



# CLIMATE

**A LINCHPIN**

**OF OUR STRATEGY**



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## Message of SONATRACH Chairman & Chief Executive Officer



*Chairman & Chief  
Executive Officer*



**We ambition to achieve a balance between our emissions by sources and removals by sinks of Greenhouse Gas Emissions (GHG) during the second half of the century.**

SONATRACH, a major player on the energy scene and a driver of the national economy, has always given a paramount importance to climate concerns and carbon footprint reduction. Thus, we wish to share the guidelines of our strategy on climate issues with all our employees, clients and stakeholders.

Our strategy lays on continuity and the reinforcement of our commitments to a sustainable and responsible energy future and our ambition is to achieve a balance between our Greenhouse Gas Emissions and absorptions by carbon sinks during the second half of the century.

We also intend to highlight the significant progress already accomplished through our daily actions to the benefit of climate, notably, in reducing substantially associated gas routine flaring in accordance with the international commitments we made in 2018, particularly in the framework of the Zero Routine Flaring by 2030 initiative advocated by the World Bank.

We act within a general framework based on good governance practices and to optimally implement all our actions, we rely simultaneously on the three fundamental pillars of investment, capacity building, and technology transfer.

Thus, to respond to the climate challenge, we advocate a pragmatic approach that is progressive, iterative and sustained with clearly defined intermediate targets.

This is why our climate strategy is based on several simultaneous actions, with a particular focus on the «quick-wins» of reducing flaring and fugitive methane emissions. We aim to reduce them to close to zero by 2030. We are also working towards an energy transition, integrating further renewable energies into our energy mix, while developing new sectors such as low-carbon fuels and green hydrogen.

In parallel with these actions, we are involved in increasing the energy efficiency of all our facilities by building on the extensive energy audit program undertaken since 2017.

In terms of carbon sinks, we are developing an ambitious forestry program just as we study the safest and most efficient carbon capture technology solutions.

Similarly, in all our activities, we resolutely favour processes, equipment and services with a lower carbon footprint.

We are also convinced of the contribution of cooperation, and aspire to strengthen our collaboration with our partners and associates in order to promote best practices and the sharing of experience because it is only together that we can take up the challenge of climate changes.

We are aware of the linchpin role that management plays in the realization of our strategy. Therefore, we regularly adapt our organisation to support our climate actions, by developing our performance management system to better integrate this dimension into the evaluation of our managers.

In terms of research, promotion of innovation and professionalization of our employees, we regularly

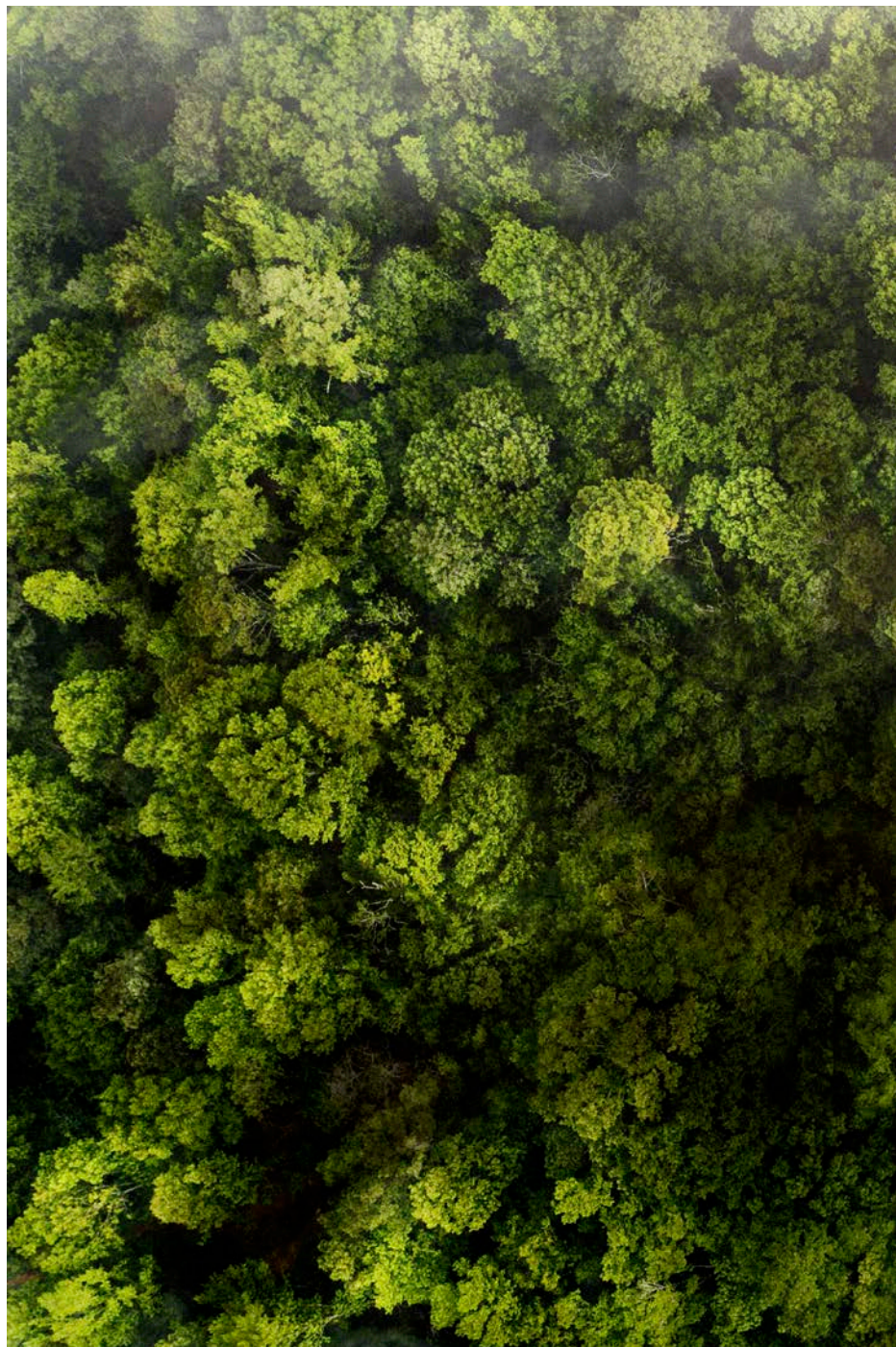
strengthen our capacities and improve teaming with universities and specialized institutes to underpin major initiatives and scientific advances in the field of climate.

We will continue to act in a spirit of transparency and cooperation with all our partners in order to better articulate our vision and strategy, and we will ensure that we regularly communicate about our actions by showing goals and outcomes.

In this way, we will move towards a sustainable and responsible energy future. We are convinced that this is a real challenge that we will be able to take up.

*Chairman & Chief Executive Officer*  
**Mr. RACHID HACHICHI**





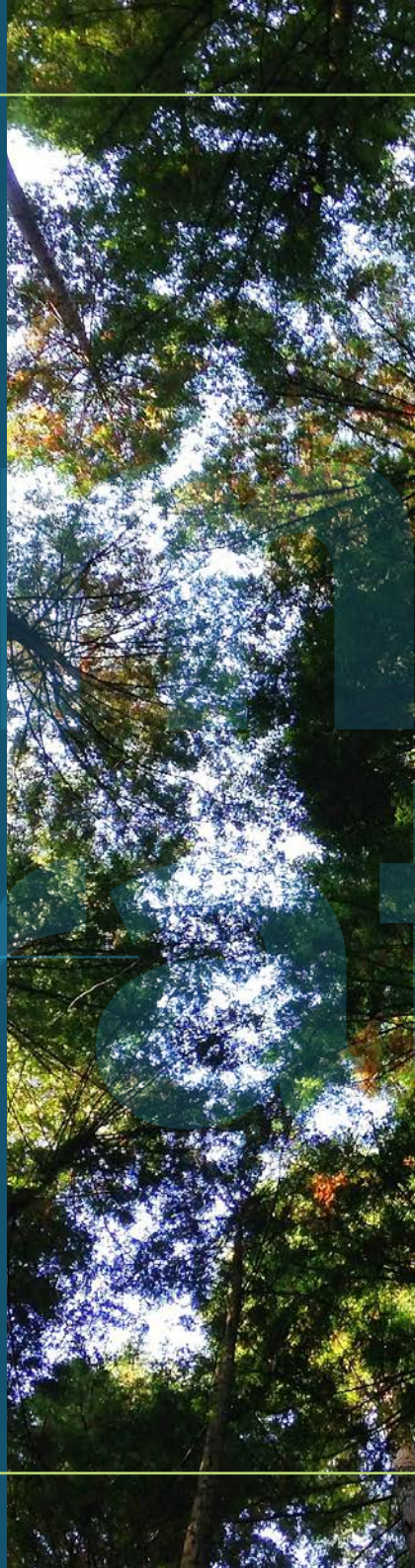
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# climate strategy

**Climate** : an **integral**  
part of our **strategy**





Climat : a linchpin of our strategy

When working out our strategy and long-term vision, fighting against climate changes constitutes a key element.

Thus, in addition and in continuity with the efforts already made by our company, we are dedicated to perpetuating and stepping up our actions to reduce Greenhouse Gas emissions, while remaining the reliable supplier of energy that we have always been to all of our customers.

In parallel to our actions undertaken to offer a less carbonized energy, we endeavour to reinforce our daily actions to control our internal energy demand by promoting energy efficiency throughout the oil and gas chain.

- Putting in place a program of climate governance
- Reducing our Co<sub>2</sub> and methane emissions
- Improving energy efficiency in all our facilities
- Integrating more renewable energies in our energy mix offer
- Considering production and use of other sources of energy such as green hydrogen and low carbon fuels.
- Developing technological and natural programs of capturing, sequestering and valorizing Co<sub>2</sub>.

We act step by step, with pragmatism and a strong level of commitment. With this in mind, it is necessary to steadily improve the data and measures of our consumptions and our emissions in order to recommend the most suitable mitigating solutions.

We need to better evaluate our emissions in order to better react and outline our targets to reduce at fixed and gradual deadlines and ultimately achieve zero- carbon by the second half of the century.

For this purpose, we rely on our own resources, and also on the contribution from cooperation where we have already been engaged in several exchanges, partnership and cooperation initiatives, to share and benefit from the experiences of our different involved parties.

**«We commit to consider the approach of fighting climate changes in our whole planning process and our investment programs».**

# SONATRA

**SONATRACH**

in **figures**







### AN AFRICAN LEADER

- 2<sup>nd</sup> Oil producer
- 1<sup>st</sup> Natural Gas producer
- 3<sup>rd</sup> LPG producer
- 1<sup>st</sup> Condensate producer



### TRADITIONAL MARKET

- 1<sup>st</sup> Gas supplier of Italy
- 2<sup>nd</sup> Natural Gas supplier of Spain
- 2<sup>nd</sup> LPG supplier of Turkey
- 2<sup>nd</sup> LNG supplier of Greece



### EXPERIENCED STAFF

- +150 000 employees within the Group



## UPSTREAM

- 202 Perimeters operated by own effort
- 104 perimeters operated in partnership



## PIPELINE NETWORK

- 21190 Km of length for 237.2 million TOE transported, consisting of 43 pipelines of which 23 gas pipelines



## DOWNSTREAM

- 05 Refineries
- 01 Condensate topping
- 04 NG liquefaction complexes
- 02 LPG Separation complexes
- 04 Petrochemical complexes



## RENEWABLE ENERGIES

- 02 Solar units in operation

Primary Production  
**190** million TOE

Exports  
**92** million TOE

LNG Production  
**23** million m<sup>3</sup>

\*2022

# Climate

**Climate**  
Governance

# Gov





Today, SONATRACH is working to put in place a climate governance that integrates all the processes, policies and practices required for the control and reduction of the company's impact on climate and also the risks posed by this phenomenon on its activity and sustainability.

This, involves the implementation of a climate strategy, fixing objectives to reduce greenhouse gas emissions and the implementation of measures to achieve them and also the commitment to continually improve its performance in this field as set out in its HSE policy.

SONATRACH works also to systematically take into account the risks and opportunities linked to climate changes in its strategy and put in place a transparent communication with its external and internal stakeholders, and also on the company's efforts and results in matter of fight against climate change and its impact.

In this context, the company put in place early 2019, an organic structure, in charge of climate issues notably the improvement of the transparency framework, climate action and the effect of greenhouse gas emissions.

Today, the climate concerns and the climate challenges are more integrated in our long-term strategic options. The related actions have been underpinned by the whole governing bodies of the General Management of the company.

This integration is supported by the setting up of a governance organ specifically responsible of climate governance and the promotion of efficient decision-making processes in order to ensure a climate accountability at all the relevant levels of the company.

It will be notably in charge of granting an appropriate organisational framework, with the climate and development objectives and the Company.

Within the company we will also ensure to anchor governance through the strengthening of our human capacities, the development of cooperation and the framework conditions while at the same time reinforcing communication, visibility and transparency.

We will extend our reward system to all our employees who come up with projects and initiatives aiming to preserve climate.

As a citizen corporate company and within a framework of fair governance we strive to contribute further and even closer with all the interested parties to sustain the initiatives for climate preservation.

We remain convinced that all our actions in favor of climate will come to fruition thanks to the full support of all our employees and managers. We will ensure that our governance system nurture cooperation, collaboration, innovation and learning.



**«We remain convinced that all our present and future actions, to the benefit of climate will be achieved thanks to our employees and managers'adhesion».**

# Low-C

Developing  
a « **Low-Carbone** »  
Culture

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SONATRACH is working to develop a true “low-carbon” culture within all of its structures through several measures and principles.

This culture is nurtured by the active involvement of the company’s senior management. It is for this reason that managers are called upon to set an example by adopting climate-friendly practices and integrating low-carbon objectives into the company’s strategy.

Our company also carries out ongoing and targeted awareness-raising and training activities leading to strengthening our capabilities. These actions constitute essential levers to enable our employees to support the “low-carbon” development of the company.

We strongly rely on the implementation of a policy of partnership and collaboration with stakeholders. This leads to sharing the best practices through workshops or seminars, collaborative research and development programs, joint training, awareness actions, as well as participation in industry initiatives.

Our communication is intended to be transparent. It is in this sense that we ensure to promote and strengthen communication with our internal and external stakeholders, and to inform them regularly about our actions and our results as well as the risks and opportunities linked to climate change.

We ensure that this communication is regular, consistent, and accessible in order to promote the emergence of a common understanding and a shared language within the company. To do this, we will continue to rely on performance indicators measuring the progress made in the transition to a low-carbon economy.

We will put in place a reward and recognition system to incite our employees to achieve the goals of reducing greenhouse gas emissions and propose ideas and initiatives to reduce the company’s carbon footprint by acting on all the levers within our reach.

We encourage societal and climate-oriented actions, which SONATRACH has always initiated and supported with local communities. This role as a citizen corporate company will be strengthened with more actions oriented towards the adaptation to the effects of climate change and mitigation. This will stimulate the climate leadership of our company at the national level as well as the involvement and sense of belonging of our employees.

## REINFORCING OUR CAPACITIES

To reach our goals we will continue to reinforce our capacities by programming continuous and oriented training and favoring bridges for collaboration between our company, the University sector and all the players and partners working on the issue of climate preservation.

Furthermore, each of our employees will be asked to contribute through their daily and personal actions to achieve the objectives set by the company and contribute to detecting and preventing any action that could undermine the respect of the climate.

Study and awareness days will be regularly organized on our industrial sites by specialized experts with the participation of our partners with whom we share our values on climate requirements. We intend to benefit from their experiences and the outcomes of their works in terms of respect of the rules of the art and good practices.

**«We will put in place a reward and recognition system which constitutes a framework to encourage our employees to achieve the goals of reducing greenhouse gas emissions and propose ideas and initiatives aiming to reduce the company's carbon footprint by acting on all the levers within our reach».**

# Zero

**Zero** routine  
**flaring** by **2030**

# Flaring





**«We will strengthen our programs of gas flaring in order to reach zero routine flaring by 2030».**

Long considered a lethal product destined to be flared, gas associated with oil has been the subject, for several years now, of systematic recovery. SONATRACH aims to reach a level below %1 of flared gas and a complete elimination of routine flaring by 2030.

The gas recovery program was initiated in the 1980s and has been stepped up since 2015. By 2026, This program will allow us to avoid emissions estimated at some 4 million Teq CO<sub>2</sub> and aims three main objectives:

#### **ENVIRONMENT PROTECTION**

Our company has asserted in its « HSE Declaration Policy» its firm commitment to actively contribute to the global action to fight climate changes by reducing all forms of pollution and GHG emissions.

#### **RECOVERY OF NATURAL RESOURCE**

Our company valorizes the recovered gas by injecting it directly into the natural gas transport network by pipeline, thus increasing sales volumes, or by reinjecting it into the deposits to maintain their pressure or by using it as fuel gas.

#### **A LEGAL CONFORMITY OBJECTIVE**

National regulations only tolerates flaring exceptionally at thresholds below 1%. SONATRACH is working to comply with these levels on all its sites across its entire value chain.



## A COMMITMENT DISPLAYED ON THE INTERNATIONAL LEVEL

Through Algeria's nationally determined contribution submitted under Paris Agreement, SONATRACH contributes to the international effort to reduce flaring, targeting a rate below 1% by 2030.

Furthermore, SONATRACH has joined the « Zero Routine Flaring by 2030 » , an initiative launched by the United Nations and the World Bank.

The associated gas recovery programs undertaken by our company have made it possible to significantly reduce the flaring rate, which shifted to 3.19% in 2023 compared to 5.43% in 2020.

These significant reduction efforts will have to continue and accelerate to reach the recommended level of « Zero routine Flaring” by 2030. In the meantime, we are constantly working to ensure perfect combustion of our torches while improving their efficiency and yields.

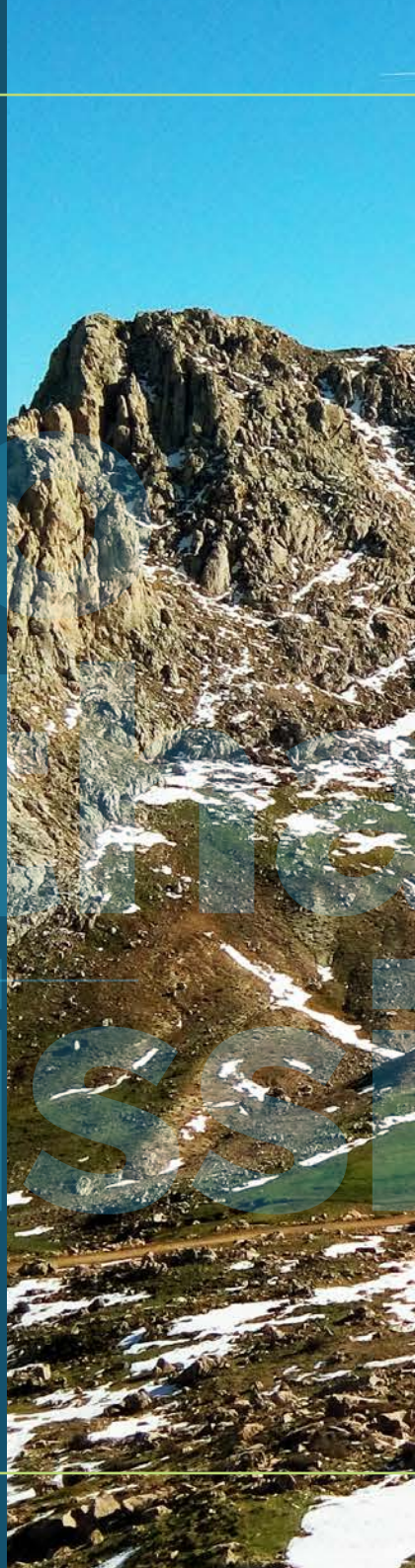
## **-28 % Flared Gas** in 2023 vs 2020

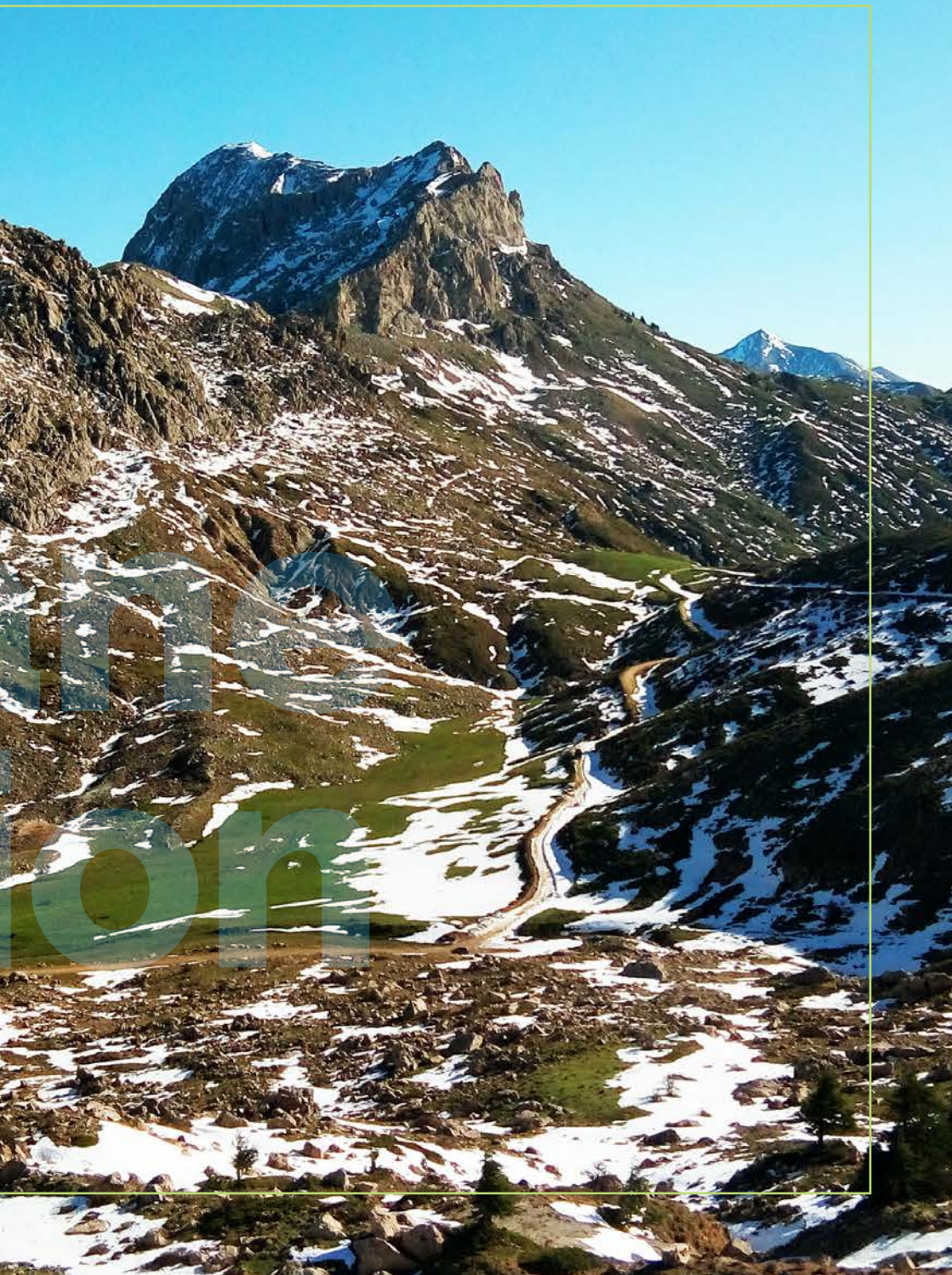
Thanks to the entry into operation of new flared gas recovery units in several production regions, notably Hassi Messaoud and Ohanet.

Overall downward trend recorded since 2020, with a cumulative reduction amounting to 28%.

# Zero methane emissions

Towards **zero**  
**methane emissions**  
by **2030**





The assessment and reduction of fugitive methane emissions represent a climatic and also economic challenge for us, this is why we have implemented a major program aimed at quickly detecting, repairing and preventing all leaks, releases and venting.

We still have significant work to achieve to reliably assess fugitive emissions at our facilities.

It is within this framework that we plan to map all of our fugitive methane emissions throughout our gas and oil chain.

To do this, we will rely on top-down approaches, in particular the use of satellite tools through the cooperation agreement that we have concluded with the Algerian Space Agency ASAL.

Thus, we adopt bottom-up approaches, such as leak detection and repair campaign (Leak Detection and Repair- LDAR) and the acquisition of a set of appropriate technological means, such as OGI Cameras (Optical Gas Infrared). Operations to reduce venting will be carried out by the introduction of appropriate technical and technological solutions, both at the level of hydrocarbon storage tanks, wells, process vents, maintenance


operations and loading / unloading operations.

To prevent these fugitive emissions, we include the methane reduction from the design phase of our new facilities. When engineering projects or modifying them, we ensure that we favor systems that can lead to reduction by recommending low-carbon solutions.

The management of the issues of methane emissions by the oil and gas industries is evolving rapidly with numerous innovative solutions being developed, tested and implemented continuously.

In order to promote feedback and technological monitoring between parties interested in methane issues, cooperation and consultation constitute a tool of choice that must be strengthened.

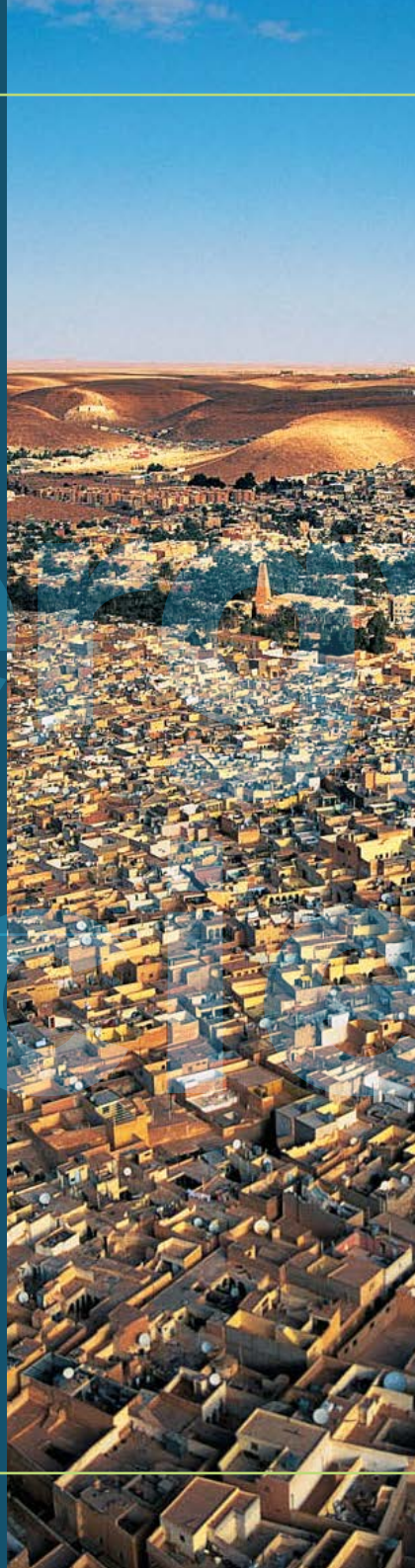
For this purpose, SONATRACH has entered into several agreements and conventions with universities and research centers covering mitigation in general and the reduction of methane emissions in particular.



**«In terms of prevention of these emissions, we include the methane reduction variable from the design phase of our new facilities».**

# Energy efficiency

**Energy efficiency** : an  
impending lever for  
reducing our **emissions**





Alongside actions to eliminate routine flaring and reduce fugitive methane emissions, we are also acting on the energy efficiency of all of our industrial facilities.

For us, energy efficiency constitutes an essential and indispensable lever of our climate strategy.

For this purpose, periodic energy audits are carried out as part of the implementation of the Energy Management Law with our Agency for the Promotion and Rationalization of Energy Use (APRUE) . This program has already covered 90% of our industrial sites and has allowed us to train more than 350 internal auditors and energy personnel.

In addition to this program, we carry out a series of in-depth energy assessments by our own means and/or in cooperation with our partners.

Evaluating the potential for energy savings expected and resulting from our policy of rationalizing consumption will allow us to better evaluate the necessary investments and identify the required actions.

We will also work to significantly optimize the self-consumption of our industrial units by making the required investments where necessary.

We also encourage the implementation of energy management systems according to the ISO 50001 standard in order to establish a dynamic of continuous improvement in the energy performance of our sites.

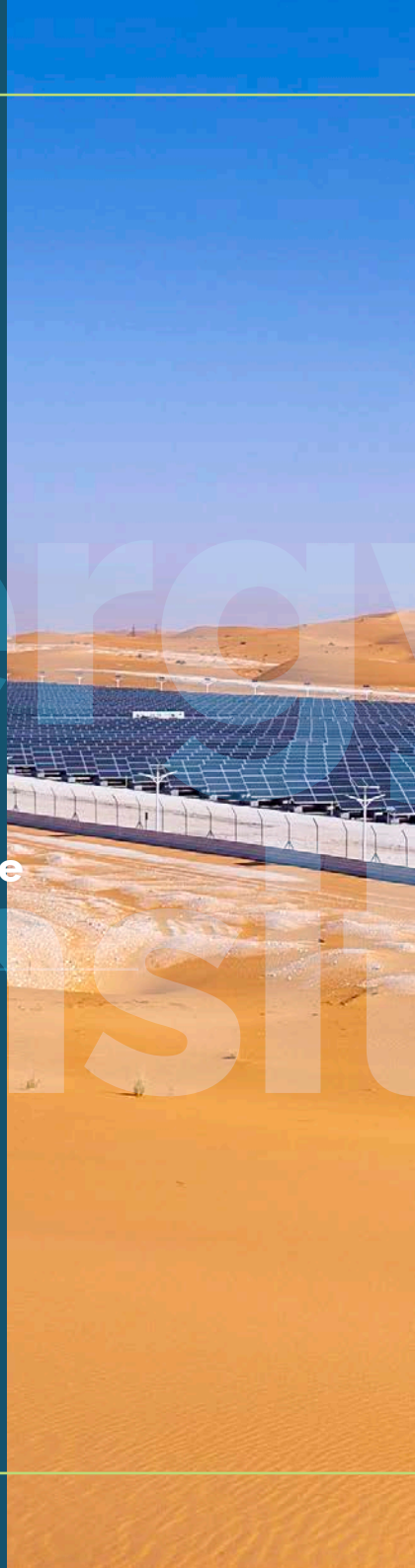
Several of our complexes and industrial sites have already undergone third-party certification of their energy management systems.

**« Identify and evaluate the energy saving deposit to enshrine energy mastering as corporate culture».**



# Energy transition

Towards **energy transition**  
integrating **further renewable**  
**energies** in our **energy mix**





To address the climate challenges and diversify our energy mix, we have embarked in a development program of renewable energies and this is how we realized in 2011 a first hybrid solar-gas plant with a capacity of 150 MW of which 25MW in Hassi R'Mel.

Backed up by our first experience, aware of the need to accelerate the transition to a low -carbon energy model and ensure environmental protection , we have elevated the development of renewable energies to the rank of strategic axis of the company. It is for this reason that we have set up a new central department in charge of new and renewable resources , making it possible to create synergy between corporate strategy and climate protection.

Since then , our company has initiated a program to install photovoltaic solar power plants in the South of the country where the sunshine potential is among the highest in the world.

The objective of this program aims firstly at covering part of the electricity supply of our living bases and then our production sites, with green electricity, thus reducing natural gas consumption and consequently, contributing to reducing GHG emissions.

A first 10 MW solar power plant was installed in 2019, in partnership at Bir Rebaa North site, avoiding the release of some 10 k tons of Co2 in the atmosphere.

This experience was followed by other projects of which one underway of achievement on the same site, and another project to be launched on a neighboring site. In the medium term, this program will be continued with photovoltaic solar power projects, particularly at the Tin Fouyé Tabenkort, Rhourde Nouss, OHANET and El Borma sites.

Also, a solar test lab ( Solar Lab) has been created in partnership in order to test different solar technologies under local climatic conditions, within the framework of our Research & Development programs.

The expected results of the Lab will allow us to make the best choices in terms of technologies most suited to our local conditions.

Furthermore, adjust to the objectives of the national hydrogen strategy, other solar stations will be constructed specifically for green hydrogen production and its derivatives.

The development of this new energy vector will make it possible to decarbonize several industrial sectors such as petrochemicals, refining, steel industry, cement industry, transport, and will open up new prospects for exports to our traditional markets, and new industry sectors.

This is why, we realize as a first step , pilot projects of green hydrogen production so as to master this new technology. These projects remain a prerequisite before embarking in the creation of industrial-sized units for which potential customers have already expressed their interest.



# CO<sub>2</sub>

A **CO<sub>2</sub>** sequestration  
and valorization program

# Valorization



ization

According to the International Energy Agency ( IEA) and other International Institutions such as GIEC, OPEC and GECF, CO<sub>2</sub> capture and sequestration technology is essential if we hope to reduce significantly global Greenhouse Gas emissions.

We should recall, that a first world experience in the matter of sequestration was achieved in Algeria in 2004 on the Krechba site where 3.8 tons of co2 were sequestered enabling the scientific world to benefit from a unique and innovative experience.

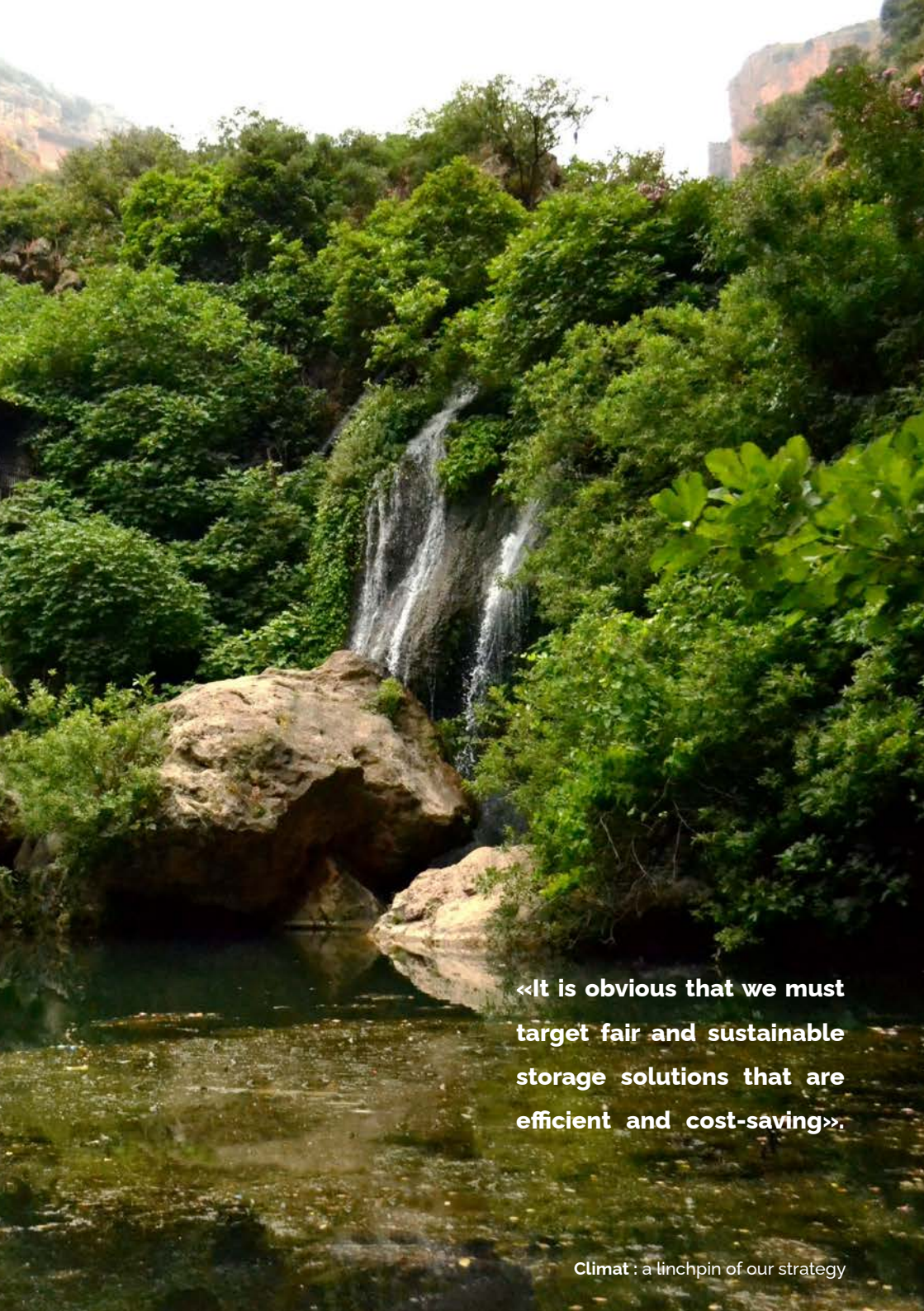
Thus, we will carry out an identification of all possible carbon sequestration sites, particularly in our former depleted oil and natural gas reservoirs . We are also examining all opportunities for carbon capture and sequestration projects that could constitute a profitable investment portfolio while significantly contributing to the achievement of our Greenhouse Gas emissions reduction objectives.

It is obvious that storage solutions should be safe and sustainable, efficient and cost effective, in accordance with regulatory frame which will be put in place to govern this activity.

In addition, we consider also the opportunities for the use and recovery of CO<sub>2</sub> in accordance with the scope of the challenges , combining within a common logic, the company's strategy and climate responsibility.

In 2022, SONATRACH organized a technical Day on carbon technological capture, use and sequestration , gathering reference international experts, institutions and agencies of the energy sector.

In addition, SONATRACH takes part in the numerous international initiatives taken by our partners in order to benefit and share our experiences in this field while at the same time remaining attentive to all new technologies and technical innovations.

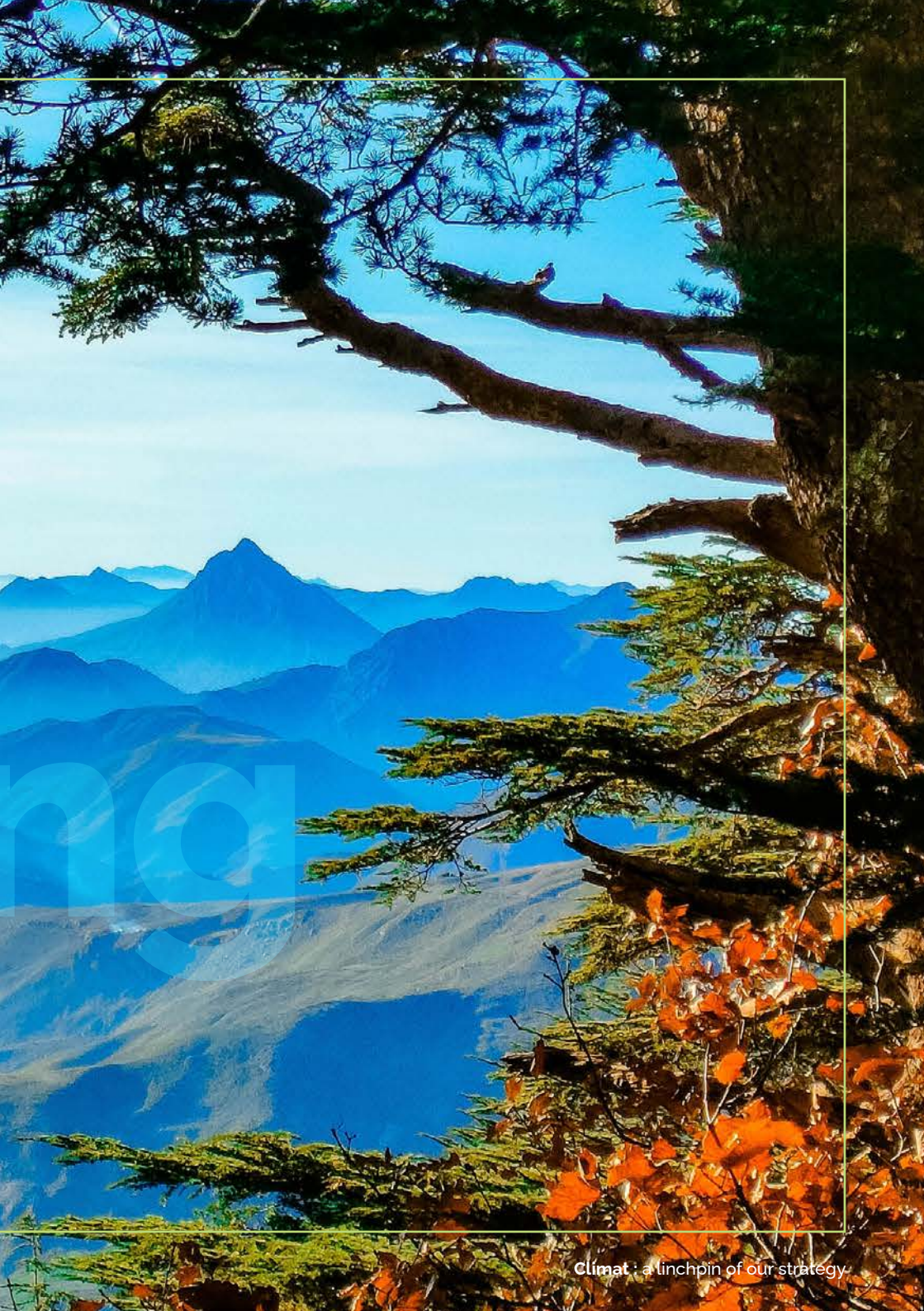


**«It is obvious that we must target fair and sustainable storage solutions that are efficient and cost-saving».**

# Tree Planting

An ambitious  
**tree planting**  
**plan**





Climat : a linchpin of our strategy

To compensate for CO<sub>2</sub> emissions generated by the combustion for production and use of useful energy in the Company's various activities and provide carbon credits, which could allow the Company to access international carbon markets, SONATRACH, like many majors in the oil and gas industry, has embarked on a vast forestry program.

This natural carbon sequestration project also targets other socio-economic objectives.

It will significantly contribute to the country's international commitments on climate protection.

It will support the socio-economic development of more than 10 000 farmers and create nearly 24 000 direct and indirect employments.


It will preserve the protection of the soils in the watersheds of the water dams and will help to create a natural barrier to the advance of the desert.

This forestry project is currently being developed around three priority axes:

- **Reforestation and afforestation**
- **Forest enrichment**
- **Agroforestry**

With a volume of 400 million tree seedlings, it will cover a period of ten years and will span a planting area of 520 000 hectares spread across all the regions of the country.

A preliminary estimate of the annual absorption potential carried out by the General Direction of Forests places it between 38 and 64% of the emissions from our useful energy consumption.

A photograph showing a pair of hands cupped together, holding a small, young tree seedling with dark brown soil. The tree has a thick, gnarled trunk and a dense canopy of bright green leaves. The background is a soft, out-of-focus green, suggesting a natural outdoor setting. The lighting is bright and even, highlighting the texture of the soil and the vibrant color of the foliage.

**<<With a volume of 400 million tree seedlings, it will cover a period of ten years and will span a planting area of 520 000 hectares spread across all the regions of the country>>.**

An aerial photograph of a rugged, mountainous landscape. The terrain is characterized by steep, rocky slopes in shades of brown, tan, and grey. A deep, winding river valley cuts through the center of the image, filled with dark, dense vegetation. The lighting creates strong shadows, emphasizing the topography. A thin yellow line runs horizontally across the middle of the image, passing behind the text.

**Evaluate**  
in order to  
**better prevent**

**Better**

**Prevent**



Climat : a linchpin of our strategy

For our company, the Measurement Reporting and Verification (MRV) system plays an important role in monitoring and improving the implementation of the mitigation objectives and policies that we have set and also strengthening our transparency system.

This is why, as a first step, we get down, within each structure of our Company, to exhaustively identify our sources of emissions. In a second step we will carry out their estimates and determine all the actions and processes combining technical, economic and environmental performance, to be implemented.

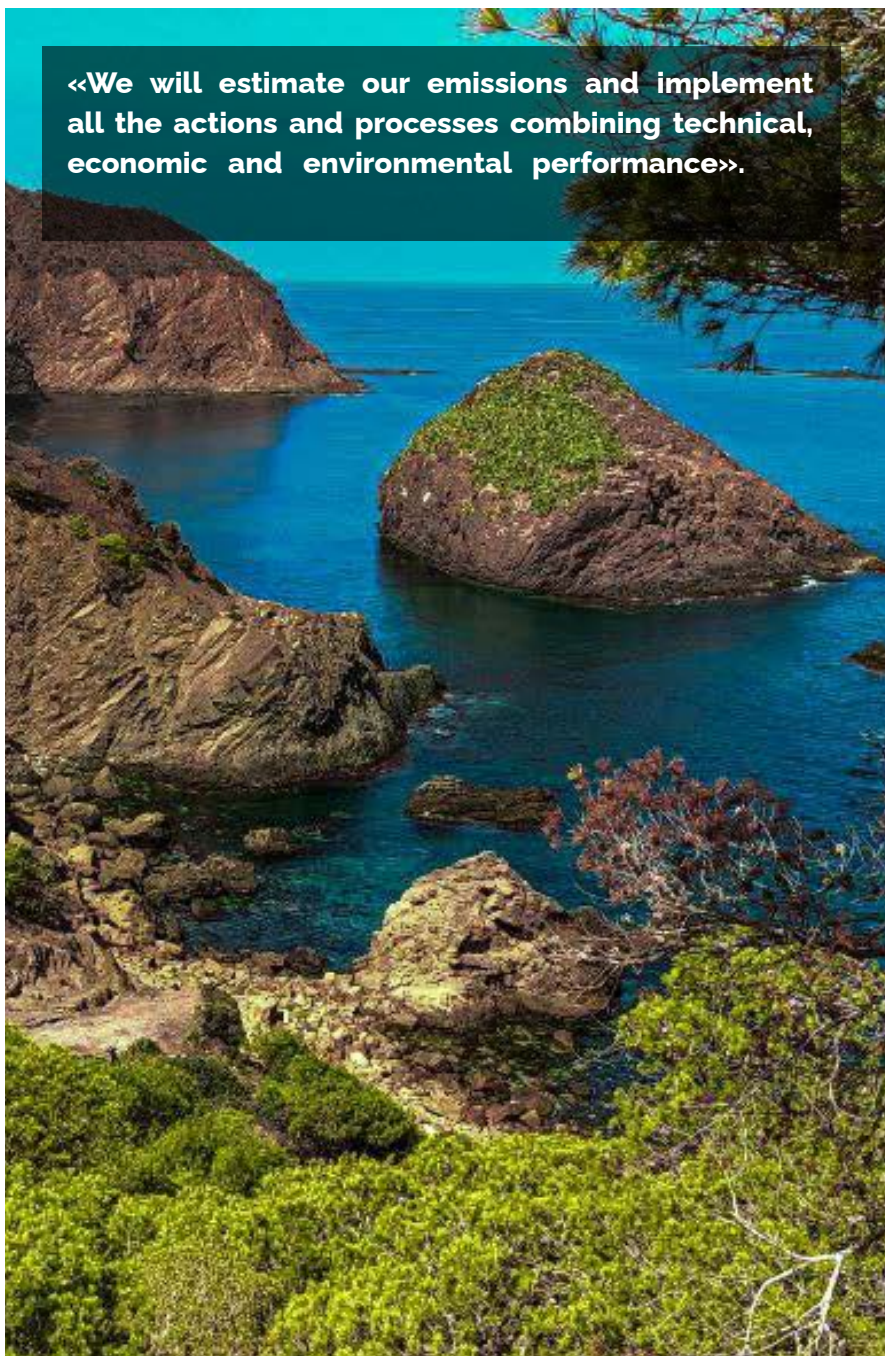
A pilot project for the implementation of an MRV system for the inventory of GHG emissions and mitigation actions was carried out respectively in the regions of Rhourde Nouss and Bir Rabaa North.

The feedback from these projects serves us to extend the MRV system to all SONATRACH Activities.

An inventory is currently being carried out and should lead to the definition of a basic scenario, which will help us to put in place programs and concrete actions which will allow us to realize our stated ambitions.

The Company will set out objectives and milestones which will reflect progress in the implementation of the overall strategy. These objectives will be measurable and defined in order to make visible the progress in the implementation of the recommended actions.

**«We will estimate our emissions and implement all the actions and processes combining technical, economic and environmental performance».**



# Expanded Partnership

Expanded  
Partnership



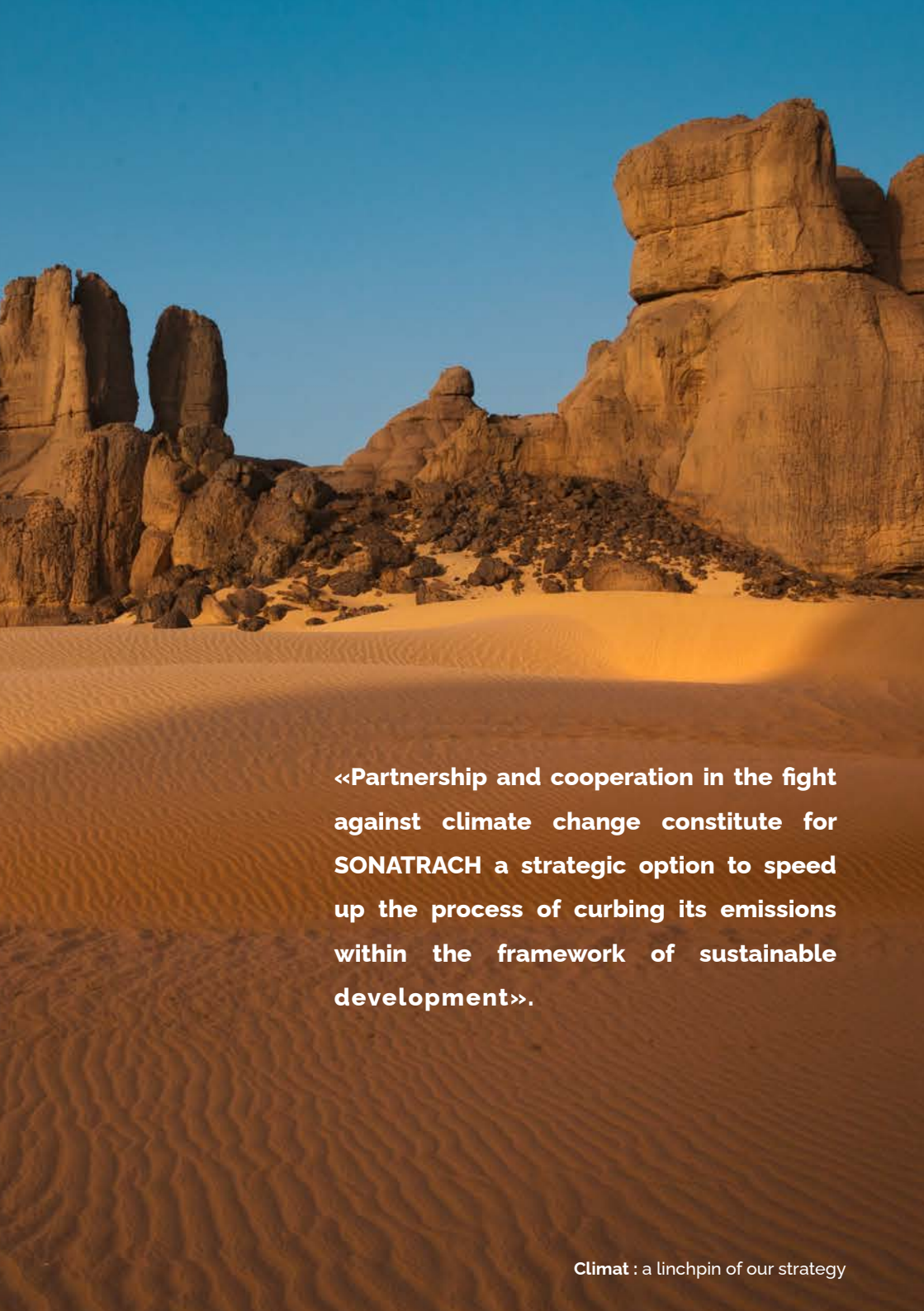


Climat : a linchpin of our strategy

Partnership and cooperation in the fight against climate change constitute for SONATRACH a strategic option to speed up the process of curbing its emissions within the framework of sustainable development.

Many actions have been launched in this matter, both with national institutions , such as the Algerian Space Agency, the General Direction of Forests , Universities and Research Centers, as well as various partners in the field of hydrocarbons in addition to international institutions as part of the global effort to combat climate change.

As such, SONATRACH has initiated several joint programs to reduce GHG emissions, with its partners operating in Algeria, but also exchanges and sharing of experiences are maintained with international organizations , promoting initiatives which SONATRACH has already joined such as the «zero routine flaring by 2030» initiative, launched by the World Bank.

A photograph of a desert landscape. In the foreground, there are sand dunes with distinct ripples. In the background, there are large, layered rock formations or cliffs. The sky is a clear, bright blue. The overall scene is bathed in warm, golden light, suggesting sunrise or sunset.

**«Partnership and cooperation in the fight against climate change constitute for SONATRACH a strategic option to speed up the process of curbing its emissions within the framework of sustainable development».**



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