as a whole.

*“With more than 300 water pumping and treatment stations in service, thanks to Siemens industrial equipment, Algerian operators such as Algérienne Des Eaux, la Société des Eaux et de l’Assainissement d’Alger, or the Agence Nationale des Barrages et Transferts, can offer millions of Algerian homes direct access to drinking water”*

**Mehdi Benzerga,**

**Director of the Process Industries & Drives division and the Digital Factory division**

# Business to Society in Algeria

Our research and analysis work has enabled us to identify six fundamental pillars. These pillars or topics constitute the reference framework for measuring our contribution in Algeria.



## The main challenges for Algeria

Algeria is one of the leading exporters of oil. The country is faced with a rapidly changing environment. Falling oil prices since 2014 have had negative effects: falling economic growth plus an increase in budget and trade deficits. Faced with the rising problems of unemployment and the fragility of the financial sector, the government is effecting considerable adjustments in all key areas: tax-related, financial and structural.

Algeria however, has one major advantage, it entered this troubled period from a position of strength, as it had built up considerable financial reserves during the years when oil prices were more favorable. This enabled it to absorb the shock caused by the fall in oil prices, to gradually implement its reforms and to revamp its growth model.

In response to this new reality, Algerian political leaders have already adopted positions and taken measures to achieve substantial progress in diversifying the economy. Their main reforms encompass improving the business climate, opening up the economy with a view to intensifying trade and investment, improved access to financing and the development of financial markets and, finally, strengthening governance, competition and transparency.

Improved social and economic welfare in Algeria will depend on two key areas: the development of high-level skills on the one hand and tailoring them to the demands of the economic sector, on the other. In this respect, Siemens Algeria is playing a significant role. Its close collaboration with the government, universities, the Advanced Technologies Development Center (CDTA) is helping to optimize the necessary transfer of know-how, both for companies and for job-seekers on the employment market.

# Algeria's ambitions



## Stimulating the economy

Owing to its size and his high level of GDP, Algeria is clearly a major player.

The country's financial situation is sound and its level of debt very low. However, the downturn in oil prices has had negative impacts: a stricter budget policy, falling confidence in the private sector and restrictions on liquidity in the banking system. Major adjustments are necessary in all the main areas: budgetary, financial and structural.

In terms of exports, oil and gas account for just over 98% of total revenues<sup>1</sup>. Two factors – pressure on oil prices and the promising potential of shale gas in the United States – are having a negative effect on exports of Algerian oil and gas. Faced with this energy crisis, the government has committed to opening up trade and encouraging foreign investment. At the end of 2013, Algeria reinforced its focus on the private sector, SMEs in particular, which play a major role in economic development and job creation. These SMEs are mainly active in the services, building, construction and hydraulic sectors.



## Stimulating jobs and skills

The main employer is the government. It represents 32% of manpower in the country<sup>2</sup>. Despite several years of sustained growth, the country's unemployment rate remains high by comparison with the other emerging economies.

It is mainly the young that are affected, with a rate of close to 30%<sup>3</sup>. Finding a job outside the public sector and public industries is a challenge for many Algerians.

In the field of education, the country stands out by a high level of access to basic and higher education. The teaching and vocational training sector (EFTP) comprises a vast network of facilities and training centers. The training and diplomas proposed cover a wide range of specializations, with various types and levels of qualification.

More than ever, the education sector is required to provide high-quality training. With regard to this training, the government has decided to give priority to agriculture, tourism and industry, as alternatives to hydrocarbons. The vocational training centers of excellence, located in various different wilayas around the country, are adapting to the needs of the national economy, in particular in the field of agriculture. New centers have been opened up in the wilayas of Mascara, Oran, Khenchela, Biskra, Aïn Defla and El-Oued. They are an integral part of the country's new economic policy: diversify the national economy and stimulate priority sectors.



## Supporting environmental protection

Algeria has ratified the COP21 Climate Agreement; by 2030, the country envisages a 7% reduction in its emissions of CO<sub>2</sub><sup>4</sup>. This figure could reach 22% if Algeria receives adequate technological and financial support along with investments from its development partners.

The government has announced long-term energy programs. They include a renewable energies strategy with investment of up to 10.977 billion DZD (92 billion EUR) by 2030. This ambitious project should enable one third of domestic energy to be produced from renewable sources. Despite the efforts made to free its economy from dependence on hydrocarbons and an unstable financial context caused by the collapse of the price of oil, Algeria will continue to meet its commitments and take part in realizing the goals of the COP21.

Algeria has drawn up its Renewable Energy and Energy Efficiency Development Plan (2015-2030)<sup>4</sup>. The last update of this plan provides for the installation of new projects with a capacity of 4,500 MW up until 2020 and an overall total of 22,000 MW up until 2030. The total capacity is divided among six types of energy: solar photovoltaic (13,575 MW), wind (5,010 MW), solar thermal (2,000 MW), biomass (1,000 MW), cogeneration (400 MW) and geothermal (15 MW). If this capacity target is met, the share of renewable energies in total electricity production in Algeria will amount to 27%.

<sup>1</sup>: OECD

<sup>2</sup>: IMF

<sup>3</sup>: Algeria Press Service

<sup>4</sup>: Algerian Ministry of Energy





## Quality of life, health and integrity

In terms of human development, Algeria tops the rankings for the North African continent and life expectancy (at birth) now stands at 74.8 years<sup>5</sup>.

Algeria today has a well-established network of hospitals (including university hospitals), clinics, health centers and small health units and dispensaries. Even if the equipment is not always the latest generation, staffing levels are high and the country has one of the best health systems in Africa.

The Algerian water distribution network, which covers more than 58,000 kilometers<sup>6</sup>, has a high capacity and can carry more than three billion cubic meters of water per year.

Algeria has numerous large dams (70) and increasing storage capacity is a key factor in the country's water management strategy.

Despite its 70 dams, Algeria is in 14<sup>th</sup> place among the countries poorest in water. It was in this context that the Algerian Ministry of Water Resources implemented a strategy to mobilize and guarantee water resources (groundwater, desalination and surface water). Redistribution and increased storage and desalination capacity will help optimize existing resources. The aim is to achieve sustainable and integrated water management.

<sup>5</sup>: World Health Organization (WHO)

<sup>6</sup>: Algerian Ministry of Water Resources



## Productivity and innovation

The World Intellectual Property Organization (WIPO) ranked Algeria 72<sup>nd</sup> in the world out of a total of 128 countries, in terms of innovation. In Algeria, R&D spending represents less than 1% of GDP – a relatively low figure which can be primarily explained by the low level of private sector investment in research.

Innovation in the country is based on the activity of the multinationals, local SMEs, universities and local research institutes. Of the inventions patented by the INAPI<sup>7</sup>, 90% come from multinational companies, with the remaining 10% from domestic companies and researchers.

Digital technology is placed at the heart of the strategy to develop and diversify Algeria's economy. With nearly 60% of its population under 30 years old and a high level of penetration of digital devices, it has the resources and potential to become a land of opportunity in the digital economy. This is a crucial advantage on the eve of a new industrial revolution based on information and communication technologies.

<sup>7</sup>: Algerian National Industrial Property Institute (INAPI)



## Transformation of society

Controlling urban growth is one of the main challenges for Algeria. The effects of rapid urban spread are over-population and concentration of the population in the cities in the north. The new towns (Sidi Abdellah, Bouinan, Boughzoul, Hassi-Messaoud and El Ménéea) are the perfect expression of the new sustainable city.

The extensive urban development and increased standard of living among the population have led to a spectacular rise in urban mobility and the volume of journeys made. Numerous Algerian towns are expanding and some are in the process of becoming cities. The private car has become the most widely used solution for dealing with the problem of urban mobility.

Transport is also one of the government's priorities. Major expansion work is currently under way as part of the vast Algerian public investment program. Emphasis is today being placed on the upgrading, refurbishment and expansion of the rail network, which is heavily concentrated along the country's northern coastline, to help relieve congestion in the urban areas. In recent years, the country has also succeeded in improving its performance in the fields of customs, logistical follow-up and delivery punctuality. According to the latest Logistics Performance Index (LPI), Algeria is in 125<sup>th</sup> place in the general rankings for 2012 while it was in 130<sup>th</sup> place in 2010 and 140<sup>th</sup> in 2007.

# Our contribution to the social and economic prosperity of Algeria



## Stimulating the economy

Siemens operations as a whole made a contribution of 28.1 billion DZD (238.5 million EUR) to Algerian GDP for the 2015 financial year, or 0.2% of Algeria's GDP in 2015.\*

Added value is calculated at about 1.8 billion DZD (15.3 million EUR), for Siemens operations in Algeria, in terms of wages and salaries paid to the staff based in Algeria.\*

An indirect contribution of about 9 billion DZD (76.4 million EUR) results from worldwide purchases by Siemens of intermediate products and services, partly manufactured or supplied by Algerian companies (indirect effects of the supply chain).\*

The wages paid to the Siemens staff in Algeria and the companies involved in the Siemens supply chain finance private consumption. The value created in Algeria makes a 6 billion DZD (50.9 million EUR) contribution to Algerian GDP (induced effects and supply chain).\*

## Stimulating jobs and skills

More than 13,000 jobs in Algeria are linked to Siemens' global activities. For 2015, this figure is equivalent to 0.1% of the active population in the economic sector in Algeria.\*

471 direct jobs in 2015.\*

For each Siemens job in Algeria there are more than six jobs linked to purchasing by Siemens and to private spending financed by the salaries received.\*

Taking account of the effects of derived products and services on the employment market, 5,800 jobs could be linked to Siemens activity in Algeria (indirect effects).\*

3,700 further jobs can be attributed to the multiplying effect created by private spending of the wages received by employees of companies which are customers of Siemens.\*

## Supporting environmental protection

More than 3,400,000 families will have access to electricity thanks to Siemens turbines (by 2020).

Siemens aims to become the world's first major industrial group to achieve zero carbon footprint, by 2030.

The Hassi R'Mel hybrid solar power plant is one of the most innovative in the world; Siemens provides preventive and corrective maintenance services.

Siemens equips several electrical power plants in Algeria contributing 18% of the total installed capacity by 2020.

\*PwC report 2017

Unless otherwise specified, 1 euro = 117.8 DZD



## Quality of life, health and integrity

More than 8 million people have access to Siemens CT scanners in Algeria.

Siemens Healthineers products are essential for diagnosing and treating more than 90 million people around the world, every year.

More than 1.08 billion people in the developing countries have access to Siemens imaging technologies.

In 2015, Siemens devoted more than 117.7 billion DZD (1 billion EUR) to research and development (R&D) in the medical sector worldwide.

With 300 projects under its belt, Siemens has been one of the leading water industry players in Algeria since 1978.



## Productivity and innovation

Siemens plays an important role in the digital field, built on more than 20 years of experience.

To stimulate innovation, Siemens launched the regional engineering centres (REC) in 2014; one of the first was set up in Algeria.

11 billion m<sup>3</sup> of gas are routed every year along the GPDF gas pipeline, fully equipped with a Siemens control and data acquisition system.

With its 17,500 IT engineers, Siemens is one of the world's leading suppliers of software solutions.

60% of oil production is routed via Siemens pumping stations.

More than 1,474 disclosures of invention were registered, including more than 700 patent applications (2015).



## Transformation of society

More than 75,000 passengers per day, or a total of 28,000,000 passengers per year, are carried by the Algiers metro, for which Siemens – as consortium leader – delivered the complete rail system.

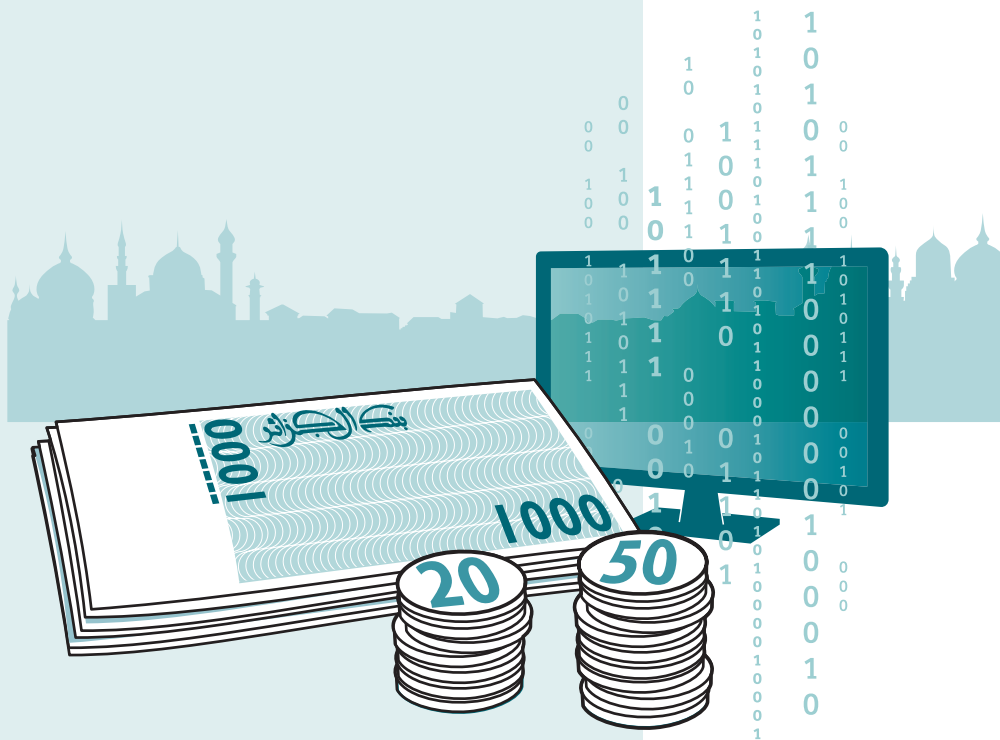
More than 70 technologies are deployed in the Siemens City Performance Tool (CyPT), a complete, interactive tool designed to help cities achieve their environmental objectives.

More than 50% of Algeria's cement production, or more than 8 million tonnes per year, uses Siemens electrical and automation technology equipment.

The capacity of the Biskra cement works, for which Siemens delivered the air insulated substations (AIS), is 2.7 million tonnes per year.

*“Having decided to set up its third regional engineering center in Algeria, dedicated to smart electricity grid and energy automation solutions and today serving Africa and Europe, Siemens has been investing in the transfer of know-how since 2014. Since then, 13 Algerian engineers have benefited from a long-duration training program abroad”*

Amine Rabehi,  
Director Energy Management division



---

# Stimulating the economy

---

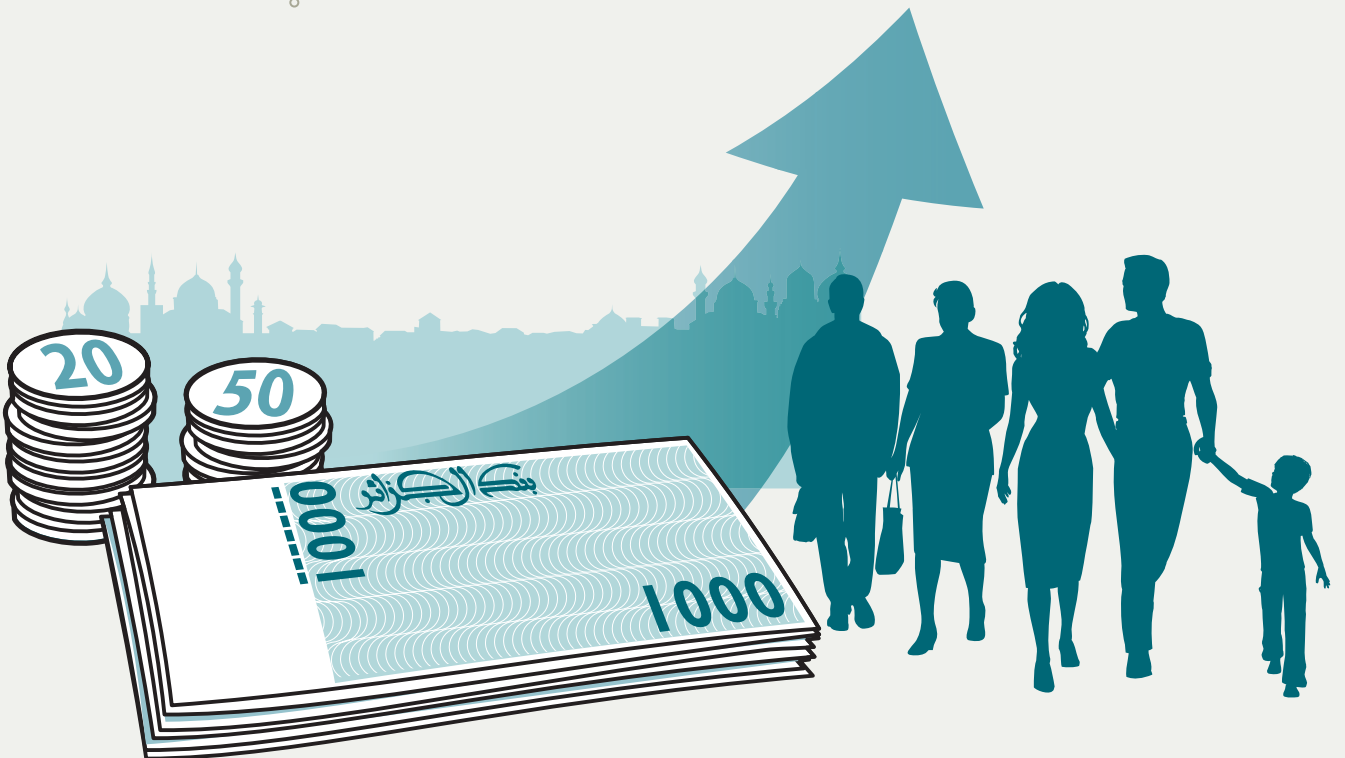


# 1.8 billion DZD

Salaries and wages paid to staff based in Algeria

# 28.1 billion DZD

Contribution of Siemens' worldwide operations to Algerian GDP (2015)



# Most of the large companies started out as SMEs

Algeria will be increasingly focusing its economy on the private sector

The Algerian economy is dominated by the State – a legacy of the development model that followed the country's independence. In 2013 however, things began to change and the country started to focus its economy more on the private sector, SMEs in particular, owing to their attractiveness: they play a major role in economic development and provide numerous jobs. Furthermore, SMEs make a significant contribution to non-hydrocarbon exports, to skills development, to the assimilation of technologies and to stimulating innovation.

At the end of 2013, the number of SMEs registered in Algeria exceeded 748,000, representing 99% of all companies in the country. However, the public sector still dominates the economic landscape.

Of the business sectors in which Algerian SMEs are active, services (transport in particular) comes first with 49%. The other sectors are building, construction and hydraulics (33.85%). The manufacturing sector represents 16.07%, while the share of agriculture is 1.09% and that of energy 0.49%.

## Siemens is committed to supporting Algerian SMEs

The Algerian private sector in general and SMEs in particular are faced with major challenges which affect their development.

In numerous areas, Siemens Algeria is committed to supporting SMEs. More than 70% of its suppliers are actually local SMEs. In 2015, the total volume of group purchases amounted to more than 9 billion DZD (76.4 million EUR).

In addition to its financial support, Siemens Algeria also creates value in local commercial practices.

*In 2015, the total volume of local purchases by the group amounted to more than 9 billion DZD (76.4 million EUR)*

It more specifically set up a dedicated supplier process, thus contributing to SME development.



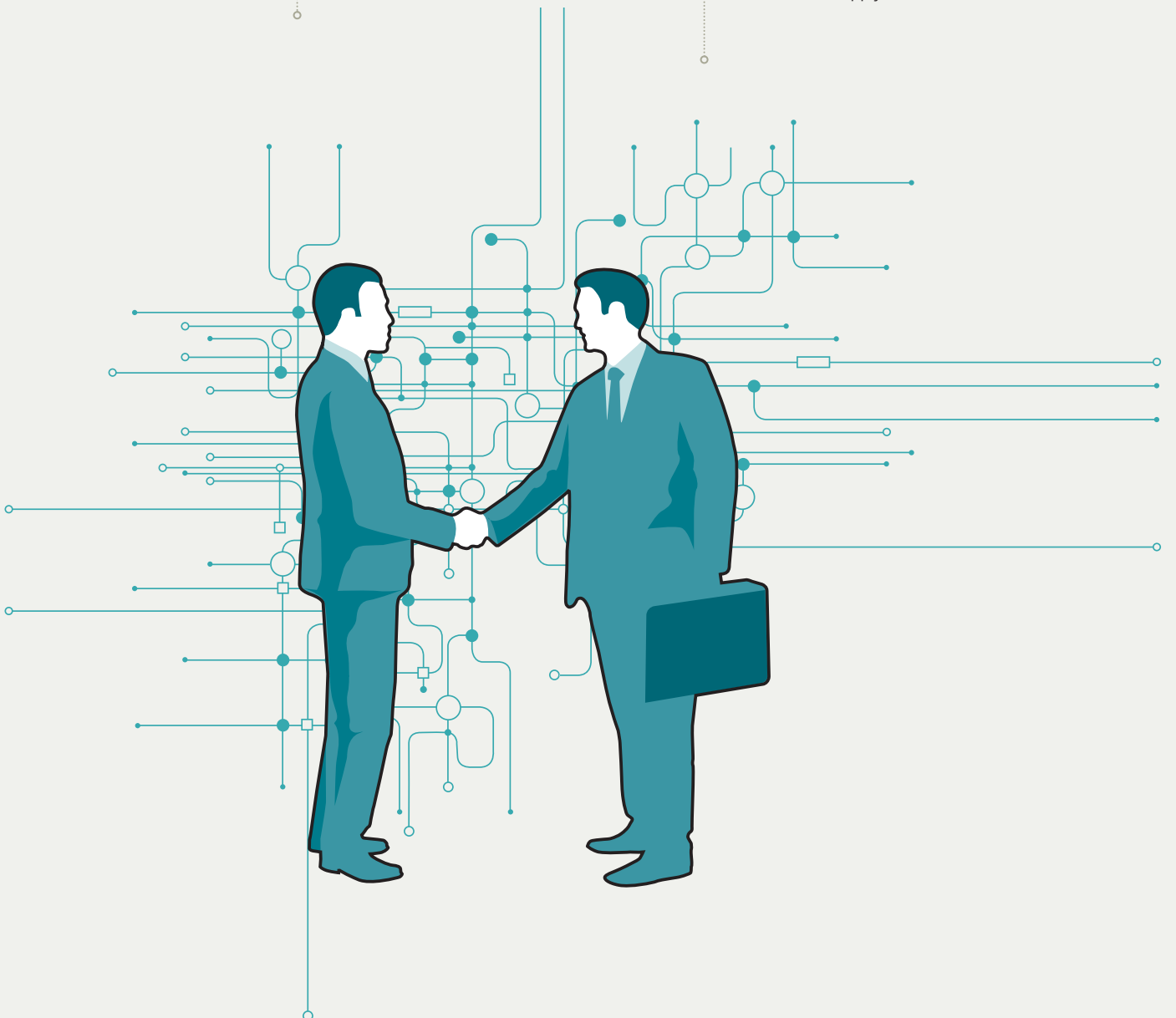


## 9 billion DZD

Value of purchases by Siemens, worldwide, of products and services from Algerian companies (indirect effects)

## 6 billion DZD

in salaries paid to staff of Siemens and companies involved in the supply chain





# For 55 years, Siemens has been contributing to the economic and social wellbeing of Algeria

Owing to its size (2.38 million km<sup>2</sup>), its economic power (GDP of 17,568 billion DZD – 149 billion EUR – in 2016) and its stable growth (3.9% in 2015 and nearly 4% estimated for the coming years), Algeria is clearly a major player on the African continent. The country has the fourth largest economy in Africa and its financial situation is sound, with very low levels of debt.

As a member of OPEC, Algeria enjoys a good level of trade but is extremely dependent on exports of hydrocarbons. Oil and gas account for just over 98% of all export revenues. Fluctuating oil prices, the promising potential of shale gas in the United States and climate change initiatives should have a

negative effect on Algerian oil and gas exports and thus exert pressure on the backbone of the country's economy.

Algeria is implementing a new "economic growth model", built around reform of the tax system and aiming to boost revenues and reduce dependence on energy exports. Major measures are currently being drafted with a view to improving the business climate and attracting more foreign investors. It is essential for Algeria to identify new destinations for its hydrocarbons exports – probably in the emerging economies of Asia, Africa and South America – and to diversify its economy.



Another goal of this new economic model is to stimulate investment in high value added sectors such as the agri-food industry, renewable energies, services, the digital economy, industry, mining and downstream activities in the hydrocarbons sector.

#### Siemens in Algeria: more than 50 years of stable relations

Siemens has been active in Algeria since 1962, when *Siemens SARL Algérie* was founded, the first multinational to be entered on the companies registry in the country. However, already in 1857, the group's founder, Werner Von Siemens, was taking part in installing the first deep-water telegraph cable between Europe and Africa, more precisely between Cagliari and Annaba.

On 1<sup>st</sup> October 2002, with the creation of the regional company Siemens Algeria, via an investment of more than 300 million DZD, Siemens sent out a strong signal. This further step clearly indicates the development ambitions of Siemens in Algeria and its confidence in the future of the country.

Siemens adds a gross value of 28.1 billion DZD, or 0.2% of the Algerian GDP.

Siemens employs 471 people. Some 99% of the Algerian personnel have acquired skills and been trained at Siemens Algeria. This represents a five-year investment of 108.2 million DZD (915,000 EUR).

Rail transport, medical imaging, production and distribution of electricity, oil and gas: the business sectors of Siemens Algeria are numerous and diversified.

#### Siemens has the means to cover virtually all links in the economic chain

In the field of transports, the company took part in building the first metro line between *La Grande Poste* and Hai El Badr, in a consortium with VINCI and CAF. Siemens also manages all the signaling for the Algerian rail network via the ESTEL partnership with the SNTF.

In the field of industry, Siemens supplies products and solutions for process control and automation of manufacturing processes, as well as for smart management of production facilities.

In the field of energy, Siemens is active in both production and transformation (from high to medium and low voltages for distribution to the end-user).

Siemens has been contributing to the economic and social wellbeing of Algeria for 55 years and is committed to continuing to do so in the future.

*Another objective of this new economic model is to stimulate investment in sectors with high added value*

# For Siemens in Africa, local partnerships are crucial

Over the years, Siemens Algeria has forged partnerships with the leading names in the economic sector, in order to cover the Algerian market and promote the growth of the SMEs contributing to the national balance of trade. We are also engaged in transferring skills to our partners in the fields of electrification, automation and digitization.

The Siemens partnership program is built around “certification by a Solution Partner” in order to meet the strict criteria that govern the performance of our projects. This includes one or two annual certification workshops, the Siemens industrial training program intended for the partners (SILPP) and on-line training sessions. To date, more than 10 companies have been accepted in this program, in the fields of automation and drive systems.

Our technological partners specialize in vertical fields and markets that are important for Siemens. We also have five building technology partners trained to enhance their expertise and be able to submit bids meeting the security and fire safety demands of the customers.

In our partnership programs, we strive to use sustainable, eco-energy and economically balanced solutions, at all times.



*More than 15 local partners are qualified to market Siemens products directly in the fields of automation, drive systems and safety technologies*

*“Wherever it works, Siemens has always based its customer relations on service and transfer of know-how, which involves training, ranging from PLCs to variable speed drives and process control systems. Our State-certified SITRAIN center enabled us to train more than 500 people in 2016”*

Sofiane Galou, Director of the SITRAIN Algeria training center



---

# Stimulating jobs and skills

---



# 471 et 5,800

direct and indirect jobs in 2015

# 13,000

Algerian jobs linked to Siemens global activities

# 3,700

jobs due to the multiplying effect of private spending by Siemens employees





# Tailoring skills to the needs of the market

To create more jobs and more growth, Algeria is aware of the fact that it will need to adapt its existing growth model towards a more diversified one, run by the private sector. A transformation such as this requires an ambitious program of structural reforms.

The way the labor market works is undergoing change and closer links between the education system and the private sector are essential to guaranteeing that the skills acquired by the persons available on the labor market are more in step with the skills looked for by the employers.

The Algerian government has also stepped up its efforts to improve the quality and effectiveness of its vocational training system (EFP).

## **The vocational training policy is moving forwards**

Public spending devoted to national education represents 7.34% of Algerian GDP. The spending allocated to vocational training for its part represents 0.76% of GDP. Thanks to the efforts made in recent decades, the education and training system has enjoyed considerable development.

A large number of students (38%) leave school after the mandatory secondary education. However, vocational teaching and training represent an alternative.

Most of the vocational teaching and training programs are run free of charge by the State

*In Algeria, Siemens represents 471 direct jobs, 7,500 indirect jobs and 5,800 induced jobs (2015) with more than 13,000 jobs linked to Siemens' activities worldwide*

In 2008, Algeria passed a law to reform its vocational training system. A total of 12 new vocational teaching institutes were thus set up in order to cover the main employment sectors (industry, agriculture, agri-food, hotels and tourism, construction, management and accounting, sales). This vocational teaching is organized in close cooperation with businesses.

## **Siemens plays an active role in training young people**

In Algeria, Siemens represents 471 direct jobs, 7,500 indirect jobs and 5,800 induced jobs (2015) with more than 13,000 jobs linked to Siemens' activities worldwide.

Siemens fully intends to continue its policy of engagement to employ several thousand people and attract the most talented staff. 99% of Siemens Algeria employees were trained in Algeria.

Over the past five years, Siemens Algeria has devoted a budget of 108.2 million DZD (915,000 EUR) to training its personnel.

In this budget, 45.4 million DZD are invested in local training courses. More than 1,000 were organized on behalf of 344 people.

Over the past five years, the international training budget, mainly in technical areas, reached 62.7 million DZD.

Siemens Algeria plays an active role in training the young and integrating them into the world of work. In 2008, the company set up an Automation Master's degree, in partnership with the Algerian Ministry of

Higher Education and Scientific research and the Houari Boumediene University of Science and Technology (USTHB).

Under the terms of this collaboration, Siemens Algeria provides technical support for certain teaching modules. It prepares the students for the world of work by including modules not programmed by the University and taught by Siemens staff: project management or compliance with commercial rules of best practice.

This collaboration has proven to be a considerable success: in 2016, the Siemens Algeria Master's had more than 180 graduates. Of them,

95% found a job within six months and 5% moved into Research & Development.

This success encouraged Siemens to expand this program to other Algerian universities. A new partnership has been reached with the école Polytechnique in Oran and Siemens is in discussions with other schools and universities.

#### **Training dedicated to the Algerian workforce**

Driven by this same desire to train the young, Siemens opened its SITRAIN training center in 2013 to offer vocational training devoted to the industrial professions.

*The SITRAIN Algeria instructors comply with strict criteria in terms of technical skills and teaching expertise*





The modules proposed are based on a process of continuous improvement and on a wealth of international experience. The hardware and software made available are regularly upgraded so that the trainees benefit from the most recent, high-performance solutions.

## *Over the past five years, Siemens Algeria has devoted a budget of 108.2 million DZD (915,000 EUR) to train its personnel*

They themselves then become more efficient, representing a real gain in productivity for the companies.



The SITRAIN center offers training covering the full range of Siemens products (SIMATIC S7 PLCs, variable speed drives, SIMATIC NET industrial communication, SIMATIC HMI human-machine interfaces, PCS7 process control system, as well as many other specific training courses).

The center is approved by the Directorate for vocational teaching and training and today occupies a complete floor at the Siemens Algeria headquarters. It offers several training classrooms, all equipped with a screen and video projector. Each workstation has the technical and teaching equipment necessary for training: programming consoles, teaching benches or interactive mock-ups simulating the industrial process.

The SITRAIN Algeria instructors are trained by Siemens and meet strict criteria in terms of technical skills and teaching expertise.

It is also essential to subscribe to the quality system set up by Siemens SITRAIN Algeria and to meet the objectives of each training course (content, theory / practical, timing, etc.). All the instructors have already been able to put their knowledge into practice during the courses they have given to customers who purchased Siemens PLCs.

Siemens Algeria has also given technical training to more than 2,000 people working for various customers and suppliers, since 2013.

The training center now also covers the energy portfolio and is equipped with the latest generation of teaching systems for digital networks and telecommunication systems.

## *In 2016, more than 180 students graduated with a Siemens Master's diploma organized in collaboration with USTHB*



# Creating jobs and decent living standards

One of the most pressing national priorities in Algeria is job creation. The public sector is the country's leading employer. In 2015, with the collapse of oil prices (more than half its value), the government reacted by freezing public sector hirings.

Outside the public sector and the public industries, numerous Algerians are struggling to find work. In 2013, the total employment rate was 39%.

Considerable disparities can be observed according to age, gender and level of education. The groups most severely affected by unemployment are the young and women. The unemployment rate for the young stood at 24.8% in 2013. Many of them have turned to "informal" jobs, such as street trading.

However, in recent years, the positive experience of Algeria in terms of the creation of decent jobs (outside the public sector) and the fight against unemployment – in particular for the young – must be underlined.

In the field of employment, the Government's action plan is focused on six points: support investments in economic sectors creating jobs, promote qualified trainers, encourage companies to hire, stimulate youth employment, reinforce the various professional integration plans and modernize management of the labor market.

## Siemens Algeria is creating highly qualified jobs

For 55 years, Siemens has been making a significant contribution to the employment rate in Algeria, where it directly occupies 471 people (2015). The company is developing and training highly qualified staff for its activities.

Siemens Algeria hires an average of 32.6 staff per year, 41% of whom are aged between 30 and 39 and 40% aged 45 and over. 23% of the personnel are women.

Siemens Algeria makes another significant contribution by creating indirect jobs. Thanks to local purchases, spending by employees and a technological range that creates added value for the customers, the

## *Siemens develops and trains highly qualified personnel*

company generates indirect jobs for 7,500 persons and induced jobs for a further 5,800. In total, Siemens Algeria provides work for more than 13,000 people, or 0.1% of the total employment rate of the country, according to the 2015 figures.

*By 2013, about 37% of the electricity produced for domestic consumption will come from renewable energies*



---

# Supporting environmental protection

---





# 3,400,000

families will have access to electricity thanks to Siemens turbines (by 2020)

# 60%

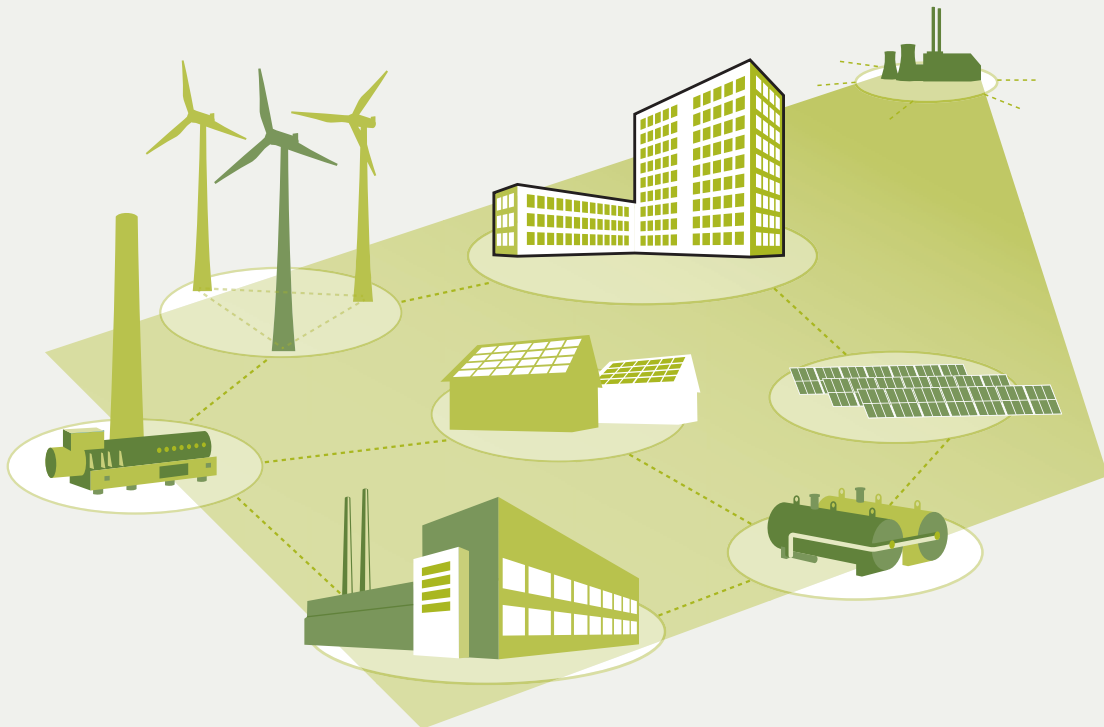
of oil production is transported via Siemens pumping stations

# 18%

of Algeria's total electrical capacity by 2020, owing to electrical power plants equipped by Siemens

# 300

water-related projects carried out by Siemens since 1978





## In 2011, the country created a green dynamic with the launch of its ambitious renewable energies program

The question of climate change is becoming an increasingly urgent one. The extreme use of resources and high living standards have led to a spectacular increase in CO<sub>2</sub> emissions worldwide.

The history of hydrocarbons in Algeria goes back to the time when fossil fuels were discovered in abundance by experts looking for natural resources. Petroleum products at present represent 30% of the country's gross domestic product (GDP), 95% of export revenues and 60% of budget revenues.

Before it joined OPEC in 1969, Algeria had an excellent "CO<sub>2</sub> bulletin". Today, with CO<sub>2</sub> emissions higher than 140,000 kt in 2013 (and this rate is continuing to rise), the country is ranked 38<sup>th</sup>.

Virtually all of Algeria's current energy needs are met by hydrocarbons. The other forms of energy are only called on when natural gas cannot be used. Despite considerable potential in the fields of solar, wind and hydroelectricity, the production of

electricity from renewable sources represents barely 1% of total production.

### An ambitious program to develop renewable energies

Algeria has decided to turn the situation round by creating a true green dynamic. In 2011, it launched an ambitious program to develop renewable energies and promote energy efficiency. This program, revised in 2015, aims to install up to 22,000 MW of electricity production from renewable sources between 2015 and 2030, including 12,000 MW to meet domestic electricity demand and 10,000 MW for export. By 2030, about 37% of electricity produced for domestic consumption will come from renewables.

The Algerian renewable energies program is focused on solar energy, because the potential of the other green energies (wind, biomass, geothermal and hydroelectricity) is relatively low. This does not of course prevent several wind farm projects and experimental projects in the field of biomass and geothermal sources from being set up. The green energies plan is primarily based on





the development and use of inexhaustible sources such as solar energy and its aim is to prepare the Algeria of tomorrow.

**Increased energy capacity in order to become a major player**

Algeria has also initiated a major program to reinforce its energy capacity and is positioning itself to become a major player in electricity production. The aim of this program, run by the public company Sonelgaz, is to double its electricity production capacity, as the country will be needing an additional 20 GW by 2030. The idea is to produce electricity not only for Algeria but also for neighboring markets.

**Siemens' contribution to reducing CO<sub>2</sub> emissions**

Siemens is fundamentally attached to the development of sustainable

energies. The company has made firm commitments to lower its carbon emissions worldwide, reduce its contribution to climate change and help its customers mitigate their environmental impact.

Siemens aims to be the first major industrial group in the world to achieve a zero net carbon footprint by 2030 and intends to halve its CO<sub>2</sub> emissions by 2020. To do this, Siemens will be investing nearly 11.7 billion DZD (100 million EUR) over the coming three years, to bring down the energy footprint of its production sites and its buildings.

Siemens is banking on energy savings of about 2.4 billion DZD (20 million EUR) per year as of 2020. "Limiting our carbon footprint is not only a responsible action, it is

also good company management", declared Joe Kaeser, President and CEO of Siemens AG.

In order to ensure a long-term reduction in its CO<sub>2</sub> emissions, Siemens will be acting in three other areas. Firstly, the group will use distributed energy systems in its production facilities and offices, in order to optimize energy costs. It will systematically use low-emissions vehicles and e-mobility concepts for its global automobile fleet. Thirdly, it will increasingly opt for clean energy sources, emitting little or no CO<sub>2</sub>, such as natural gas or wind power.

In the field of sustainable development, whether production and distribution of gas and oil, maintenance of solar and hybrid power plants or other industrial applica-



## Hassi R'Mel, the first hybrid electricity power plant

tions, Siemens is a reliable partner for Algeria. The aim is to help the country migrate to a more efficient energy generating scheme with lower carbon emissions.

### A major role in low carbon emissions industrialization

Thanks to its particularly efficient combined cycle energy offering, Siemens is one of the world's leading suppliers of environmentally-friendly technologies.

The Siemens environmental portfolio comprises all of its technologies in the fields of energy efficiency and CO<sub>2</sub> reduction. During the 2014 financial year, it generated 3,892 billion DZD (33 billion EUR) in sales, or 46% of the total revenues of Siemens.

Siemens is pleased to play a major role in the low carbon emissions industrialization of Algeria.

### Hassi R'Mel, first hybrid electricity power plant

Estimated at 13.9 TWh per year, the solar potential of Algeria is among the highest in the world. Annual exposure to sunshine is the equivalent of 2,500 kWh/m<sup>2</sup>. The daily solar energy potential varies from 4.66 kWh/m<sup>2</sup> in the North, to 7.26 kWh/m<sup>2</sup> in the South.

The hybrid (combined cycle) solar power plant in Hassi R'Mel started to produce electricity in June 2011. It is one of the very first hybrid power plants in the world, combining an array of parabolic mirrors concentrating 25 MW of solar power over a surface of 180,000 m<sup>2</sup> with a combined cycle gas power plant of 130 MW.

The gas turbine and the steam cycle are supplied with natural gas and the steam turbine receives additional solar generated steam during the daytime.

The Siemens contract comprises preventive and corrective maintenance services for the two SGT-800 gas turbines installed by the group in 2011.

This service contract aims to ensure the long-term reliability, with predictable maintenance costs, of the Hassi R'Mel, power plant, one of the world's most innovative.

### Siemens is also present in the electricity sector, from production to distribution

As leader of the consortium chosen by the Algerian public company Sonelgaz, Siemens also built a

500 MW turnkey electricity power plant, including a maintenance contract.

By 2020, Siemens will also supply solutions and services for gas and steam turbines to several electricity power plants in the country, such as Ain Arnet, Ras Djinet, Biskra and Hassi R'Mel, which will represent 18% of the total installed energy capacity of Algeria.

### Rhourde Nouss: a major gas producing site

Rhourde Nouss is an important gas producing site representing more than 20% of Algeria's gas production: 75 million m<sup>3</sup> per day spread over four processing units.

One of these units is equipped with Siemens turbocompressors. After being commissioned in 2014, its capacity is 10 million m<sup>3</sup> per day.



*“Today, Siemens means Integrity!  
At Siemens Algeria, more than  
50 training and awareness-raising  
sessions have been held since 2012  
for execution of the compliance and  
anti-corruption program being  
implemented group-wide”*

Ines Boushaki, Compliance Director Algeria



---

# Quality of life, health and integrity

---



# 8 million

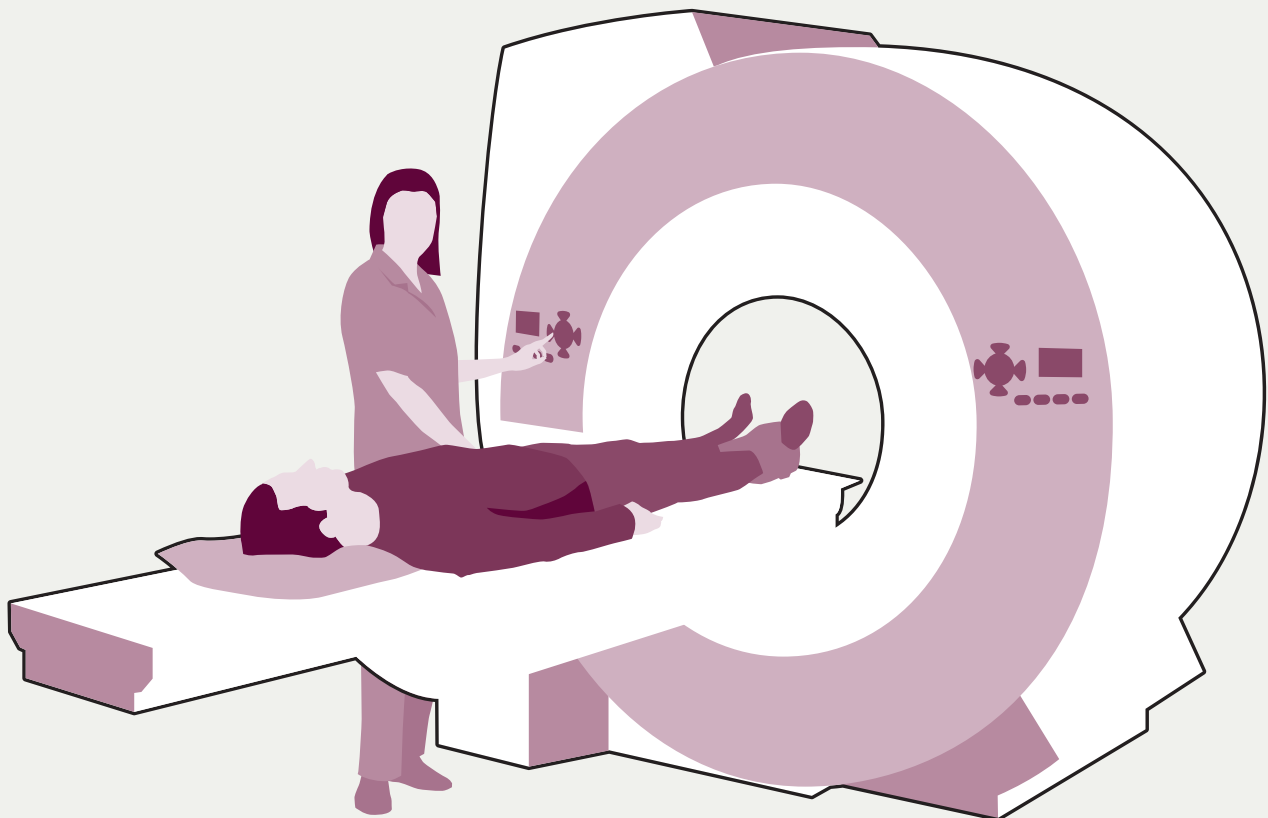
people have access to a Siemens CT scanner in Algeria

# 117.8 billion DZD

devoted by Siemens to R&D in the medical sector worldwide (1 billion EUR) in 2015

# 209,000

patients per hour benefit from care based on Siemens equipment and technology



# In Algeria, the health index has considerably improved

When Algeria gained its independence in 1962, it had barely 300 doctors and no appropriate health system.

In the following decades, considerable progress was made in building up the health sector, with doctors being trained and numerous health facilities being built.

Algeria today has a well-established network of hospitals (including university hospitals), clinics, health centers and small health units and dispensaries. Even if the equipment and drugs are not necessarily the very latest generation, staffing numbers are high and the country has one of the best health systems in Africa.

Almost 98% of the population has access to basic health care and the health indices have improved in recent decades. Free medical care was introduced in the 1970s.

Algeria enjoys one of the highest human development levels in Africa, with life expectancy of 74.8 years (2015). This figure is higher than in the other countries with a similar level of income.

Vaccination coverage exceeds 90%. The country's epidemiological profile is gradually being dominated by "rich country" diseases, such as cardiovascular problems and diabetes. However, the upturn in "poor country" diseases such as cholera and tuberculosis has reminded the authorities that the health system is not yet robust enough. As is the case in many regions of the world, Algeria will also have to deal with rapid population ageing and a simultaneous drop in the birth rate.

In the field of health, even if most targets (established under the United Nations Millennium Development Goals) were reached in 2015, the Algerian health system still suffers from qualitative and institutional insufficiencies. The primary health care facilities are often under-used and use of the various levels of health care is not optimized. The country's health care network requires modernization, new investments and improved organization and administration. Services in the rural areas and regions far from the towns are generally even more under-equipped.

## *Almost 98% of the population has access to basic health care*

### **The right diagnosis can save lives**

Siemens is a leading global engineering company in the health sector. It specializes primarily in medical imaging, laboratory diagnosis and new offerings such as managed services, consulting, IT health services and other technologies in the growing market of therapeutic and molecular diagnoses. Siemens has achieved a number of world firsts in the medical field, such as the X-ray tube, real time ultrasound imaging, dual-source scanner and integrated PET-MR systems.

Siemens Healthineers are helping to fight the deadliest diseases, cancer, cardiovascular diseases and the infectious diseases present in the developing countries. Siemens Healthineers products are essential for diagnosing and treating more than 90 million people around the world, every year.



More than 1.08 billion people in the developing countries have access to Siemens imaging technologies. Every hour, more than 209,000 patients benefit from care based on Siemens equipment and technology.

**Siemens Algeria – at the cutting edge of medical technologies**

In 2016, Siemens Algeria installed and started up a Skyra MRI in the National Imaging Centre.

Although this equipment was acquired under an international contract signed with Siemens AG, it was carried out 100% by the team at Siemens Algeria.

Over and above the fact that this is the first 3 Tesla MRI installed and commissioned in the public sector in Algeria, with a configuration superior to most of the equivalent facilities in Europe, this contract also includes the implementation of a scientific partnership focused on research.

**Siemens contributes to the distribution of water to the Algerian population**

Siemens has also been one of the leading water industry players in Algeria since 1978, with more than 300 projects under its belt (pumping stations, wastewater treatment

plants, etc.) entirely equipped with Siemens electrical and automation systems

*“Siemens is synonymous with quality and rigorousness. We therefore intend to use our experience and our robust position on the Algerian market to become a leading and trusted partner for the Health Sector.”*

**Anne Marie Mendes,  
Director of the Healthineers Division**

# Algeria has progressed in the “Doing Business” rankings

In recent years, the government has adopted reforms and laws (such as the Investment Code), to diversify the local economy, reduce dependence on hydrocarbons and on imports and stimulate the most promising sectors in terms of exports. Algeria has thus risen from 163<sup>rd</sup> to 156<sup>th</sup> in the World Bank’s Doing Business rankings.

Algeria recently adopted a new constitution aiming to improve transparency and governance and encourage a market economy.

## Long term engagement

Siemens has been involved in Algeria for more than 160 years (with the first telegraph in 1857) and had been established in the country since 1962, becoming one of the companies most deeply rooted in the economy.

Siemens Algeria makes it a point of honor to follow the principle of good governance with regard to compliance, suppliers and safety.

Since 2012, a Siemens compliance manager based in Algeria has provided more than 50 in-house training courses on this subject and organizes conferences for students on the same subject, with the assistance of USTHB and ENP.

Along the same lines, Siemens selects its suppliers and partners according to a procedure binding them to comply with its code of ethics.

Siemens has also made safety a commitment and a responsibility that is both individual and collective, shared by all. This “zero injuries” culture extends across the entire company, through specific training programs.

*“To be perfectly clear: safety and compliance are the foundations of our company and are non-negotiable.”*

Joe Kaeser, President and CEO of Siemens AG

*“We will help ensure that more than 3,000,000 Algerian homes have access to electricity by 2020*

Mourad Chirk Belhadj,  
Director of the Power & Gas division and the Power Generation Services division





---

# Productivity and innovation

---



17,500

IT engineers – Siemens is one of the world's leading suppliers of software solutions

1

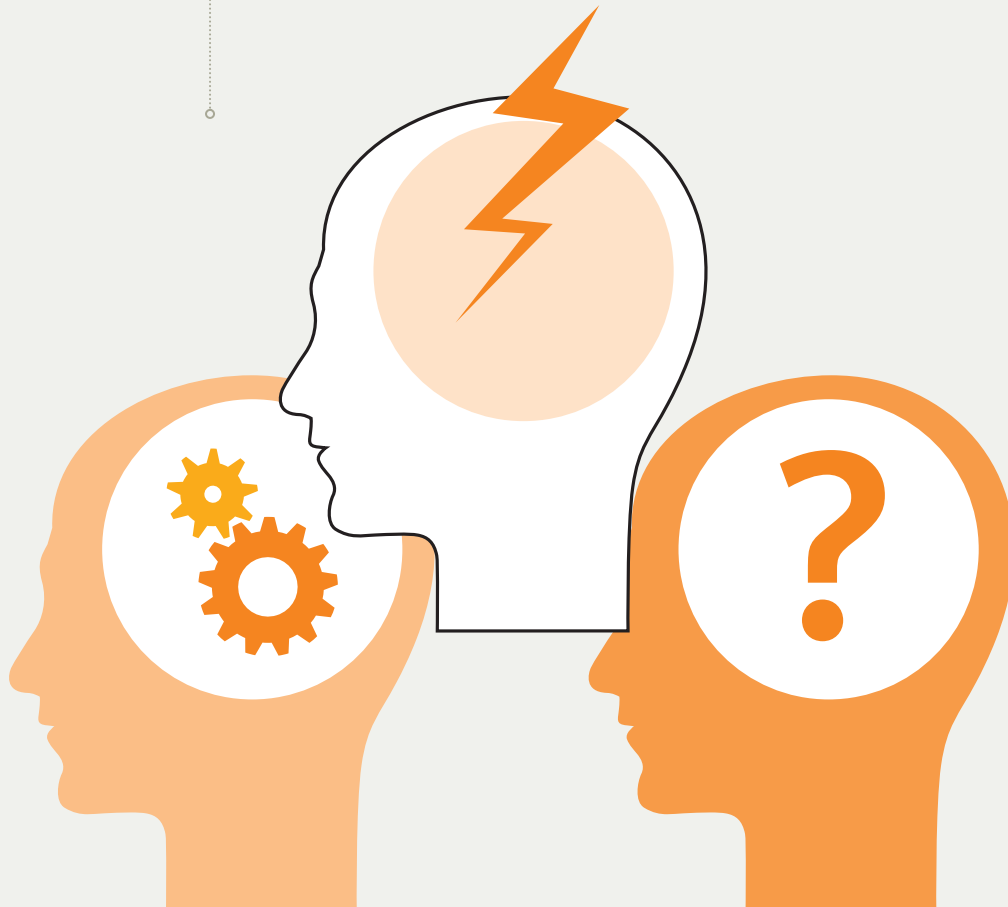
In 2014, Siemens launches its regional engineering centers (REC); one of the first was set up in Algeria

11 billion

m<sup>3</sup> of gas transported every year by the GPDF pipeline, equipped with Siemens systems

20 years

of Siemens experience in the digital field



When it comes to innovation, the World Intellectual Property Organization (WIPO) ranked Algeria 72<sup>nd</sup> out of a total of 128 countries studied worldwide.

In Algeria, spending on research and on development accounts for less than 1% of GDP – a virtually insignificant level – to a large extent owing to the low level of private sector investment in research.

Participation in research and innovation activities is generally good in the large companies but insufficient in the SMEs. There are currently no statistics for innovation in Algeria, but if we take the filing of innovation patents as an indicator, the Algerian National Institute for Intellectual Property (INAPI) has so far recorded more than 800 inventions protected by patents. Of these, 90% come from the multinationals, with the remaining 10% concerning national companies.

A certain number of obstacles hinder Algerian companies in their innovation efforts: lack of capacity for acquiring and integrating external innovation within the company, problems with identifying effective commercial models to encourage new ideas, and insufficient investment funds and financing opportunities. In Algeria, the banks grant too few credits and there is no risk-capital or start-up capital market for companies.

The Algerian Government, which has fully

*Participation in research and innovation activities is generally good in the large companies but insufficient in the SMEs*



## Digitization is seen as a social project

understood that the country cannot rely on a hydrocarbons-based economy forever, has developed a series of plans to boost innovation. On the eve of a new industrial revolution based on information and communication technologies, Algeria has placed the digital sector at the heart of its strategy to develop and diversify the economy. Two significant advantages (nearly 60% of the population under 30 years old and a high level of penetration of digital tools) put Algeria in a good position to become a country with high potential in the digital economy.

### Placing the digital economy at the center

For the Minister in charge of the digital economy and modernization of the financial systems, the implementation of the digital economy ecosystem is an absolute priority, as

is the need to ensure the profitability of this model for the national economy. Digitization is seen as a social project with a cross-cutting approach and implementation (technological and technical) around an exceptional human capital.

### Every day, a gas turbine generates an average volume of 30 gigabytes of operating data

in the global economy, data have become the most important “raw material” and, unlike others, their volume is constantly rising. They also lead to greater transparency and allow improved decision-making. By integrating the masses of data produced by the machines with the data from other sources (such as weather forecasts and field service reports) and by carrying out advanced analyses, the experts can predict and avoid failures. They can also identify opportunities for improving performance or for making energy and cost savings. Digitization is in the process of bringing about a profound change

in our economy and our society.

The constantly growing and changing range of electricity production methods and new developments in the distribution, storage and consumption of energy, are making the energy landscape increasingly complex. This market has more players and is producing more data than ever before. For example, a gas turbine generates an average volume of 30 gigabytes of operating data daily. Smart assessment of these data makes it possible to determine at what moment the turbines need to be serviced – leading to shorter down-times for the customers.

Digitization is a highly strategic challenge for Siemens’ customers. Thanks to its digital transformation expertise and experience of more than 20 years in this field, Siemens is playing an important role in data generation and analysis. Siemens’ digital services, described as “smart information systems”, combine the most advanced algorithms, data analysis and automatic learning technology.

The overall digitization offering







(processing, analysis and smart use of the mass of data generated by the Siemens solutions and products) enables the customers to significantly boost their productivity. By combining data and engineering technology throughout the value chain, they reach high levels of flexibility and resilience in production and in operations.

#### **Siemens digitization technologies and engineering working for Algeria**

To stimulate innovation around the world, Siemens launched a new initiative in 2014: the regional engineering centers (REC) built around the "Digital Grid", one of the first of which was set up in Algeria.

This enabled 13 young graduates from this sector to take part in a training program in Belgium.

The center now offers its expertise to Africa and Europe.

#### **Our role is to meet the particular needs of oil and gas pipeline operators**

Pipelines are vital in ensuring the safe, reliable and efficient transport of oil and gas. They represent a vital link for any national economy.

Siemens supplies integrated solutions for pipelines: machinery, automation, electricity and security and communication systems.

## *The global digitization offering enables the customers to significantly boost their productivity*

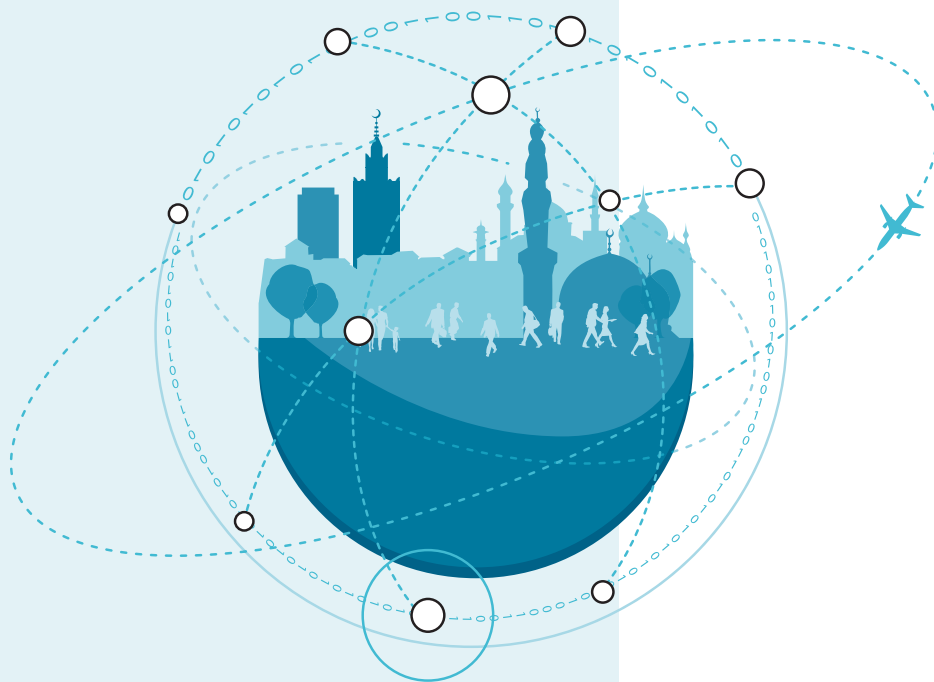
The Maghreb-Europe gas pipeline (GPDF) connects the Algerian site of Hassi R'mel, through Morocco, to Spain, where it is connected to the Spanish and Portuguese networks. It mainly supplies Spain and Portugal, as well as Morocco, with natural gas.

Every year, 11 billion m<sup>3</sup> are carried by this gas pipeline, entirely equipped with a Siemens control and data acquisition system.

*“As the leader on the rail automation market, we provide Algeria with cutting edge solutions”*

Abdelaziz Sameur – Director Mobility Division





---

# Transformation of society

---



# 2.7 millions

tons per year: the capacity of the Biskra cement works, for which Siemens delivered the air insulated substations (AIS)



# 50%

of cement production in Algeria uses Siemens equipment and technologies

# 28,000,000

passengers per year are carried by the Algiers metro for which Siemens, as consortium leader, delivered the first line and is continuing to supply the signaling systems



# Algeria is experiencing rapid urban development



Known for its magnificent Sahara desert and its impressive Atlas mountains, Algeria is the largest country in Africa. More than 90% of its population is concentrated in about 1/8<sup>th</sup> of its territory, with the plateau and the desert regions being scarcely populated. Nine out of every ten people live in the northern coastal region, where the country's main cities are located.

Urban development in Algeria is rapid (2.77% per year between 2010 and 2015), and it has a population of 40,263,711 (July 2016 estimates), distributed between the rural and above all urban areas, because more than 70% of Algerians (2015) live in cities. Algiers, the capital is the largest city in the country, followed by Oran (west of

Algiers) and other urban centers such as Constantine and Annaba. On the Mediterranean coast in the north of the country, Algiers is home to 5.7 million people. It has the privilege of being the oldest city in the country, going back nearly 3,000 years. Its port, the largest in Algeria, is also a major industrial center.

*Siemens is developing Smart City projects worldwide*





### A sustainable city in every sense

The creation of new towns (Sidi Abdellah, Bouinan, Boughzoul, Hassi-Messaoud and El-Ménéa) demonstrates the desire to integrate a certain number of “sustainable city” aspects in the broadest possible sense. In addition to the new towns, Algeria is also initiating integrated city projects (new town centers), including collective equipment, access to energy, water and green spaces. A large number of the new towns enjoy large residential areas, sustainable development centers and links with universities or scientific research centers.

This strong trend towards urban development, combined with the rapid rise in the number of cities over a short period, complicates urban management as a whole. Algeria is tackling this major challenge within the framework of a new urban governance program. This more particularly involves enabling the new towns to carry out residential, social and economic functions, harmoniously.

### An interactive tool for cities

The “City Performance Tool” (CyPT) is a complete, interactive tool developed by Siemens to help cities meet their environmental objec-

tives, while enabling them to measure the impact of their technological choices on job creation and growth in the infrastructures sector.

The City Performance Tool is a sophisticated simulation tool that can be used for a large number of different decision-making scenarios. It analyses the buildings, transports and energy technologies of a city, through more than 70 technologies deployed at any given moment and level of implementation. It measures the impact of a city’s strategic plans, compares traditional and more modern methods and determines the rate at which each city



needs to deploy them in order to reach its environmental objectives. It also provides environmental and economic performance indicators in the transport, building and energy sectors.

In Algeria, given the current rate of increase in production by the various cement manufacturing companies, the country will be “self-sufficient” in cement by 2017-2018. Several cement-works projects have been launched, allowing substantial additional production of cement for the Algerian market.

Siemens has won a contract to supply air insulated substations (AIS) for the Biskra cement works in the south of the country, with a capacity of 2.7 million tons per year.

Today, 50% of cement production in Algeria, or more than 8 million tons per year, is based on electrical equipment and automation technologies from Siemens.

#### **60% of oil production is transported via Siemens pumping stations**

The 800 km long OZ2 oil pipeline links Haoud el Amra, in the south of Algeria, to Arzew, on the Mediterranean coast. It was built in 2005 and was designed to help Algeria stimulate oil exports. The OZ2 pipeline follows the route of the OZ1 pipeline, built about 30 years ago.

Today, 60% of all oil production in Algeria is transported through the OZ2 pipeline. This innovative pipeline is equipped with six pumping stations, for which Siemens supplied the equipment, including 30 turbines.



1<sup>st</sup>

As consortium leader, Siemens delivered the first metro line in Algeria

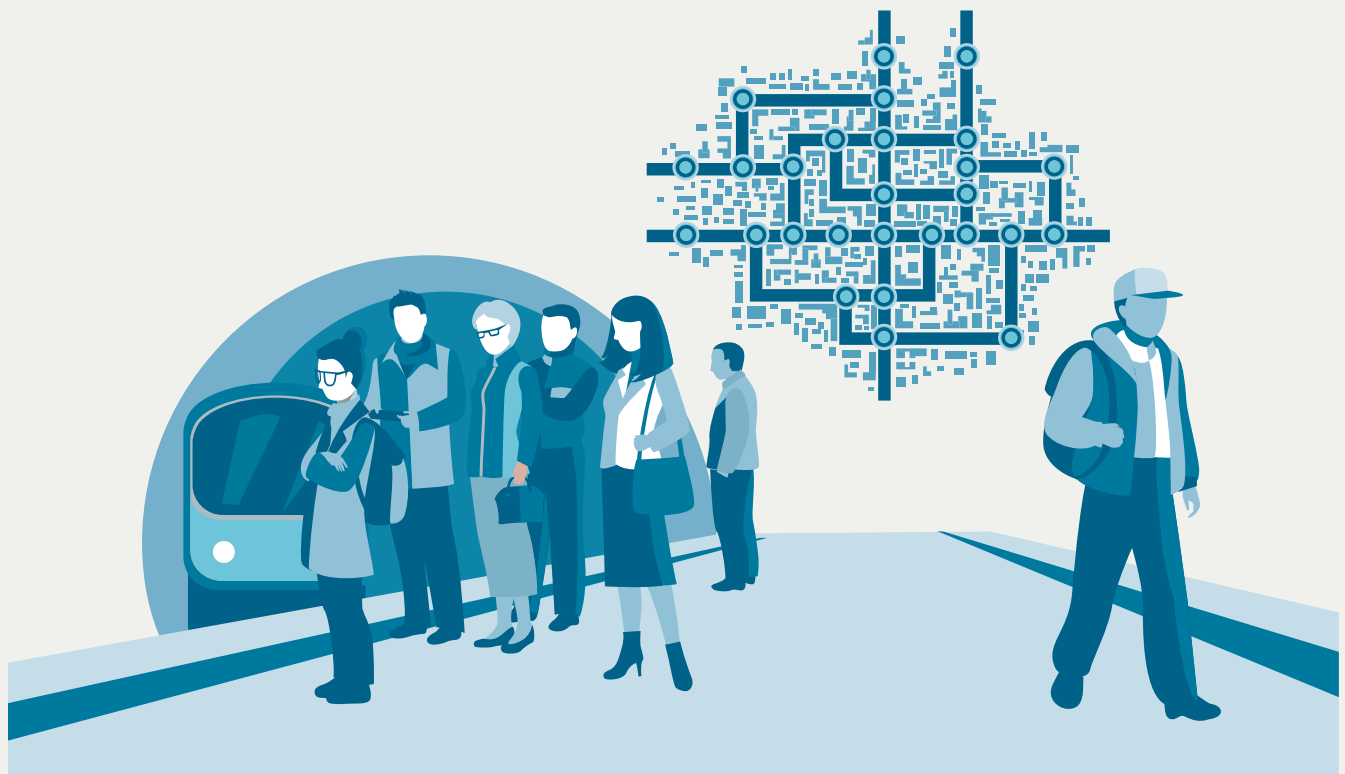


70

technologies in the Siemens City Performance Tool (CyPT)

60%

of all oil production in Algeria is carried via the OZ2 pipeline, equipped with 6 Siemens pumping stations





# Rail automation market leader

During the dark decade from 1991 to 2001, infrastructure investments were practically paralyzed in Algeria. This situation led to significant delays in infrastructure maintenance and upgrades. Moreover, the country's vast desert area poses a permanent challenge to infrastructure projects. To remedy this, the government has made transport a priority; major upgrades and expansions are in progress, under its vast public investment program.

## A high-speed line

Most of the population and therefore most of the country's economic lifeblood, is situated along the northern coastal strip. Algerian railways are also most densely concentrated in this same zone. Road and rail links focus mainly on long-distance connectivity on the east-west and north-south routes.

In recent years, the rail infrastructure has benefited from significant investments; orders were placed or improvements made on the main routes. This work is part of the government's long-term plan to develop and modernize the rail network.

Long-distance connectivity along the northern coast is also on the agenda. The Algerian government is investing 9,596 billion DZD (81 billion EUR) to develop a high-speed east-west line over a distance of 1,300 km, crossing the country from Tunisia to Morocco. It will also have spurs connected to the main ports and cities.

*Long-distance connectivity along the northern coast is also on the agenda*



### First metro line

The key question is to organize transport so as to avoid unnecessary delays and harmful emissions.

Long-distance transport linking various regions in Algeria and crossing the continents, poses a series of questions. It is essential to ensure economic management along the entire logistic chain and guarantee reliability and safety at all levels for the transport of goods.

Safety, efficiency and responsible management of resources are the main reasons why increasing numbers of logistics managers are opting for rail transport in the future – in particular for transporting heavy goods.

Goods transport by rail has two key advantages: it is far faster than transport by sea (all the more so over long distances) and financially far more interesting than air freight.

### Sound technology for more than 150 years

A number of the rail transport challenges can be overcome by implementing individual automation solutions. Rail systems safety technology has proven its worth for more than 150 years now.

From the beginning, Siemens has been a player in this field and still has a key role in the future development of innovative technologies for rail automation in North Africa.



For the capital, Algiers, Siemens – as consortium leader – delivered the first metro line: Trainguard MT CBTC automatic train control system, Airlink radiocommunication system and Digiloc train localization system. Siemens also installed the telecommunication system and the traction electricity power supply.

The operations control center was also equipped with Siemens technology. The company was in charge of project management and scheduling. The consortium partners were Construcciones y Auxiliar de Ferrocarriles S.A. (CAF) and Vinci Construction.

carried more than 75,000 passengers per day, or an average of 28,000,000 passengers every year.

Siemens will also be in charge of the first phase of deployment of the European Train Control System (ETCS) on the Algiers metro network. It will enable trainsets to run at top speeds of 160 km/h and increase hourly frequencies in order to boost capacity. Siemens will also be delivering shunting infrastructures in order to reinforce the efficiency of the freight line and a cutting edge technology to optimize freight handling. The Algerian personnel will be trained in the

## For the capital Algiers, Siemens, as consortium leader, delivered the first metro line

Since it opened in 2010 and up to the end of 2016, the metro line has

operation and maintenance of the system.

*“We cannot rely on oil, industry and agriculture alone. We must move towards a knowledge-based digital economy”*

Abdelmalek Sellal,  
Prime Minister of Algeria

