



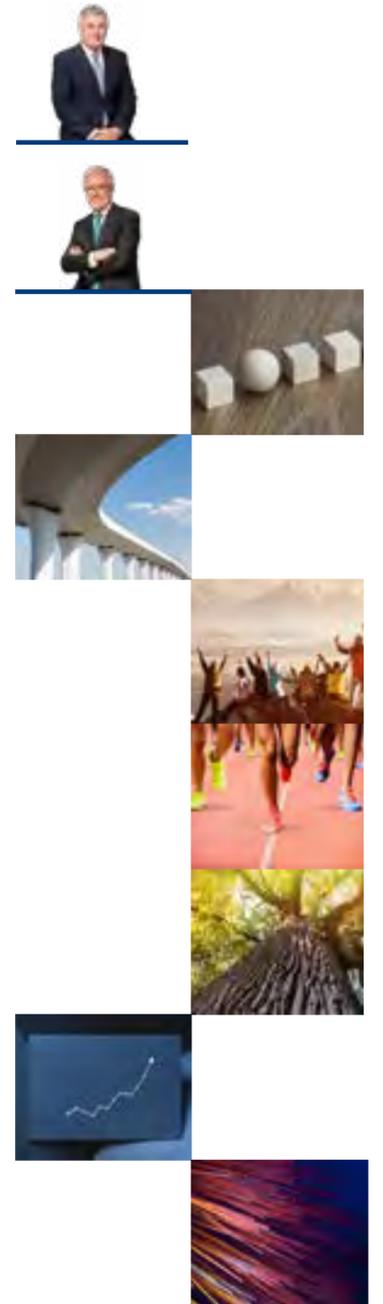
**Annual
report**

2018

GOING THE EXTRA MILE WITH YOU



SENER annual report
2018 video



01

President's letter



Jorge Sendagorta Gomendio, President of SENER Group.

In 2018, the significant transformation of SENER defined at the end of 2017 materialized, at which time the sale of our ITP aviation engine division took place.

We will continue to transform and adapt SENER to better serve our clients and the community every day by developing engineering solutions that are always advanced, accurate and efficient. And we will also respond decisively to the commitment, drive and vocation of our shareholders, managers and professionals.

Firstly, the Group structure was remodeled, separating its aerospace activities from the subsidiary SENER Ingeniería y Sistemas. In parallel, the acquisition of TRYO was completed, an important Spanish group with a long tradition in Space, Communications and Defense equipment and systems. Both units have been regrouped into one, which will soon become the new

SENER Aeroespacial subsidiary of our Group. This operation creates strong commercial, technological, operational and scale synergies, in addition to enabling the immediate and significant growth of SENER through a state-of-the-art aerospace industry.

We have made significant changes to the governance and management of the SENER Group, which have been adapted to that agreed by the shareholders and also to new business realities. The agreements and statutory changes adopted at the General Shareholders' Meeting of 21/12/2017 have been perfected through a thorough review of the company's corporate governance system, which has been led by its Board of Directors. Moreover, the shareholders have also adapted the rules of the familial governance of the Group, replacing the previous Family Protocol with a new Family Constitution. The company and the family-owned business are reinforced by these actions, which renew everyone's firm commitment to the SENER project and, at the same time, improve and modernize its governance and control, strengthening its institutionalization.

01

President's
letter

The talent and training of our people, the balance of operational risks, SENER's growth in size and profitability, our commercial development in increasingly more geographical areas and the contribution of value through digitization solutions are all key references.

One of the most noteworthy innovations within this chapter of updating corporate governance has been separating the functions of President and CEO, which were previously a single role. The Board of Directors appointed Jorge Unda Malcorra as the new CEO and, simultaneously, Jorge Sendagorta Cudós and José Julián Echevarría Aguirre, respectively, as General Managers of the two subsidiaries, SENER Ingeniería, and SENER Aeroespacial. Other changes and appointments are underway to complete the executive team that will plan the new future of SENER under the supervision of its Board of Directors.

During 2018 and the first few months of 2019, this new management team has been conducting an in-depth review of each of SENER's business strategies as well as of the Group's joint strategy. During this process, the talent and training of our people, the balance of operational risks (an area in which a great deal of progress has already been made in the last three years), SENER's growth in size and profitability, our commercial development in increasingly more geographical areas and the contribution of value through digitization solutions are all key references.

We will continue to transform and adapt SENER to better serve our clients and the community every day by developing engineering solutions that are always advanced, accurate and efficient. And we will also respond decisively to the commitment, drive and vocation of our shareholders, managers and professionals.



Jorge Sendagorta Gomendio
President of SENER Group

02

CEO's letter



Jorge Unda Malcorra, CEO of SENER Group.

2018 was a year of changes at SENER. After practically two decades as SENER's top executive, and following the guidelines of the Family Protocol, Jorge Sendagorta Gomendio left his post, although he will still hold the non-executive Presidency of the company. Over this period, under his leadership, SENER has grown bigger but, above all, it has improved. If we look back to when he took up the reins, review the SENER of back then, and compare it with the SENER of today, we can appreciate this transformation and the sheer magnitude of his legacy. Those of us who take up the baton are extremely grateful, and both enthusiastic about and overwhelmed by the challenge of making SENER even better.

Among the latest advances of 2018, special mention should be made of the corporate reorganization, which will formally culminate, in mid-2019, with the division of SENER Ingeniería y Sistemas into two companies: SENER Ingeniería and SENER Aeroespacial. This report includes SENER's activity prior to this corporate split. In mid-2018, SENER acquired the group TRYO, a significant player in the on-board satellite telecommunication equipment sector, the

financial statements of which, in line with accounting regulations, are included in this report. Additionally, in the third quarter of the last financial year, we embarked on a strategic review that will conclude in 2019.

We are currently enjoying a good cash situation which, coupled with the enormous potential of our people, will enable us to once again reinvent SENER, and to continue to make investments that will lead us to even more prominent positions within the engineering sector.

In 2018, the geopolitical and international trade uncertainties continued unabated, as did the fall in oil and commodity prices throughout most of the year. The energy transition towards renewable generation gathered pace, limiting investments in fossil fuel-based energy infrastructure, including those of natural gas, but speeding up those based on renewable energies, where new opportunities have been opened up. In transport infrastructure,

investments held back in some of the principal areas in which we operate—Mexico, Brazil and the Gulf countries—either owing to their being in an election year, or because their economies had been hit by the low prices of their raw material exports. In the aerospace sector, expectation of the deployment of new concepts of satellite constellations has slowed down investment decisions in new communications satellites, only temporarily we hope. Spain, on the other hand, is

We face the unique and exciting challenge of developing SENNER, of making SENNER even better. SENNER is all about team work.

showing signs of recovering the investment cycle that was halted in its tracks by the crisis. Thus, improvements can be discerned in investments in rail transport infrastructure and urban transport, and expectations of development in renewable energy projects are steadily becoming consolidated.

In 2018, income from the Group's ordinary business was 589.2 million euros, 22.3% down on the previous year. The completion of the major projects in Power, Oil, Gas and Renewables contracted in 2015, and not replaced by new large contracts, has given rise to this effect. On the other hand, pre-tax profits from continuing operations totaled 29.2 million euros, 27.7% up on 2017, reflecting the results of the improvement in operations and in the management of risks implemented in recent years. Furthermore, this last figure paves the way towards recovering healthy profitability ratios, necessary to ensure SENNER's continuity and growth in the medium and long term. Regarding the number of employees at year end, the figure of 2,308 has been reached. Here, it is only fair to acknowledge the excellent work, efforts and, above all, the commitment of the people who make up SENNER. They make the difficult, complex and exciting projects that we deliver to our clients possible. In short, SENNER can only go as far as its people can take it.

SENER's vocation, reflected in the wording of its Mission as "a reference for its firm commitment to excellence in engineering and innovation," entails concerted efforts in investment in R&D, in innovation to safeguard our position as a benchmark in several specialties, and which identifies and opens up new positions. This eagerness to explore new fields and spot new technical solutions is SENNER's most recognizable hallmark. Thus, in 2018, investment in R&D totaled 21.2 million euros.

Particularly noteworthy in the investment chapter was the acquisition of 100% of the TRYO Group, focused on the design and manufacture of radio frequency communications equipment (products it sells in several markets), and in which on-board satellite equipment is the most salient and the one with the greatest projection. The complementarity of its products and markets with SENNER will provide significant synergies that will add value to our entire aerospace activity. While the operational integration of

02

CEO's letter

TRYO within SENER Ingeniería y Sistemas was conducted in 2018, it will be in 2019 when this comes about with SENER Aeroespacial.

Throughout the financial year, 22% of sales were in Spain, a higher percentage than the previous year, which, on the one hand, confirms the recovery of activity levels in the country; on the other, it demonstrates the global nature of SENER's activity, in which our presence in Mexico, and in solar energy projects in Morocco and South Africa, among others, is especially relevant.

The complexity of the environment I describe in the third paragraph of this report was reflected, in particular, in the recruitment difficulties experienced over the year in Power, Oil, Gas and Renewables. In this sphere, the major challenge for 2019 focuses on achieving recruitment that will enable us to return to levels of activity similar to those of previous years. Our technological differentiation, the

SENER's vocation, reflected in the wording of its Mission as "a reference for its firm commitment to excellence in engineering and innovation," entails concerted efforts in investment in R&D, in innovation to safeguard our position as a benchmark.

opportunities that arise and the resolve of our people in business development and project implementation will no doubt allow us to exceed this target. Moving on to other issues, we are currently enjoying a good cash situation which, coupled with the enormous potential of our people, will enable us to once again reinvent SENER, and to continue to make investments that will lead us to even more prominent positions within the engineering sector. We face the unique and exciting challenge of developing

SENER, of making SENER even better. SENER is all about team work. Every single day, I am still amazed by the strength of our people, their passion for engineering, and their commitment to a job well done. All of this within a shared culture, a way of doing things that sets us apart and which is the foundation upon which, from day to day, we build our future.



Jorge Unda Malcorra
CEO of SENER Group

03

A look
through
2018



EVOLUTION AS AN OBJECTIVE

3.1

A look through 2018

MAIN FIGURES

Thousand euros

	2018	2017	%
Revenue	589,190	758,253	-22.3
EBITDA	26,237	21,417	22.5
Net profit	21,640	459,121	-95.3
Non current assets	278,022	213,774	30.1
Total assets	967,327	1,062,863	-9
R&D&I Investment	21,170	25,355	-16.5

Staff

	2018	2017	%
Staff (year average)	2,251	2,241	0.4
Staff (year end)	2,308	2,208	4.5

In 2018, SENER's EBITDA grew by 22,5% and the EBITDA/sales ratio increased by 60%

3.1

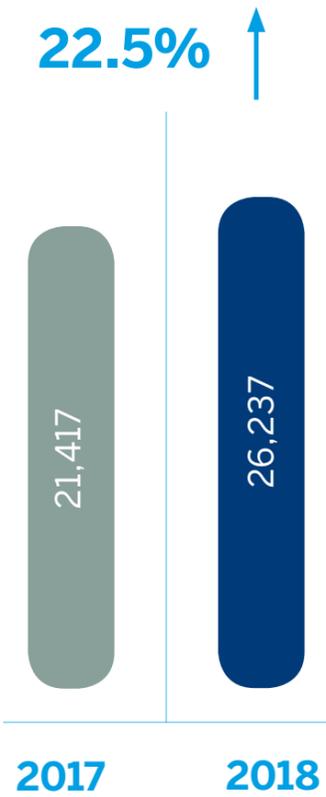
A look through 2018

MAIN FIGURES

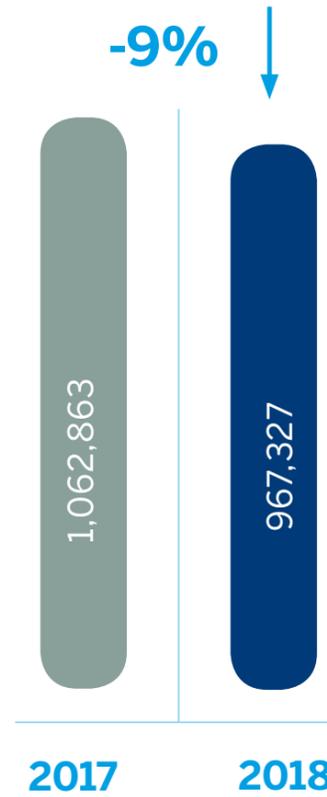
Revenue
Thousand euros



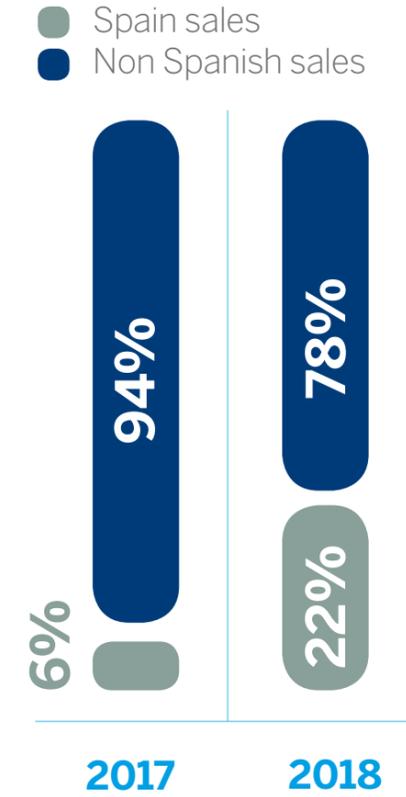
EBITDA
Thousand euros



Total assets
Thousand euros



Revenues by geography



MAIN EVENTS



Jorge Sendagorta, President of SENER, attended the official reception to the Saudi Crown Prince organized by the Spanish Royal House. © Casa de S.M. el Rey.

January

Enrique de Sendagorta Aramburu, founder of SENER, died at the age of 93.

The joint venture formed by SENER and Babcock España was awarded CT2 certification from INTA for the Spanish Navy's AB-212 helicopter modernization program.

February

SENER redefined its Mission, Values and Vision through a reinvigorated business ideology that also acts as the cornerstone of the company's strategy and code of conduct for its employees.

SENER signed up to the Luxembourg Declaration, committing to raise awareness of and promote health in the workplace.

March

The company Torresol Energy, owned 60% by SENER and 40% by Masdar, commemorated its tenth anniversary since its founding in 2008.

April

SENER launches the Chair of Aerospace Studies with Carlos III University of Madrid (Spain) to kick-start initiatives between the university and the company.

Jorge Sendagorta, President of SENER, attended the reception organized by the Spanish Royal House to mark the visit of the Saudi Crown Prince Mohammed Bin Salman to Spain.

3.2

A look through 2018



Jorge Unda (center), CEO of the SENER group, together with the General Managers of SENER Aeroespacial, José Julián Echevarría (left) and SENER Ingeniería, Jorge Sendagorta Cudós (right).

May

Through its corporate projects and initiatives, SENER aligned itself with the Sustainable Development Goals promoted by the United Nations.

SENER participated in the mobility study conducted in Morocco for the urban mobility reflection congress promoted by the local association Casa Smart Moov, which was attended by members of the regional government and Moroccan transport institutions.

Jorge Unda was appointed CEO of the SENER Group after more than 30 years working his way up through the company, about twenty of which as Managing Director of SENER.

Once again, SENER in Mexico appears on the list of Expansión magazine's Super Companies 2018, which recognizes firms that show outstanding commitment to talent development.

June

To mark the 25th anniversary of the opening of the first SENER office in Catalonia, the company organized an Open Day.

In Mexico, SENER attended the celebrations marking the completion of the tunnel for the right-hand line of the Mexico-Toluca intercity train, and the completion of the urban tunnel on line 3 of the Guadalajara metro.

3.2

A look through 2018



Official signature of the acquisition of the TRYO Aerospace & Electronics Group by SENER.

SENER formalized the purchase of the TRYO Aerospace & Electronics Group from a private capital fund to reinforce its technological capabilities. From this reorganization, José Julián Echevarría was named General Manager of the entire new Aerospace area.

July

Jorge Sendagorta, Doctor of Naval Architecture and President of SENER, was appointed Honorary Member of the Association of Naval Architects and Marine Engineers (COIN).

SENER celebrated the official delivery of the one thousandth unit of the Meteor missile fin actuation subsystem to MBDA UK in a commemorative event attended by the General of the Spanish Air Force Division, Salvador Álvarez.

The Board of Trustees of the SENER Foundation appointed Andrés Sendagorta, Vicepresident of SENER, as President of the SENER Foundation.

August

SENER was again in attendance at the annual ranking of the specialized journal ENR (Engineering News-Record), where it ranked 48th among the top 225 international engineering design companies, eighth in Latin America and fourth in Africa.

September

SENER's offices all over the world committed to Sustainable Development Goal number 12 on responsible production and consumption through the environmental care campaign.

3.2

A look through 2018



SENER's tenth anniversary event in the USA with the attendance of local guests.

October

Jorge Unda, CEO of SENER, received the Technological Revolution award from the Vodafone Deia Innovation Sariak Awards, in recognition of SENER's contribution and commitment to innovation throughout its history.

BepiColombo, the first joint mission of the European Space Agency and the Japan Aerospace Exploration Agency (JAXA) to the planet Mercury and in which SENER played a prominent role, was successfully launched into space.

November

SENER commemorated its tenth anniversary in the USA with an event headed by its Country Manager, Mercedes Sierra.

Jorge Sendagorta, President of SENER, was awarded the Honorary Member's Medal from the Spanish Institute of Engineering for his professional contribution.

The thermal vacuum chamber number 1, installed in Madrid in 2014 and first used to test BepiColombo, completed its hundredth mission with the tests performed on Meteosat Third Generation (MTG).

December

SENER presented the award for the Best End-of-Master's Project at the Technical School of Marine Engineers of the Technical University of Madrid (UPM) for the design of a military vessel with SENER's FORAN software.

3.3

A look
through
2018

2018, A RECORD YEAR FOR SENER IN CONCENTRATED SOLAR POWER (CSP)



Aerial view of the Kathu solar thermal power plant (South Africa).

January

The Noor Ouarzazate II solar thermal power plant (Morocco), which generates 200 MW of power and is equipped with SENERtrough[®]-2 cylindrical-parabolic collectors, successfully connected to the Moroccan electricity grid.

February

The Kathu solar thermal power plant (South Africa), which generates 100 MW of power, successfully connected to the South African grid.

March

In Noor Ouarzazate III, which generates 150 MW of power and boasts central tower technology, a new training program was launched by SENER, in collaboration with the OFPPT (the Moroccan office for vocational training and the promotion of work) and the Moroccan Agency For Sustainable Energy (Masen).

May

The Noor Ouarzazate solar complex, the largest in the world, was visited by the SENER Board of Directors, and in Noor Ouarzazate III, the top of the 250 m tower was successfully hit from the solar park composed of 7,400 heliostats.



550 MW OF CLEAN ENERGY PUT INTO OPERATION

3.3

A look through 2018



Noor Ouarzazate III solar thermal power plant with central receiver technology and molten salt storage system.

June

The Operation and Maintenance course of the thermosolar power plant of Ilanga-1 (South Africa), with a capacity of 100 MW, began.

July

Noor Ouarzazate III generated its first steam, a milestone of special relevance that triggered the hot start-up of the water-steam cycle.

August

Noor Ouarzazate III connected to the Moroccan electricity grid and supplied the first megawatts.

The training course given to the operators of the South African Ilanga-1 power plant concluded.

September

The process of melting salts at the Kathu solar plant concluded with two records: an average of 865 tons of molten salts per day and more than 1,000 tons of salts melted in a single day.

October

SENER passed the reliability tests at Noor Ouarzazate III for ten consecutive days, during which it exported an energy supply equivalent to the consumption of 108,000 homes to the grid.

November

Kathu Solar Park, a project in consortium with Acciona Industrial, was synchronized with the South African electricity grid.

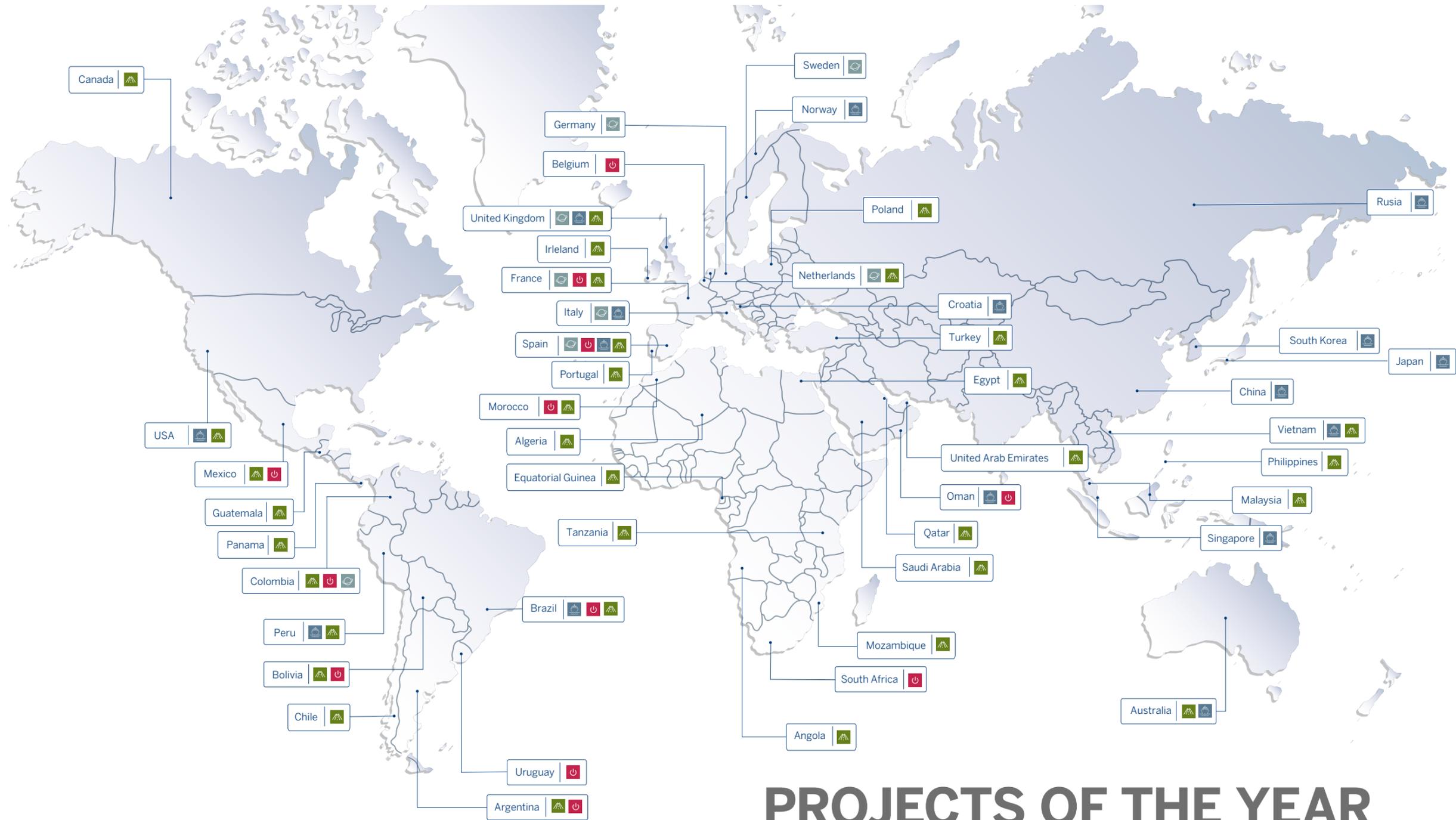
SENER, Emvelo and Cobra, partners in the turnkey consortium of the Ilanga-1 thermosolar power plant, secured the certificate to start commercial operation.



MORE THAN **1 BILLION EUROS** INVESTED IN
THERMOSOLAR PROJECTS

3.4

A look through 2018



PROJECTS OF THE YEAR

 Aerospace	 Infrastructure	 Energy	 Marine
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04

A
company
of value

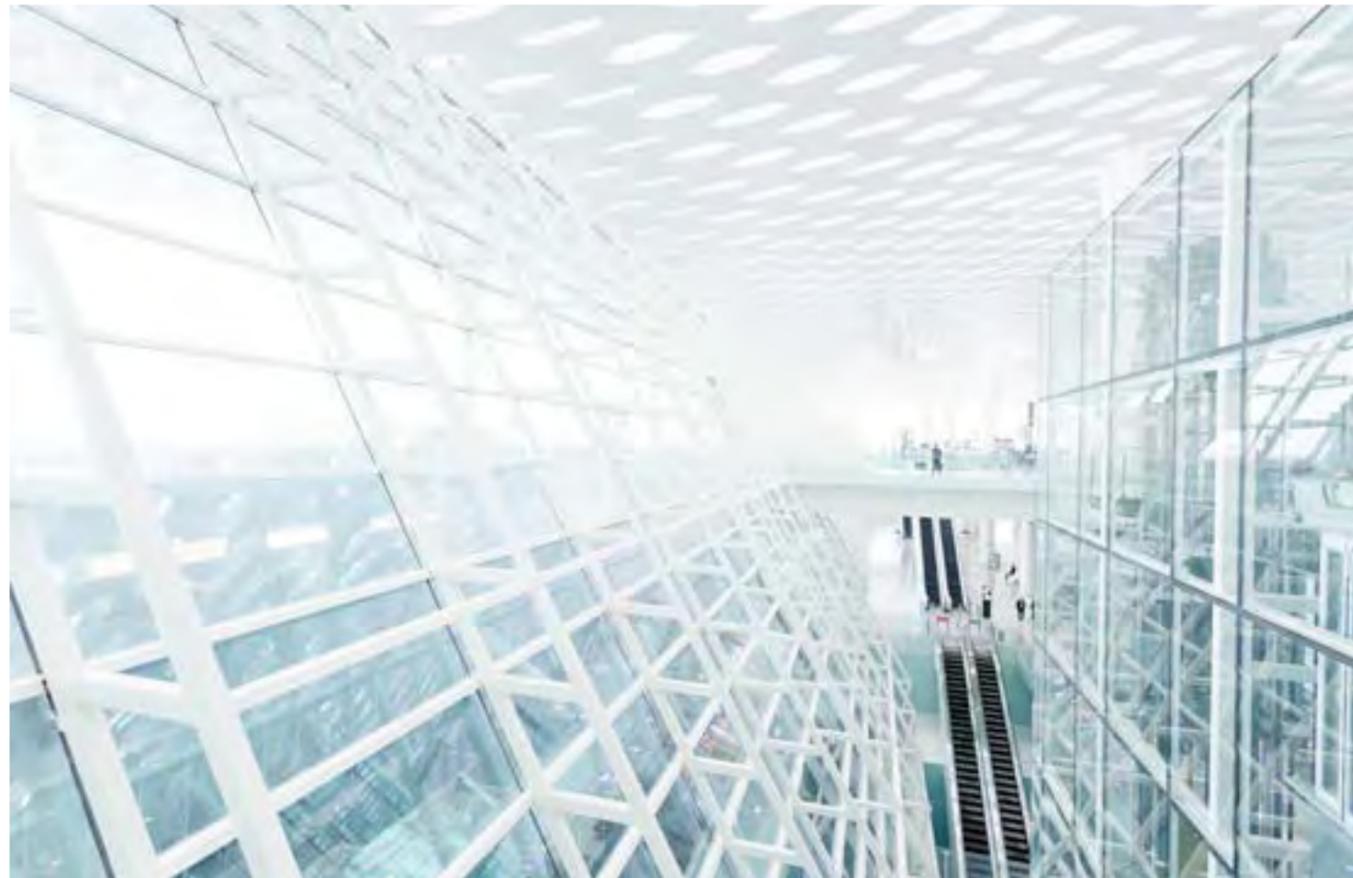


PROJECTING THE FUTURE

4.1

A
company
of value

SHARE OWNERSHIP STRUCTURES



Number and type
of shares

€34,448,299.60

Issued and paid-in capital

830,680

registered shares

€41.47

nominal value/share

List of shareholders

December 31st 2018

100%

of the **SENER Grupo de Ingeniería, S.A.**
shares belong to the family founder.

There has been no variation with
respect to 2017.

BOARD OF DIRECTORS



Board of Directors of SENER Group.

Composition of the Board of Directors

President
Jorge Sendagorta Gomendio (6)

Directors
Luis Barallat Sendagorta (2)
Jordi Canals Margalef (7)
José Galíndez Zubiria (1)
Juan Gich Roldán (5)
Enrique Sendagorta Gomendio (9)
Andrés Sendagorta McDonnell (4)
Álvaro Videgain Muro (3)
Jorge Unda Malcorra (8)

Secretary (non-Director)
Ignacio Guerra Gimeno (10)

The term of office at the Board of Directors is four years, and the next re-elections will be held on the following dates:

June 26th 2019 Álvaro Videgain Muro

June 24th 2020 Jorge Sendagorta Gomendio, Andrés Sendagorta McDonnell, Enrique Sendagorta Gomendio and Luis Barallat Sendagorta

May 16th 2022 Jorge Unda Malcorra

June 29th 2022 Juan Gich Roldán and José Galíndez Zubiria

October 1st 2022 Jordi Canals Margalef

COMMISSIONS



Commission of Audit,
Risk Supervision and
Compliance

Juan Gich Roldán
Jorge Sendagorta Gomendio
Álvaro Videgain Muro



Commission of
Appointments and
Remunerations

Enrique Sendagorta Gomendio
Jorge Sendagorta Gomendio
Andrés Sendagorta McDonnell
Álvaro Videgain Muro
Jordi Canals Margalef



Commission
of Investment

Luis Barallat Sendagorta
Juan Gich Roldán
José Galíndez Zubiria



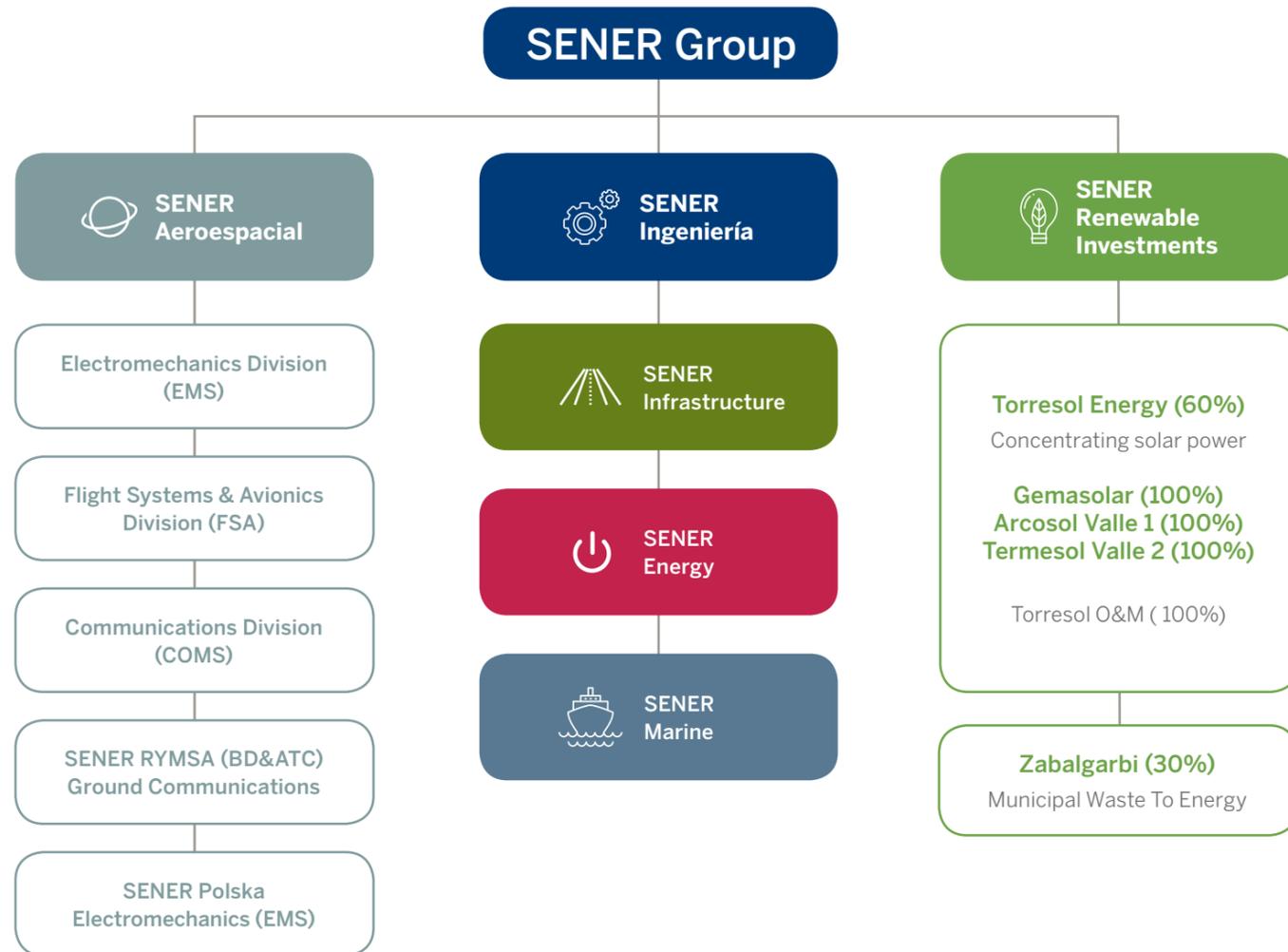
Commission of
Corporate Identity
and Corporate Social
Responsibility

Andrés Sendagorta McDonnell
Enrique Sendagorta Gomendio
Jordi Canals Margalef

4.2

A company of value

STRUCTURE



The organization as a whole went through a profound change last year based on a project that sparked afresh our vocation of developing the most industrial aspect of the group, primarily focusing on engineering.

When Jorge Unda, previously the Managing Director and a member of the company for 30 years, was appointed Chief Executive Officer (CEO) of the SENER Group in 2018, he immediately made several far-reaching decisions.

On the one hand, this led to the restructuring of the Group in order to accommodate the industrial project motivated by the acquisition of TRYO Aerospace & Electronics, a group comprising both TRYO Aerospace Flight Segment and RYMSA RF. Through this acquisition, SENER was gradually able to exceed its expectations and

take advantage of the complementary activity lines, products, markets and technologies, enhancing its role in complex Space and Defense systems.

On the other hand, with TRYO becoming part of SENER Aeroespacial and the split of SENER Ingeniería, the Group's corporate structure, as it was before the sale of ITP in 2016, now consists of three areas. The two mentioned above and Renewable Investments, to promote industrial initiatives in energy, the environment and renewables that are synergistic with SENER Ingeniería.

Due to this reorganization, two new General Managers were appointed, José Julián Echevarría for SENER Aeroespacial, and Jorge Sendagorta Cudós for SENER Ingeniería, which brings together the Infrastructure, Energy and Marine businesses.

4.2

A
company
of value

STRUCTURE



Beyond the purely business side of things, the incorporation of the third Sendagorta generation as corporate shareholders, with an increase in the number of members, made it essential to review the current Family Protocol, which has regulated the formal link between the company and the family since 2004. This gave rise to a new document, called the Family Constitution, which affects, among other aspects, the shareholder rather than familial status of its members, which has unequivocally institutionalized the relationship between the family and the company. This year also saw the completion of the SENER Mission, Values and Vision document.

The SENER Group is a world leader in engineering that has achieved international recognition through its skills, specialties and technologically differentiated products. SENER's multidisciplinary character and culture of excellence requires constant evolution in which innovation and the most talented professionals are key for growth and competitiveness.

BEST PRACTICES



- SENER Crime Prevention and Detection Models advanced towards maturity. As a result of the review of the general and specific controls requested from an independent third party by the Criminal Compliance Body of the Group, the monitoring, supervision and reporting on these controls was strengthened with the incorporation of a professional specialized in Compliance.
- The Criminal Compliance Body of the Group decided to provide a criminal offense prevention model to companies of the TRYO Group after formalization of the acquisition by SENER.
- In the international arena, SENER designed and implemented a crime prevention model in Mexico, aligned with the local regulatory framework, which provides adequate coverage and response to the Group's companies operating in that country.
- SENER kept its complaints channel open and operational to facilitate communication and prevention of any breach of the Code of Conduct or potential criminal offense. During the past year, three complaints were received that were not classified as relevant or serious.

| AEROSPACE



Solar Orbiter High Gain Antenna Gimbal (HGAG).

SENER's acquisition of the TRYO Aerospace & Electronics group accounted for a large part of the company's operations of the last financial year, with the onset of a complicated process of integration, restructuring and greater mutual knowledge by both parties. This was embarked upon both to take advantage of complementary skills, as well as to continue to take strides towards an industrial model that is increasingly product-based, a path along which SENER has already made significant progress thanks to the work undertaken in recent years.

The results achieved at the end of the financial year in Defense, especially in contracts for actuation and control systems, and in Space, with an institutional market that is highly dependent on the Inter-ministerial Meeting scheduled for the end of 2019, and a commercial market in which a

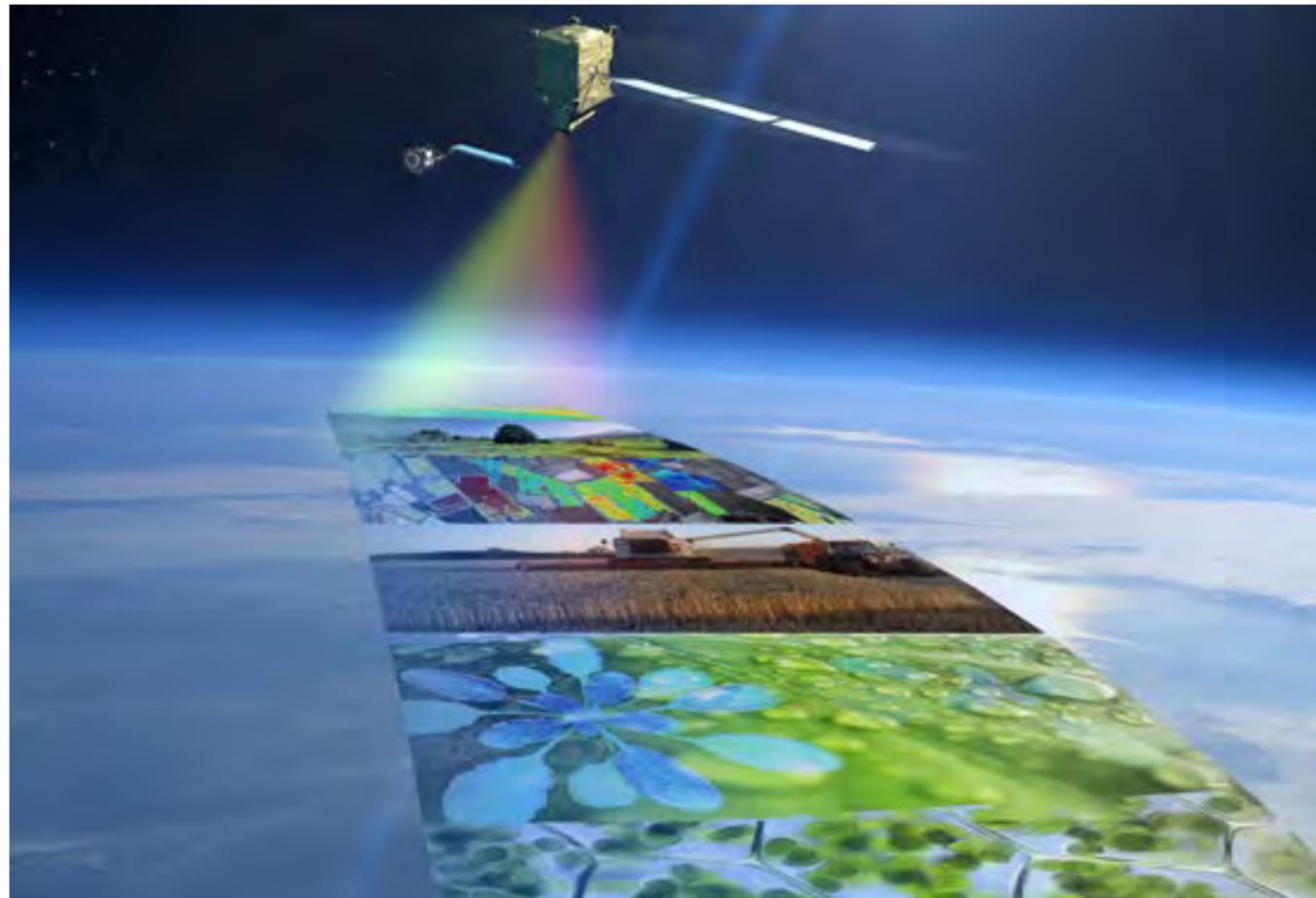
significant number of opportunities are set to arise, have led to the Aerospace business setting ambitious growth targets.

The consolidation of all Space activities, the strengthening of our division in Poland, the significant push that is expected to materialize from the Defense wing, and SENER's entry into the largest satellite constellations are just some of the upcoming major challenges for SENER Aeroespacial to overcome.

In Space

- SENER signed a contract to supply the pointing mechanism of the High Gain Antenna Gimbal (HGAG) to be installed on the new Mars 2020 spacecraft for NASA's future Mars exploration mission.

| AEROSPACE



Artistic recreation of FLEX concept ©ESA.

- The European Space Agency (ESA) appointed SENER to develop the Instrument Optical Module Structure (IOMS) for the main instrument on the FLEX satellite.
- For the e.Deorbit mission, ESA selected the solution proposed by the consortium led by Airbus, to which SENER belongs. The clamping mechanism designed by SENER will facilitate the removal of the inactive Envisat satellite from the Earth's orbit.
- SENER was awarded a contract to supply the devices for assembly of the Biomass satellite structure, which aims to gather scientific information about the environmental parameters of the Earth.
- The Spanish Ministry of Economy, Industry and Competitiveness commissioned SENER to develop a photon detection device for the WSO/UV space telescope, which will make it possible to obtain extremely high-temporal resolution images with elevated sensitivity in the far ultraviolet range (115–180 nm).
- SENER signed a contract with ESA as part of the Innovation Triangle Initiative to validate the use of lower mass feed horns in space applications.
- SENER entered into a contract with Thales Alenia Space to design 32 V-band couplers for the Eutelsat Konnect VHTS (Very High Throughput Satellite), with the aim of bringing high-speed broadband to every corner of Europe.

 | **AEROSPACE**



Band feed horn antenna assembly, in aluminium alloy, during random vibration test.



Artistic recreation of Gateway, a permanent space station orbiting the Moon ©NASA.

- As part of the Gateway project, SENER secured five contracts that include the definition of elements for robotic arms installed inside the habitation module; the design of the communication antenna and various components of the robotic arm in the non-pressurized module; the design of the interior structures and external hatches of the habitation module; design of the structure, mechanisms and thermal control of the lunar landing vehicle; the conception of the docking and berthing mechanisms between the different modules; and the development of the S-band deployable antenna integrated into the lunar ascent module.
- SENER delivered to Airbus Defense & Space the high-gain antenna for the Solar Orbiter mission, in which SENER is responsible for the design, development and validation of the complete antenna subsystem.
- SENER successfully completed the qualification and delivery of the first pre-production units of the high-torque DTA-1201 rotary actuator for the Eurostar Neo telecommunications platform within the NEOSAT (Next Generation Platform) program of the European Space Agency (ESA).
- In 2018, a total of nine satellites were launched with on-board SENER equipment, including the Metop-C and BepiColombo mission satellites and the Iridium, O3B and OneWeb constellations.

| AEROSPACE



General view of a new AB-212 helicopter's glass cockpit.

In Defense

- The South Korean air forces expanded the order for Taurus KEPD 350K missiles. SENER was commissioned to produce new units of the Fin Actuation Subsystem (FASS) and new units of the Ground Loading Unit (GLU).
- MBDA awarded SENER a contract for the industrialization and implementation of the production line for the CAMM missile's Control Actuator System (CAS) in the SeaCeptor system.
- SENER and its partner, Babcock España, delivered the seventh upgraded AB-212 helicopter to the Spanish Ministry of Defense, as part of the life extension program of these aircraft.
- SENER and General Atomics strengthened their commercial relationship, thanks to the signing of a new contract.

In Broadcasting

- In Spain, SENER signed a contract for the upgrading of five ultra high frequency (UHF) radiant systems of the Spanish digital terrestrial television (DTT) network in the centers of Arguis, Inoges, Monreal, La Muela and Torrespaña.

In Aeronautics and Vehicles

- SENER provided acoustic consultancy services for the coach manufacturer Irizar, helping to reduce noise by more than 3 dBA in several units, including the i8 model, proclaimed "Coach of the Year 2018".

INFRASTRUCTURE



Montreal metropolitan light rail electric network (Canada) ©REM.

For another year running, SENER has met its target of increasing the number of projects in regions where it has a permanent base.

In the first instance, SENER continued the work on the contracts awarded for the Guadalajara metro line 3, the Mexico City-Toluca intercity train, the London-Birmingham HS2 train line (United Kingdom), and the Los Angeles to San Francisco high speed train line (United States). In addition, SENER added to its portfolio with new, important contracts in Brazil, with the Fortaleza metro executive project, in Canada, with the Finch light-rail facilities executive project, as well as the conduct of Independent Checking Engineer services for the light-rail network in Montreal, and in Panama, with the conceptual design of the light-rail network of the country's capital. What is more, with the awarding of its first contracts in Australia,

Colombia, the GCC and the entire Andean region, SENER continued to generate new opportunities. Based on this geographical diversification, the results obtained reinforced the expansion of the business in water, ports, airports and roads.

In addition to the strategic goal of internationalization, in 2018 SENER continued to offer the market a range of technologically unique products.

In Urban Transport

- In Canada, SENER was awarded the contract for the execution of Independent Checking Engineer (ICE) services and authorized technical approval body (OCTA in French) services for the future metropolitan electric light-rail network in Montreal (Canada).



INFRASTRUCTURE



View of an elevated station of the Guadalajara metro line 3 (Mexico).

- In Mexico, on line 3 of the Guadalajara metro, SENER completed the urban tunnel with an excavation diameter of 11.55 m and measuring 4,007 m in length, which runs through the historic center of the city.
- In Panama, SENER submitted tenders for the three lines: extension of line 1, extension of line 2 and tender of line 3, in Panama city.
- In Brazil, SENER is playing a key role in the detailed design of the Fortaleza metro. The project comprises 7.3 km of tunnel, 6 of which will be excavated by tunnel boring machines, as well as four underground stations (Central Chico da Silva, Colegio Militar, Nunes Valente and Papicú) and one overground station (Tirol-Moura Brasil).
- In Europe, the most significant projects were: the Bilbao metro line 4 construction project; line 9 of the Barcelona metro; the Porto metro, for which SENER is carrying out detailed engineering work on the stretch between Boavista/Casa da Música and Praça da Liberdade, and which will run underground for 2.8 km and comprise four stations, three of them intermodal; and, in the United Kingdom, the development of the Edinburgh tram extension.
- In Qatar, SENER has continued its Independent Checking Engineer (ICE) services of the Lusail tram network and its Doha metro projects (Red Line, Green Line and Depots).
- In Saudi Arabia, SENER has proceeded with its Independent Checking Engineer (ICE) services of lines 4, 5 and 6 of the Riyadh metro. The contract includes the construction of 64.5 km of subway tracks, 33 km of viaducts, 22 km of underground tracks and 9 km of overground tracks.



INFRASTRUCTURE



Improvement projects in the electrification and signaling of conventional rail lines (Spain).



In Highways

- In Brazil, SENER was awarded the conceptual design and the executive project for the restoration and improvement of the 23 km long highway SPI 177/342, which connects the cities of Mogi Guaçu and Itapira in the State of São Paulo.
- In Mexico, SENER was awarded the drafting of the executive project for the 6.12 km long Santa Catarina viaduct, in order to complement and improve the highway that links the towns of Saltillo and Monterrey.



In Railways

- The Spanish Ministry of Public Works and Transport awarded SENER the informative studies for the integration of the Spanish high-speed train with the city of Granada and the high-speed rail line between Valencia and Castellón.

- Adif (Administrator of Railway Infrastructure of Spain) awarded SENER the contract to carry out improvement projects in the electrification and signaling of conventional rail lines. In addition, SENER was entrusted with the dynamic supervision of 37 basic and construction projects, in order to ensure compliance with regulations.
- On the Mexico City-Toluca intercity train line, SENER added a new technical support contract to the Ministry of Communications and Transport, during the bidding and hiring process for commercial exploitation, in addition to technical monitoring during the first months of the start-up phase.

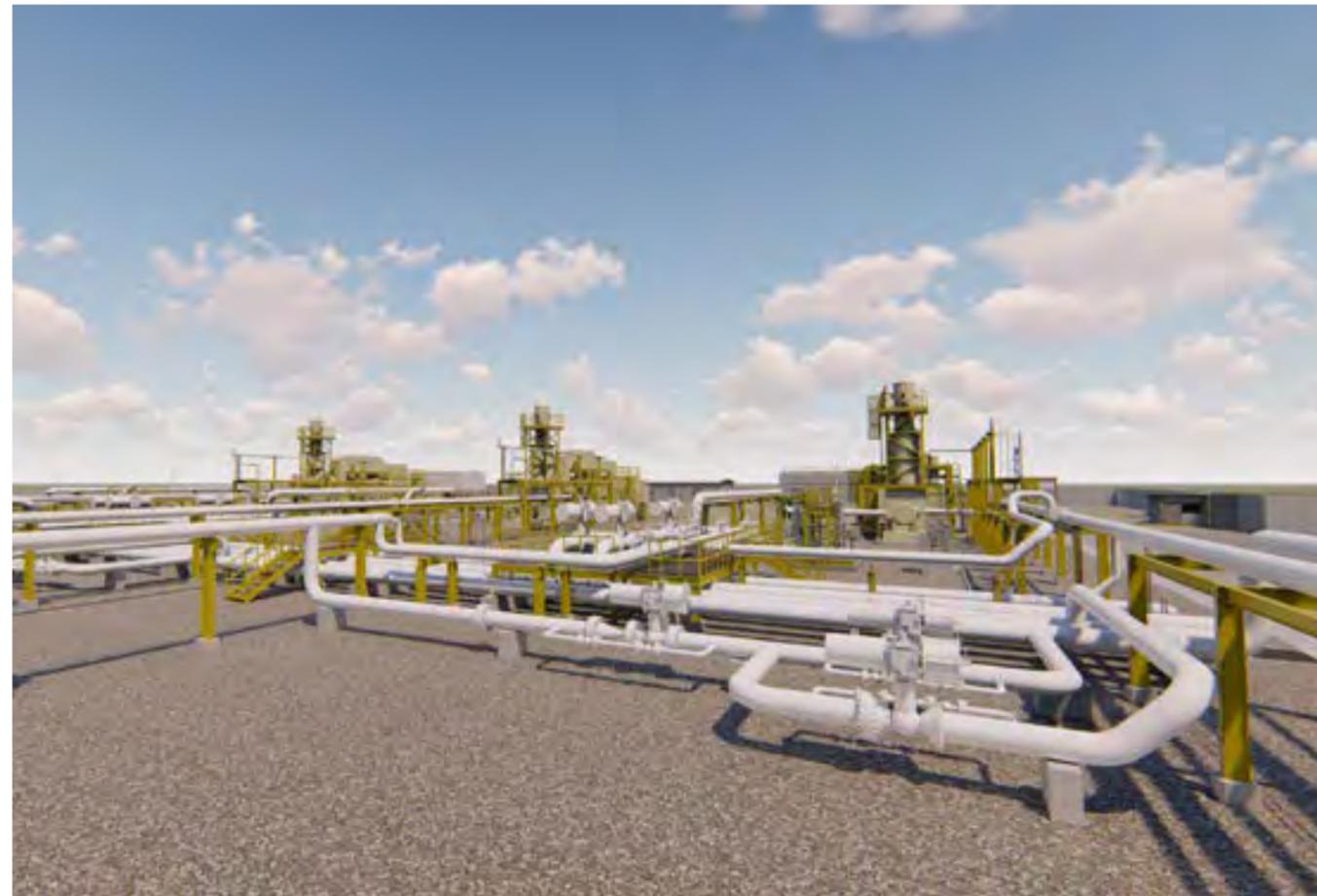
| INFRASTRUCTURE



3D recreation of the future remodeled Dique Sur building at the Barcelona-El Prat airport (Spain).

In Airports

- In Spain, SENER was awarded two new contracts by Aena to project manage and provide technical assistance for the remodeling and expansion project of the Dique Sur building at the Barcelona-El Prat airport; and to project manage and provide technical assistance for the construction management, control and surveillance of the airports of the Aena Batch 5 Eastern Region network.
- The Portuguese airport operator ANA entrusted SENER with the work to improve access to the Humberto Delgado airport.
- SENER implemented the services master plan for the New International Airport in Mexico City.
- Mexico's Ministry of Communications and Transportation awarded SENER the pre-investment studies for the connectivity of the New International Airport for Mexico City (NAICM) complemented by a network of fast buses.



3D animation of the future compression station in Navojoa (Mexico).

ENERGY

The last few years have been hard in general, not least for SENER's Energy business, primarily as a result of changes that the sector has experienced. Despite performing better than expected during the last financial year, one of SENER's greatest challenges is to increase recruitment and undertake key actions in the short and medium term, as identified in the 2017-2019 Strategic Plan, in order to improve our competitiveness and our expertise in the technological diversity that characterizes our business in Renewables, Power and Industrial, and Oil & Gas.

In the short term, aside from offering innovative engineering services and technological packages (as part of our new product approach), some of our prospects will depend on us seizing opportunities

in new areas such as offshore wind power, energy storage or hybridization, or the implementation of fast power projects or floating solutions (power barge).

Furthermore, in 2019, numerous geographical areas where SENER has successfully established itself, including Mexico, Brazil, the rest of the LATAM region, some central European countries and North Africa, seem to have enjoyed a revival.

In Oil & Gas

- In Mexico, SENER signed a contract with Gasoducto de Agua Prieta SA, belonging to IENOVA, for the construction and commissioning of a compressor station in the municipality of Navojoa.



Close-up of the Kathu solar thermal plant's power block (South Africa).

ENERGY

- Similarly, SENER was awarded three contracts with IENOVA for the detailed engineering of liquid fuel storage terminals in Valle de México (Valley of Mexico), Puebla and Veracruz.
- The chemical company Kem One awarded the SENER-Tissot consortium a turnkey contract for the construction of an ethylene storage and regasification terminal in Fos-sur-Mer (France).
- Colombia's National Energy Mining Planning Unit (UPME) awarded SENER the conceptual study of a Liquefied Natural Gas (LNG) plant in the town of Buenaventura, in Colombia.

In Renewables

- In South Africa, the Kathu Solar Park solar thermal power plant, which generates 100 MW of power and features SENERtrough[®]-2 cylindrical-parabolic collectors and a molten salt storage system, successfully synchronized with the South African electricity grid.
- SENER entered into an EPC and O&M contract for the Puertollano biomass plant for the ENCE Group and immediately started work on its implementation.

4.6

A
company
of value



Low-emission biomass power plant in Puertollano (Spain).

ENERGY

- SENER was short-listed to support the development of Iberdrola offshore wind projects in France, Germany and the United Kingdom between 2018 and 2021.
- SENER announced the development of a new family of high-precision solar trackers - SENER PV tracker - for solar plants with photovoltaic technology, to maximize the profitability and yield of these power plants.
- In Morocco, the Noor Ouarzazate II solar thermal power plant, with a capacity of 200 MW and equipped with SENERtrough®-2 cylindrical-parabolic collectors and a molten salt storage system, entered into commercial operation. In addition, Noor Ouarzazate III, with a capacity of 150 MW and boasting central tower technology and molten salt storage, exported more than 13 GWh to the grid in its reliability test.
- The Ilanga-1 solar thermal power plant obtained certification to enter into commercial operation, and was officially handed over to its owner, Karoshoek Solar One (RF) Proprietary Limited.
- Progress has been made in the construction of high-performance, and low-emission biomass electricity generation plants for the ENCE Energía y Celulosa Group in Spain, in Puertollano and Huelva, respectively.



Power block of the Tierra Mojada combined cycle gas power plant in Guadalajara (Mexico).

ENERGY

In Power and Industrial Solutions

- The Gondi Group awarded SENER the turnkey construction of a cogeneration plant to supply its packaging material facilities in Monterrey (Mexico).
- The Tierra Mojada Combined Cycle Society, which is building the Tierra Mojada combined-cycle gas thermal power plant in Guadalajara, Jalisco (Mexico), awarded SENER a contract for the provision of the project's engineering works and services. This project includes connecting the power plant to two conventional outdoor substations and two 400 kV high-voltage lines.
- Work continued at the Empalme I combined-cycle power plant in Sonora (Mexico), which SENER is constructing in consortium with OHL. The start-up tests were successfully completed in 2018, in view of its delivery to the customer in the first quarter of 2019.

4.7

A company of value



Engineering for a 1,200 passenger vessel for Tanzania, the largest one on the African Great Lakes.



MARINE

SENER has contributed to the consolidation of FORAN as a leading system within the field of military shipbuilding where it already enjoyed a position of worldwide prestige, in addition to having increased its use among the new users who were brought on board during 2018. This has also happened in China and Korea, territories in which the Marine business continued to provide quality, as well as close and personalized attention to its local customers. The latest version released, v80r3.0, together with the development of its own concept Astillero 4.0, have helped FORAN to maintain its key role in the digital evolution of the sector.

As far as Marine Engineering is concerned, efforts have continued to be directed at innovative conceptual and basic projects. Of these, ships linked to the transportation of liquefied natural gas are once again worthy of special mention.



In Marine Engineering

- Conceptual and classification engineering of a social action platform ship was developed for the Navy of Peru, for navigation through the Amazon basin and to help supply the populations.
- Basic engineering of a 1,200-passenger ferry for Lake Victoria was started for the Korean company GasEntec. The project is a major challenge because it involves the manufacture and supply of all the elements from Korea, its transfer to Tanzania, and assembly at a local shipyard on Lake Victoria itself.
- The contract was signed and conceptual and basic engineering was started on a liquefied natural gas (LNG) supply solution for the ship operator Panfido. The solution, a combination of storage barge and bunkering, and a tugboat, will operate in the Venetian Lagoon.



Large cruise ship for Fincantieri Group.



MARINE

- SENER has progressed in its large cruise ship classification engineering for Fincantieri (Italy), building on the collaboration already started.
- The conceptual and feasibility study of LNG supply solutions for Gas Natural Fenosa (Naturgy) was carried out.
- An agreement was signed to update plans for the ship Sea Cloud, with a view to its completion in Metalships.
- In China, SENER signed contracts with Beihai Qihang Ship Design Company and the Marine Design & Research Institute of China (MARIC), while expanding existing agreements with Hin lee, WHUT and WSDDI.
- In Russia, an important contract was signed with the technical bureau NAUTIC RUS for the use of FORAN in the design and construction of six 82 m long freezer trawlers, and the versions installed in Ricochet and FORSS Marine were extended and updated.
- In Spain, of particular note was the intensive use of FORAN by Navantia in various ongoing projects, including the recent contract signed by this industrial group with Saudi Arabia for the construction of five corvettes.



In Systems

- SENER signed new contracts in Korea with Geo Shipbuilding and Marine Technology, and with KSE for the use of FORAN in its different marine projects.

 | **MARINE**


The global quality assurance and risk management company DNV GL presented SENER with an Approval in Principle (AiP) Certificate for a LNG-fuelled bunkering vessel.



SENER brought together key FORAN users in the 10th FGROUP.

- In the United Kingdom, existing contracts with BAE Systems Submarines and BAE Systems Naval Ships were extended to meet the increased demand for engineers as their current projects (submarine Dreadnought and frigate T-26) enter critical design phases.
- SENER organized the tenth FORAN global user meeting in order to exchange ideas, present the functionality of the new v80r3.0 version and FORAN's digital strategic commitment, and discuss new development proposals.

05

Driven
by
innovation

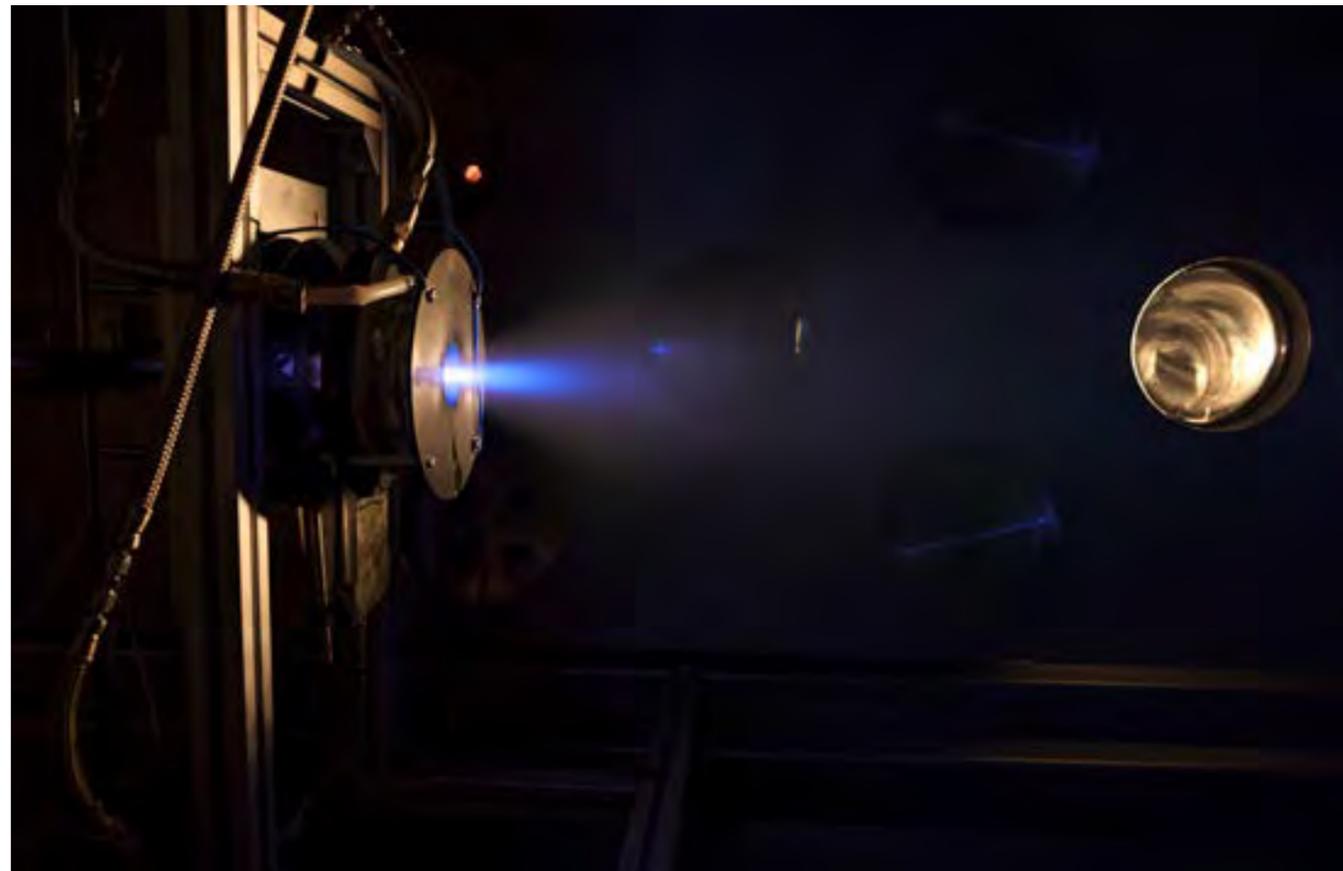


ACCOMPLISHING THE NEXT IMPOSSIBLE

5.1

Driven
by
innovation

VISION OF INNOVATION



New ion engine for the first prototype of the Helicon Plasma Thruster (HPT).

With the hallmark of sustainable innovation inherent in our DNA, we contribute to the balance between economic, environmental and social development.

That sustainability applied to our ability to innovate is undertaken as a cross-cutting strategy in order to offer the best response to the evolution of the market and environmental circumstances.

Innovation drives us and is a source of progress. When it is accompanied by a sustainable commitment, we achieve prosperity.

At SENER we engineer profitable and respectful solutions that solve real problems, enigmas and uncertainties. We invest in ideas and the genius and talent of our people, year after year, results in the development of cutting-edge technology that will distinguish our current evolution as well as our future capacity for innovation.

Our differentiation in the market responds to a culture truly geared towards innovation and smart, long-term and at the service of an increasingly demanding and geographically dispersed customer.

ALLOCATED RESOURCES



FORAN as an integral part of shipyard 4.0. ©SENER.

SENER's commitment to innovation has been renewed once more with the investment of more than 21.2 million euros in R&D.

SENER forged ahead with technological developments for solar thermal power plants already started the previous year, put special emphasis on the reduction of costs in heliostats and molten salt storage systems, in addition to turning its focus towards the development of SENER PV trackers and the digitization of solar plants.

In terms of Infrastructure, the implementation of the BIM (Building Information Modeling) methodology and the development of new concepts for stations of the future continued.

In the Aerospace field, progress was made in the research of new propulsion systems for satellites, as well as for different motor configurations with their own design for action mechanisms in space such as the NEReA non-explosive release actuator.

In the Marine domain, dedication to digitization has been intensified through the development of Shipyard 4.0.

OUTSTANDING PROGRAMS

| AEROESPACIAL



Hybrid actuator prototype. | NEReA non-explosive release actuator.



Hybrid actuator prototype for the rapid guiding movement and alignment of secondary mirrors in large ground-based telescopes. This development is based on a conventional electromechanical actuator to perform the alignment with and over a large range, in addition to another electric piece that provides the rapid movement.

Progress in the development of a **COMINT** (communications intelligence) VHF/UHF direction finder and the evolution, in these same bands, of the COMINT monitoring and classification receiver. This equipment provides SENER with the ability to deliver complete COMINT electronic warfare systems using national technology.

Development of a **NEReA non-explosive release actuator**. Based on fuse wire technology and resettable by the user, the device is aimed at the aerospace market for applications to release launcher loads, for the anchoring and subsequent release of antennas and scanning and calibration mechanisms and, in general, that is designed to be applied for the release of appendages positioned on external satellite panels.

Within the **framework of the European Horizon's 2020 SIROM program**, the development of the **new ion engine for the first prototype of the Helicon Plasma Thruster (HPT)** continued, for improving performance in a power range of 300 to 400 W, as well as work on the standard module for coupling structures in space that enables their mechanical, electrical, communications and thermal interconnections..

OUTSTANDING PROGRAMS | INFRASTRUCTURE



Application of the RAMS methodology in a water treatment plant.

Conduct of the analysis, configuration and adaptation of the **On-Board Block Aid Unit (OBLAU)** system and the centralized system for the installation thereof in the control center, functionality testing and commissioning of the innovative BlockSAT system. All in accordance with the request specified and approved by Ferrocarrils de la Generalitat de Catalunya for the operation of the Manresa-Súria/Sallent freight line (Barcelona, Spain).

Development of **WORKSHOP 10.0** which defines, with a vision of the future and the SENER's unmistakable hallmark, what the following generations of railway workshops may be based upon, with a more modular, reliable, safe and sustainable design and an optimized life cycle cost, aligned with new technologies and in synergy with other SENER innovations.

SENER is developing the **Master Station**, a functionally optimized, safe, interactive and connected station, which principally analyzes operations, access, structure and facilities. It features standard element settings that, in a BIM (Building Information Modeling) environment, allow for convenient customization and an attractive image to enhance the passenger experience.

SENER launched the **RAMS (Reliability, Availability, Maintainability and Safety) methodology** in the development of a predictive model for cost optimization in the life cycle of water treatment plants, providing the ability to measure the degree of reliability and availability, among other aspects, as well as the frequency of failures and downtime caused by them, with the aim of improving the service quality of treated water and water treatment plant operations as a whole.

OUTSTANDING PROGRAMS

| ENERGY



New full-size heliostat prototype with a new mechanism patented by SENER.

The development work of the solar field for solar tower thermoelectric technology plants continued, highlighting:

A **new heliostat**, with a new mechanism patented by SENER. The design, manufacture and field installation thereof were completed with a full-size prototype, successfully concluding the entire testing campaign. Regarding digitalization in the solar field, an adaptive control strategy was developed to maximize the use of the operational solar field and the self-diagnostic tool was improved to simplify the commissioning and maintenance of the solar field.

Work has continued in the **molten salt receiver**, mainly in activities aimed at simplifying its manufacture.

For solar thermoelectric plants with **parabolic trough collector technology**, the development of the **SENERtrough® technology** continued with the study of design improvements to the torque tube and the installation process of collectors in the plant.

In reference to the **molten-salt storage system**, a search has been carried out for more competitive solutions that **allow higher capacity storage and new applications**.

OUTSTANDING PROGRAMS

| ENERGY



SENER PV trackers developed by SENER.

Design, manufacture and certification of the **SENER PV tracker for photovoltaic solar energy** in its two modes: single-row and multi-row.

Complementing the development of the photovoltaic tracker, work was started on another one of a **software tool** for the automated definition of the optimal configuration of a photovoltaic plant.

A study of hybrid plant concepts for renewable energy generation, in which different technologies, such as solar thermoelectric and photovoltaic energy, are combined.

In the field of **offshore wind energy**, work commenced on the **development of advanced simulation of wind turbine loads and performance**.



[SENER PV tracker video](#)

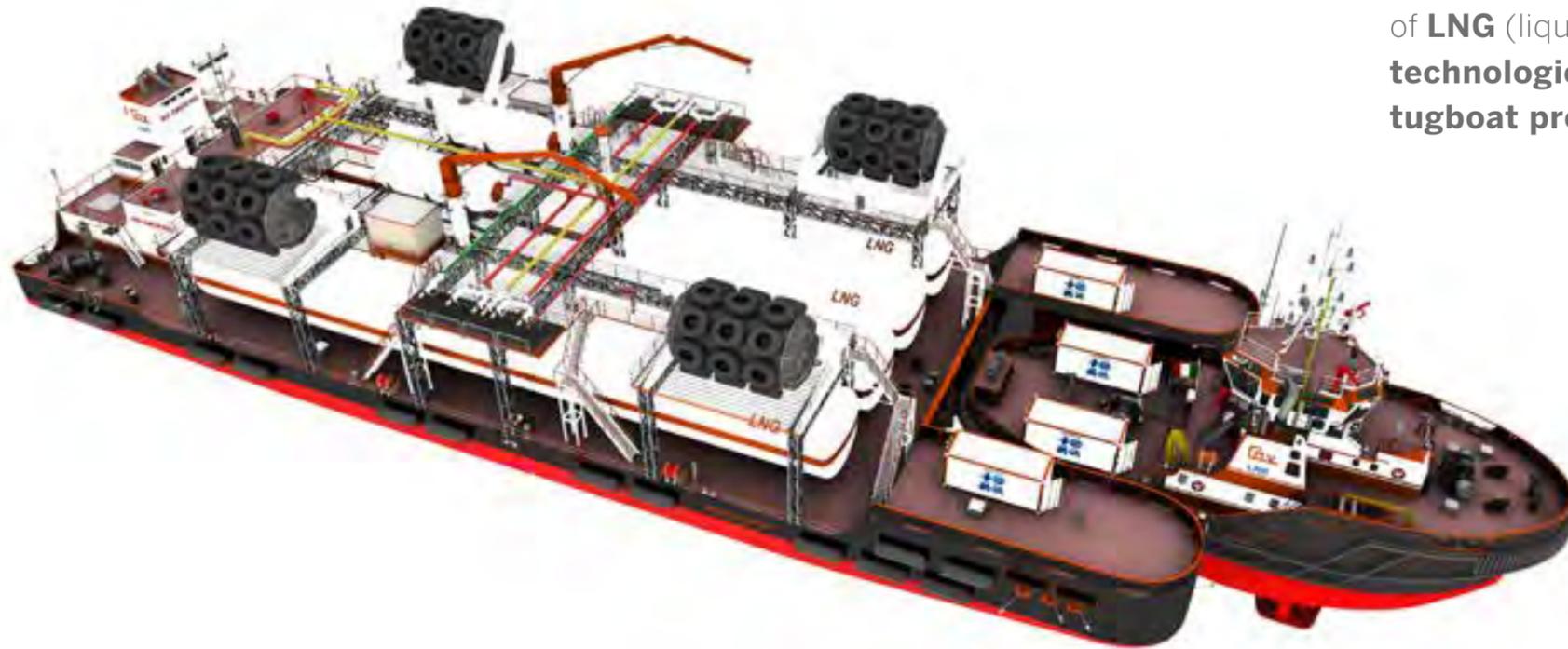
OUTSTANDING PROGRAMS



MARINE

Within the framework of the contract with the Rimorchiatori Riuniti Panfido & Csrl shipping company and in the continued development of **LNG** (liquefied natural gas) **bunkering, a technologically ground-breaking barge-tugboat project** began.

Development of **FORAN Windchill Integration (FWSI)**, second generation of the integration of FORAN with the product lifecycle manager (PLM) Windchill (PTC Inc.), which responds to the objective of reinforcing the concept of an integrated and cross-cutting solution for the marine market. With an architecture based on the use of web services, it presents improvements, simplifications and optimizations over the previous approach.



Innovative vessel designed by SENER combining a LNG-powered tug (power unit) and a non-powered pontoon for LNG supply of 4,000 m³ (loading unit).

EXTERNAL HONORS AND AWARDS FOR INNOVATION



AB-212 helicopters modernized by SENER for the Spanish Navy © Vicente Rodríguez Sosa.

Award for Excellence in the aerospace sector from the Avion Revue publication, in its first edition, to the SENER-Babcock España consortium for the Spanish Navy's Agusta-Bell AB-212 helicopter life extension modernization program.

SENER received the **Technological Revolution Award, as part of the Deia newspaper's Innovation Awards,** for its contribution to innovation, and for the company's innovative trajectory throughout its history.

2017/2018 Ones to Watch List of the European Business Awards distinguished SENER in Spain as one of the top companies in recognition of its activity in internationalization, innovation and ethics in business.

SENER was a **finalist in the Innovative Technology of the Year category of the African Utility Week awards** thanks to its proprietary patented technology, both for the SENERtrough®-1 and SENERtrough®-2 parabolic trough collectors and the HE54 heliostats for thermosolar plants.

06

A focus
on
people



**WE ARE UNSTOPPABLE
BY YOUR SIDE**

6.1

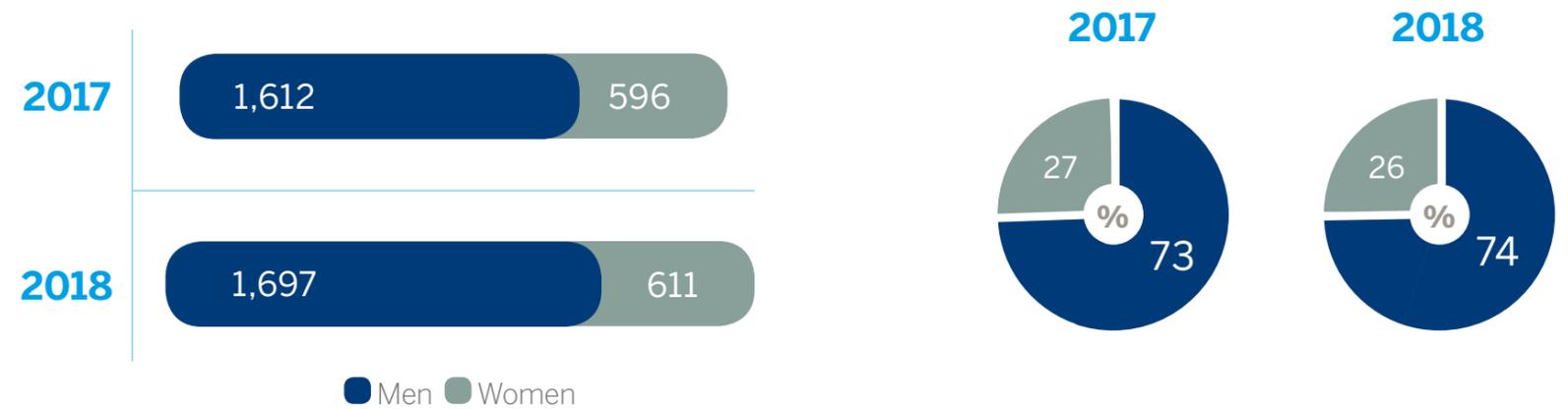
A focus on people



SENER Aerospace employees from the local office in Warsaw (Poland).

PEOPLE

Distribution by gender



Workforce (year average)

+0.45% ↑



2017 2018

Workforce (year end)

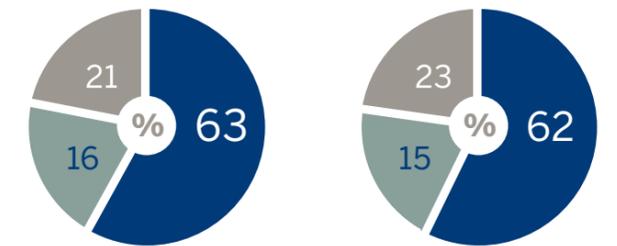
+5% ↑



2017 2018

Distribution by qualification

2017 2018



Postgraduates and higher graduates Medium graduates Others

Training 2018			
Training hours	Courses during working hours	Workforce participating	% of total working time
41,921	1,170	68%	1.25

6.1

A focus
on
people

PEOPLE



SENER was awarded the Family Responsible Company certificate (EFR).

SENER was recognized as a **Family Responsible Company (FRC)** by the Másfamilia Foundation and passed the 2018 internal audit where it was assessed for:

- **Investment in professional development** (technical training, languages, etc.).
- **Flexible Compensation Plan** (FCP).
- **The tax exemption for work carried out abroad** (7p).
- **Conciliation initiatives** through the promotion of flexible hours or continuous working days.

In health policy, SENER hired **MasPrevención** as a provider of occupational health services and a new personalized health card, SPMAS Global Card.

INTERNAL HONORS AND AWARDS FOR INNOVATION



SENER Innovation Awards 2018.

Technologies and Business Category: ‘Autoplak, equipment for laboratory automation’ project. This development solves planting automation with compact, reliable and simple equipment.

15th edition of the SENER Innovation Awards



- **To encourage innovation**, an essential value on which the SENER corporate culture is based.
- **To recognize the people** who contribute to maintaining SENER’s technological leadership and competitiveness in the market.



[SENER Innovation Awards video](#)

Tools and Advanced Processes Category: ‘ACROT – risk control in the operation of tunnel boring machines for construction companies’ project for optimizing the safety and output of underground excavations with a significant impact on costs and deadlines.

HEALTH & SAFETY



Risk identification workshop at ENCE's facilities in Huelva (Spain).

- All operating centers dedicated to Engineering and Construction renewed their **certification** pursuant to the **OHSAS 18001:2007** standards.
- The objectives related to accident rates, set by SENER General Management and based on the **OHSAS standards**, were met.
- It is worth noting the visible leadership initiatives in Health, Safety and Environment and Construction and Integration for the projects ENCE Huelva and ENCE Puertollano biomass power plants where **risk identification workshops** were organized.
- SENER was rewarded again by Spanish Social Security pursuant to Royal Decree 404/2010 as a result of its **outstanding contribution to reducing and preventing accidents in the workplace**.

6.4

A focus
on
people

COMMUNICATION



SENER celebrated 25 years in Barcelona (Spain).

In 2018, the Group Communication Management established a series of strategic objectives with the aim of supporting business development and contributing to the growth of SENER's visibility as a global brand.



[“Accomplishing the next impossible” video](#)

6.4

A focus on people

COMMUNICATION

Among the results and key performance indicators highlighted:

To **increase knowledge** and the perceived importance of projects



40 events including trade fairs, external and internal seminars



36 newsletters on corporate and business development issues



More than **40 items of valuable contents** created on video, catalog and computer graphics

To **enhance the SENER brand** in the digital environment



Corporate website: 823,732 pages visited in 2018 (+4.23% vs 2017)



On **LinkedIn:**
60,212 followers (+48.5% vs 2017)
3,782,137 click throughs (+35% vs 2017)



On **Youtube: 372,932** views

To favorably **consolidate corporate reputation**



5,150 media appearances



Advertising value equivalent: 15,512,000 €

07

We are
commitment



LOCAL FOCUS, GLOBAL LEGACY

RELATIONS WITH UNIVERSITIES AND RESEARCH CENTERS

Collaboration in Spain with the **Institute of catalysis and petrochemistry CSIC** (Higher Council for Scientific Research) in the Hydrogen markets project, for awareness of developments and trends in this field of research.

Conduct of the air-independent propulsion submarines research project with the **Polytechnic University of Valencia** (Spain) and **CSIC**.

Preparation of the CRTS manual for the Commuter and Regional Train Services (CRTS) working group of the **International Union of Railways (UIC)**, to offer an overview of the best sustainable practices in the world.

Participation in the **Spanish Association for Standardization (UNE)** as new members of the technical committees of the CTN 62/GT1

working group for the revision of standards EN 14015/EN 14620 for site-built tanks.

Collaboration in Spain with the **El Pardo Hydrodynamic Experiences Center (CEHIPAR)** in the development of the hydrodynamic study of the shapes of a next-generation tuna vessel for the ship operator PEVASA.

Collaboration with the **Vienna Hydrodynamic Center** in the development of the hydrodynamic study and calculation of behavior at sea of a liquefied natural gas (LNG) bunkering barge and gas-propelled Voith Schneider tug.

Participation in the **AENOR** (Spanish Association for Standardization) **subcommittee (CTN 140/SC7)** for the update of Eurocode 7 (Geotechnical Design).

Collaboration in Spain with **Tecnalia** for technology exchange projects on hydrogen membrane separation and predictive analytics innovation in industrial plants.

Collaboration with the **Catalan Agency for Business Competitiveness (ACCIÓ)** to promote the integration of start-ups and growth companies in disruptive innovation processes, together with the analysis of potential joint solutions.

As part of the **Connecting Europe Facility (CEF)** European initiative, collaboration with the **Port Authority of Seville** (Spain) for the development of the AIRIS-II project on maritime, port and navigable waterway traffic, and its multimodal integration with land-based transportation.

RELATIONS WITH UNIVERSITIES AND RESEARCH CENTERS

Collaboration with the **IK4-Tekniker technological center** (Spain) in the development of a mock-up for the validation of underground wireless communications for the production of a monitoring and control system for critical assets in tunneling operations, as well as in the development of PVD (Physical Vapor Deposition) coatings to extend the functionality of the surfaces of critical satellite parts.

Participation in the **Smart Railways working group of the Official College of Telecommunications Engineers (COIT)** in Spain, within the scope of connected trains and the new communications technologies applied to rail transport.

Thanks to its prominent position in the BIM (Building Information Management) field, SENER collaborated in the **BIM Euskadi (Basque) Commission** (Spain) for the implementation of the regulations, standards and technical code in the construction industry that will be applicable.

Agreement with **Mondragon University** (Spain) to promote research projects, technology transfer and training of young engineers. In 2018, two research projects were conducted; one on electromagnetic actuators for space, the other on manufacturing processes.

As part of the European **Horizon 2020** program, the project entitled **Scientific and Technological Alliance for Guaranteeing European Excellence in Concentrating Solar**

Thermal Energy (STAGE-STE) was completed; collaboration in the project entitled **FLExible Dimethyl ether production from biomass Gasification with sorption-enhanced processes (FLEDGED)** continued as a member of the advisory board; and the development of a standard interface in robotic applications for space missions in orbital and planetary scenarios for the **SIROM project** progressed.

Collaboration with the **Faculty of Science and Technology of the University of the Basque Country** (Spain) for the measurement of emissivities at high temperature.

Collaboration with the **Welding Institute** (United Kingdom) for the validation of the design of thick steel containers.

RELATIONS WITH UNIVERSITIES AND RESEARCH CENTERS

Agreement with the **National Autonomous University of Mexico**, the **Technological Institute of Monterrey**, the **National Polytechnic Institute**, and the **National Institute of Electricity and Clean Energy** to promote collaboration programs with SENER in Mexico in the field of innovation and research projects.

Development of a technology capable of producing hydrogen from the photocatalysis of metal clusters in collaboration with the **University of Santiago de Compostela** (Spain).

Collaboration with the **Higher Technical School of Naval Architects (ETSIN) of Madrid** (Spain) in the hydrodynamic numerical study of a ferry boat for Lake Victoria; in the numerical analysis of behavior at sea of two 4,000 m³ and 8,000 m³ liquefied natural gas bunkering vessels; and in the optimization study of a straight bulbous bow for a next-generation tuna vessel.

Continued collaboration with the **AIMEN Technology Center** (Spain) for the study of different nickel alloy welding processes.

Continued collaboration with the **Jaime I University of Castellon** (Spain) to study the improvement of the thermal storage fluid properties used in solar thermoelectric power plants.

Along with the **Higher Technical Institute of Lisbon** (Portugal), SENER worked on the simulation of loads and performance in offshore wind turbines.

UNIVERSITY AWARDS AND PROGRAMS SPONSORED BY SENER



Formula Student Bizkaia single-seater racing car (FSB2018), sponsored by SENER.

Renewal of the sponsorship of the Formula Student Bizkaia single-seater racing car (FSB2018), entirely designed by students of the Higher Technical School of Engineering of Bilbao (UPV, Spain) that rivals other universities around the world, in addition to the continued mentoring of members of this team.

Sponsorship of the BISKY Team, students from the University of the Basque Country (UPV/EHU) who took part in the challenge of launching a rocket to the Karman line, considered the boundary between the Earth's atmosphere and outer space.

At the SENER facilities, study plans, internship programs and end-of-career projects were carried out in recognition of the commitment entered into with **the aeronautical enrichment program of the University of the Basque Country**.

In Spain, **collaboration with the School of Engineering of Bilbao (UPV)** in the Master's Degree in Space Sciences and Technology for the improvement of mechanical specialization; with the **University of Bilbao** in Master's degrees in sustainable energy engineering and in research in energy efficiency and sustainability in industry, transport, building and urban planning with the teaching of seminars on solar thermal energy; with the **School of Engineering of the University of Navarra (TECNUN)** in the Master's Degree in Industrial Engineering; and with the **School of Road, Canal and Port Engineering of Santander** through training sessions on BIM in civil engineering.

SENER in **Poland** launched a series of informative **conferences in four Polish universities**.

SOLIDARITY INITIATIVES



Students receiving new uniforms at Maikaelelo school in Kathu (South Africa).

SENER has carried out various activities both in Spain and abroad, with the latter very focused on supporting local communities where the company has offices and projects.

Coinciding with **International Book Day**, SENER organized donations of books and educational materials for children and adolescents belonging to disadvantaged groups.

Continued collaboration with the **Business Observatory Against Poverty**, an initiative led by the **Codespa Foundation** to promote the leadership of the company when combating poverty and youth unemployment, and in order to foster the inclusion of people in the work environment.

Support for the **Spanish Red Cross** through blood donation campaigns and the sale of tickets for the traditional 'Gold Lottery', the proceeds of which are used to finance the social projects of this NGO.

Participation in the **'Magic Line' initiative at San Juan de Dios Hospital in Barcelona** (Spain) to raise funds for programs to care for people in vulnerable situations.

The **SENER office in Poland** cooperated again with the **Home-Family-Person Foundation** through the donation of computer equipment.

SENER FOUNDATION



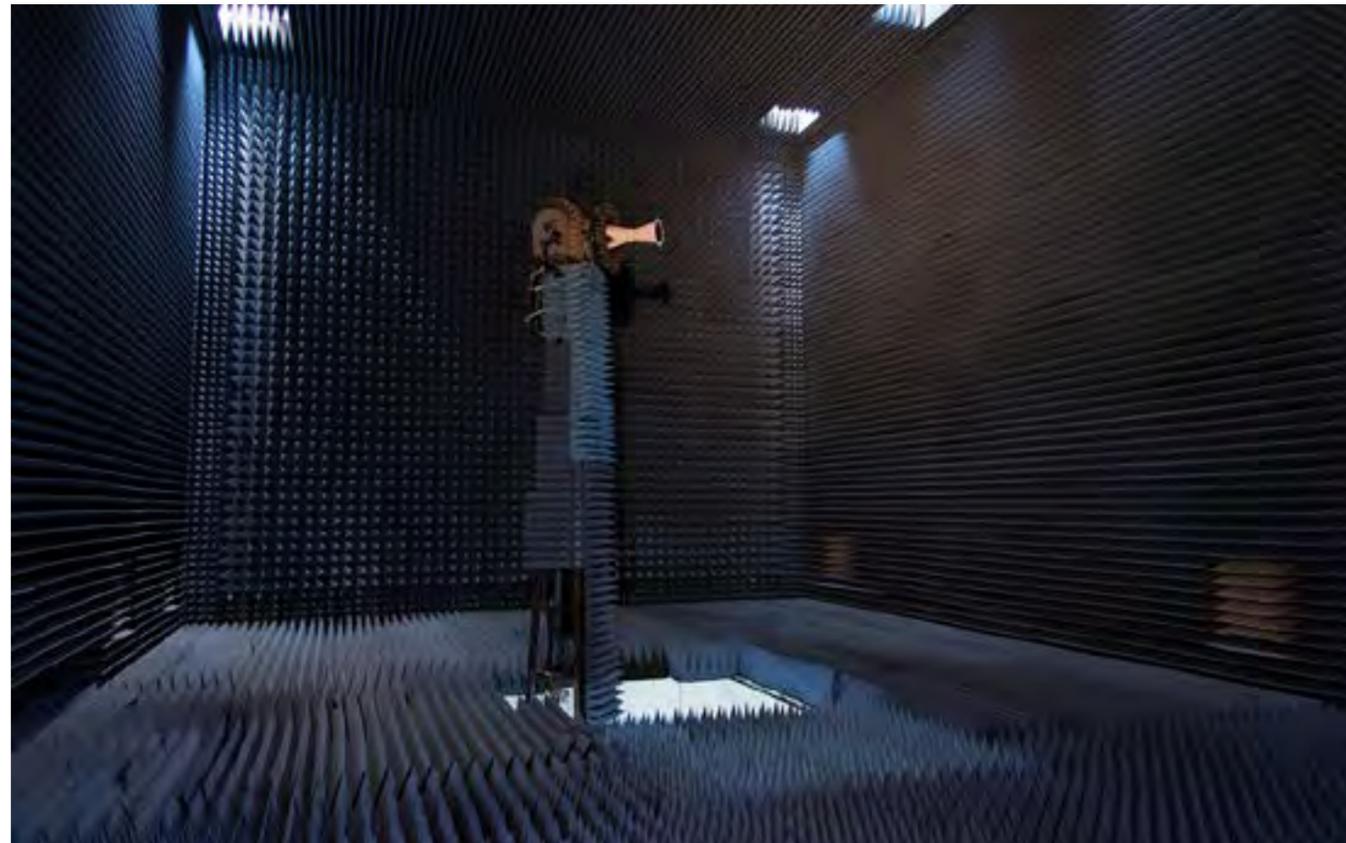
Andrés Sendagorta, President of the SENER Foundation, presented the Best Doctoral Thesis Award 2017.

The SENER Foundation awarded the Prize for the best doctoral thesis in engineering for work submitted in 2017.

The award went to the doctoral thesis “A numerical study of turbulent heat transfer in pipes”, written by Doctor Antonio Antoranz from the Carlos III University of Madrid (Spain).

SENER decided to show its alignment with the United Nations’ Sustainable Development Goals (SDG) and, through its projects and corporate actions, contributed to the fulfillment of those related to health and well-being; affordable and non-polluting energy; industry, innovation and infrastructure; and responsible production and consumption.

QUALITY



Anechoic chamber at SENER office in Arganda del Rey (Madrid, Spain).

In order to better adapt its certificates to the actual situation of its current projects and clients, SENER hired Lloyd's Register, a worldwide certification body.

During 2018 these certifications were renewed:

- **ISO 9001:2015**
- **EN 9100: 2018**
- **EN 9110: 2018**
- **PECAL/AQAP 2110**
- **PACAL/AQAP 2310**
- **ISO 13485: 2016**

Furthermore, for the first time the PERAM 145 certificate was obtained, issued by the General Directorate of Armaments and Material (DGAM), and the following standards were maintained:

- **PECAL/AQAP 2210 (Ministry of Defense)**
- **UNE 166002:2014 (AENOR)**
- **UNE-EN ISO 17020:2012 (ENAC)**

The **Spanish National Institute for Aerospace Technology (INTA)** approved the new Terms of Accreditation of the ROD (Design Organization Recognition) certificate for SENER, with scope for the design and certification of avionics and mission equipment.

ENVIRONMENT



Photovoltaic roof on the SENER office in Barcelona (Spain).

Among the environmental commitments as a result of its ISO 14001:2015 certification, SENER makes the three Rs its corporate objectives: **Reduction, Recycling and Reuse**.

With regard to the **reduction of emissions** and **consumption**, a series of measures were adopted, reducing in SENER facilities:

- Electricity consumption.
- Paper consumption.
- Water consumption.
- Packaging consumption.
- Fossil fuel emissions.

ENVIRONMENT



Kathu solar thermal power plant which provides clean energy to 179,000 households.

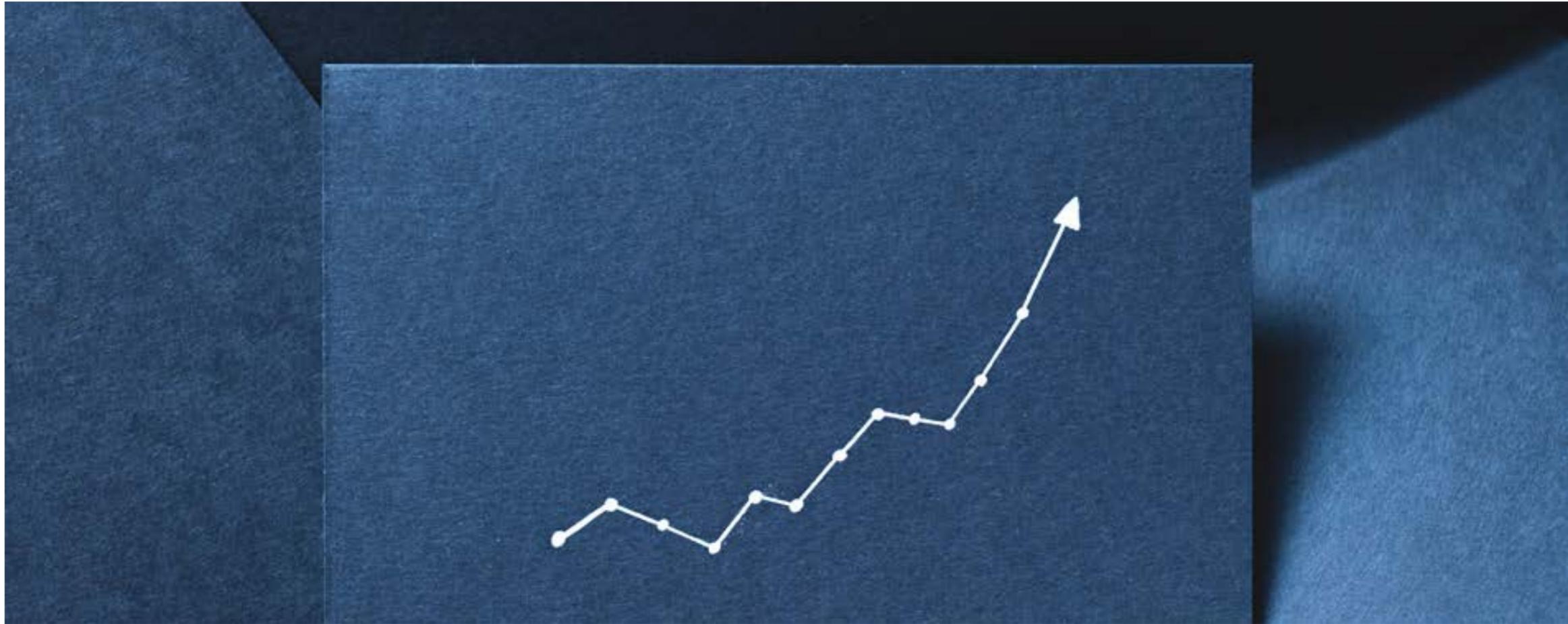
As a **recycling** measure, SENER implemented a selective collection campaign for packaging in offices.

The **circular economy and REUSE** concept was established for several of the projects being executed, which minimized shipments to landfill through:

- The **reuse of excavation sites** as landfills in the Biomass ENCE Puertollano and Biomass ENCE Huelva projects.
- **ENCE Puertollano** project: zero earth removal to landfill.
- The **reuse of waste** (crushed concrete) and demolition elements as backfill.

08

2018
figures



SHARING SUCSESSES

DIRECTOR'S REPORT FOR 2018

1. Development of the business and Group's situation

All matters affecting the business during 2018, essentially impacting its business and investment volume, are included in the consolidated annual accounts.

The Group recorded a result before taxes totalling €29.2 million at the end of 2018 compared to the result before tax of the previous year which amounted to €22.9 million. This confirms the positive development of the business.

The improvement of ITP's sales operation in 2017 generated a significant inflow of resources that has favoured the development of the core activity of Ingeniería y Sistemas, as well as of the

Renewable Investments area, strengthening the Group's positioning in innovation, technological differentiation, internationalisation and investment.

In 2018, the acquisition of the TRYO Aerospace & Electronics group is noteworthy. With this first investment, SENER reinforces its technological, engineering and production capacities in the aerospace sector with a clear vocation for growth. In making the decision, SENER has taken into account the complementarity that TRYO's capabilities provide both in technologies and in markets, as well as the coincidence in an outstanding commitment to innovation. With this purchase, SENER strengthens its position as an international top-level supplier of electromechanical components and systems, navigation systems and communications systems for Space and Defence.

With respect to the environment subgroup, there was a significant improvement in the Group's integrated result, which amounted to €7.2 million compared to €4.8 million the previous year.

2. Significant events for the Group taking place after the year-end

Between the end of the year and the date this report was prepared, there have been no events that have had a significant effect on the consolidated annual accounts and the Group's overall situation.



SENER branch office in Toronto (Canada).

3. Foreseeable development of the Group

Our expectations allow us to be confident that in 2019 the Group's activity will continue to grow in accordance with the business development plans.

With respect to the Engineering subgroup, 2019 is going to develop through a similar environment that in the current year, with a high importance of international engineering projects, products and turnkey projects. During 2019, SENER Ingeniería plans to carry out a reorganisation of its activity consisting of partially dividing the SENER Aeroespacial unit. This operation seeks, among other things, to specialise the SENER Aeroespacial management and to adequately organise the strategy of the different businesses, taking into account the growth opportunities of each of them.

The environment subgroup predicts a very satisfactory evolution in terms of production, results and compliance with the contractual obligations acquired with financial institutions.

4. Research and development activities

The efforts we have made in researching and developing technologies, product designs and new capacities that may be implemented in projects are borne out in the expenses incurred during the year reflected in the consolidated annual accounts.

We expect these efforts in innovation, research and development—through which we attain technological differentiation—to intensify during 2019.

5. Acquisition of treasury shares

No transactions involving treasury shares were carried out in 2018. The parent company does not hold any treasury shares at the year-end.

6. Risk management

The Group has an active risk management policy which is primarily intended to identify and manage those risks that represent threats to the attainment of results and goals so that appropriate avoidance action may be taken. The Group's financial risk management policy is described in Note 3.1 of the notes to the consolidated annual accounts.



Corporate headquarters of SENER in Madrid (Spain).

7. Statement of non-financial information

In accordance with the provisions of Law 11/2018 of 28 December, the non-financial information statement of the SENER Group is presented in a separate report. This non-financial information forms part of this Management Report and will be deposited, together with the consolidated annual accounts, with the Biscay Mercantile Registry.

In addition, the non-financial information statement will be published on SENER's website within a period of six months after the close of the financial year and for a period of five years, as established by applicable law.

8. Other information

The average workforce of the Group has increased in 2018 to 2,251 employees (2017: 2,241 employees).

The information regarding the average payment period for domestic suppliers is set out in Note 18 to the consolidated annual accounts.

**SENER Group
consolidated balance sheet
at December 31, 2018 and 2017**

SENER GROUP CONSOLIDATED ANNUAL FINANCIAL STATEMENTS

Thousand euros

Assets	2018	2017	%
Non current assets	278,022	213,774	30.1
Property, plant and equipment	16,716	5,485	204.8
Goodwill	38,333	10,084	280.1
Other intangible assets	16,263	6,908	135.4
Real state investments	11,350	0	-
Investments in associates	52,385	34,634	51.3
Deferred tax assets	126,372	133,322	-5.2
Financial investments in equity instruments	11,012	5,550	98.4
Other non current assets	5,591	17,791	-68.6
Current assets	689,305	849,089	-18.8
Inventories	9,071	6,829	32.8
Trade and other receivables	324,794	249,134	30.4
Other current assets	1,410	885	59.3
Cash and other cash equivalents	354,030	592,241	-40.2
Total assets	967,327	1,062,863	-9

**SENER Group
consolidated balance sheet
at December 31, 2018 and 2017**

	Thousand euros		
	2018	2017	%
Net equity and liabilities			
Net equity	523,483	502,025	4.3
Capital and reserves atributate to the Company's shareholders	522,890	501,508	4.3
Share capital	34,448	34,448	0
Share premium	366	366	0
Legal reserve	7,894	7,894	0
Accumulated traslation differences	-17,253	-14,061	-22.7
Reserve for investments in equity instruments	4,151	0	-
Hedging reserve	-30,727	-34,201	10.2
Retailed earnings	524,011	781,653	-33
Interim dividend	0	-274,591	100
Non-controlling interests	593	517	14.7
Non current liabilities	20,876	60,747	-65.6
Borrowings	10,375	56,483	-81.6
Deferred income tax liabilities	7,941	2,269	250
Provisions for liabilities and charges	2,560	1,995	28.3
Current liabilities	422,968	500,091	-15.4
Borrowings	23,128	98,703	-76.6
Trade and other payables	270,834	281,475	-3.8
Advances received for contracted work	127,591	116,705	9.3
Financial derivatives	3	23	-87
Provisions for other liabilities and charges	1,412	3,185	-55.7
Total net equity and liabilities	967,327	1,062,863	-9

**SENER Group
consolidated income statements
at December 31, 2018 and 2017**

	Thousand euros		
	2018	2017	%
Operating profit	21,575	17,215	25.3
Revenue	589,190	758,253	-22.3
Other operating income	3,751	6,637	-43.5
Changes in inventories of finished products and work in progress	-711	-341	-108.5
Work carried out by the Group on its fixed assets	266	0	-
Raw materials and other consumables	-326,704	-511,391	36.1
Employee benefit expense	-163,151	-150,088	-8.7
Depreciation and impairment of fixed assets	-4,662	-4,202	-10.9
Other operating expenses	-77,535	-84,054	7.8
Charge to provisions for liabilities	624	3,266	-80.9
Other net gains/(losses)	507	-865	158.6
Financial income/(expense)	473	835	-43.4
Financial income	5,642	6,967	-19
Financial expenses	-5,217	-2,048	-154.7
Net exchange differences	48	-4,084	101.2
Shareholdings in the results of associates and joint ventures	7,152	4,817	48.5
Profit before taxes	29,200	22,867	27.7
Corporate income tax	-18,446	-7,868	-134.4

8.2

2018 figures

SENER Group consolidated income statements at December 31, 2018 and 2017

	Thousand euros		
	2018	2017	%
Results of the financial year from continuing operations	10,754	14,999	-28.3
Result of the financial year from discontinued operations, net of tax	10,886	444,122	-97.5
Consolidated profit/loss for the year	21,640	459,121	-95.3
Attributable to			
Owners of the parent	21,409	403,413	-94.7
Non-controlling interests	231	55,708	-99.6

8.2

2018
figures

SENER Group consolidated cash flow statements at December 31, 2018 and 2017

	Thousand euros		
	2018	2017	%
Cash flow from operation activities	-44,042	137,899	-131.9
Result of the financial year before tax from continuing operations	29,200	22,867	27.7
Result of the financial year before tax from discontinued operations	10,886	449,999	-97.6
Adjustments	-12,040	-341,038	96.5
Result of the sale of discontinued operations	-10,886	-328,239	96.7
Depreciation and impairment for PPE and other intangible assets	4,662	4,202	10.9
Changes in provisions	-624	-5,576	88.8
Valuation adjustments due to impairment	2,385	0	-
Shareholdings in the results of associates and joint ventures	-7,152	-4,817	-48.5
Release to income of grants	0	-2,247	100
Financial costs	5,217	19,026	-72.6
Financial income	-5,642	-24,793	77.2
Other income and expenses	0	1,406	-100
Changes in working capital	-66,931	19,940	-435.7
Inventories	109	-39,152	100.3
Trade and other receivables	-55,002	122,616	-144.9
Trade and other payables	-12,038	-63,524	81
Taxes paid	-3,337	-13,869	75.9
Interests paid	-1,820	0	-

**SENER Group
consolidated cash flow statements
at December 31, 2018 and 2017**

	Thousand euros		
	2018	2017	%
Cash flow from investment activities	-41,508	414,819	-110
Disposal of subsidiary, net of cash drawn down	13,544	441,729	-96.9
Acquisition of subsidiary company, net of cash acquires	-48,967	0	-
Acquisition of PPE, intangible assets and investment property	-13,923	-71,882	80.6
Payment due to Investments in associates and joint ventures	-11,450	0	-
Receipts from sale of property, plant, equipment and intangible assets	546	3,589	-84.8
Collections received from associates and joint ventures	11,893	0	-
Dividends received associates and joint ventures	1,500	0	-
Other cash flows from investments activities	-293	25,535	-101.1
Interest received	5,642	15,848	-64.4
Cash flow from financing activities	-152,661	-420,633	63.7
Income from borrowings	1,378	6,525	-78.9
Repayment of borrowings	-24,912	-182,923	86.4
Treasury shares	0	-87,383	100
Grants received	0	387	100
Dividends paid to the company's shareholders	-129,127	-156,555	17.5
Dividends paid to non-controlling interests	0	-684	100
Net variation in cash and cash equivalents	-238,211	132,085	-280,3
Cash and cash equivalents at beginning of the year	592,241	471,542	25.6
Gain / (Losses) on exchange differences of cash and cash equivalents	0	-11,386	100
Cash and cash equivalents at end of the year	354,030	592,241	-40.2

**SENER Ingeniería y Sistemas, S.A.
consolidated balance sheet
at December 31, 2018 and 2017**

SENER INGENIERÍA Y SISTEMAS, S.A. CONSOLIDATED ANNUAL FINANCIAL STATEMENTS

Thousand euros

Assets	2018	2017	%
Non current assets	121,068	128,396	-5.7
Property, plant and equipment	4,716	5,335	-11.6
Goodwill	9,611	10,084	-4.7
Other intangible assets	5,639	6,906	-18.3
Investment in associates	8,677	15	57,746.7
Deferred tax assets	89,651	102,844	-12.8
Other non current assets	2,774	3,212	-13.6
Current assets	487,078	486,504	0.1
Inventories	6,146	6,829	-10
Trade and other receivables	296,463	237,155	25
Short term loans to related parties	4,431	3,926	12.9
Other current assets	1,117	885	26.2
Cash and other cash equivalents	178,921	237,709	-24.7
Total assets	608,146	614,900	-1.1

**SENER Ingeniería y Sistemas, S.A.
consolidated balance sheet
at December 31, 2018 and 2017**

Thousand euros

	2018	2017	%
Net equity and liabilities			
Net equity	210,734	203,565	3.5
Capital and reserves attributable to the Company's shareholders	209,842	202,843	3.5
Share capital	6,018	6,018	0
Share premium	2,418	2,418	0
Legal reserve	1,213	1,213	0
Accumulated translation differences	-15,680	-12,762	-22.9
Hedging reserve	-801	-523	-53.2
Retained earnings	216,674	206,479	4.9
Non-controlling interests	892	722	23.5
Non current liabilities	10,308	9,483	8.7
Borrowings - other debts	5,424	6,704	-19.1
Deferred income tax liabilities	4,474	2,193	104
Provisions for liabilities and charges	410	586	-30
Current liabilities	387,104	401,852	-3.7
Borrowings - other debts	2,707	13,504	-80
Borrowings - debts with financial institutions	3,183	10,199	-68.8
Other current liabilities	0	23	-100
Trade and other payables	255,285	259,968	-1.8
Advances received for contracted work	125,026	116,705	7.1
Provisions for other liabilities and charges	903	1,453	-37.9
Total net equity and liabilities	608,146	614,900	-1.1

8.3

2018
figures

SENER Ingeniería y Sistemas, S.A. consolidated income statements at December 31, 2018 and 2017

	Thousand euros		
	2018	2017	%
Operating profit	25,850	22,066	17.1
Revenue	570,209	760,311	-25
Other operating income	1,638	6,526	-74.9
Changes in inventories of finished products and work in progress	-683	-341	-100.3
Raw materials and other consumables	-320,326	-512,034	37.4
Employee benefit expense	-150,900	-147,494	-2.3
Depreciation and impairment	-3,427	-4,069	15.8
Other operating expenses	-71,949	-80,402	10.5
Charge to provisions for liabilities	517	434	19.1
Other net gains/(losses)	771	-865	189.1
Financial income / (expense)	594	1,858	-68
Financial income	5,447	8,541	-36.2
Financial expenses	-4,905	-2,599	-88.7
Net exchange differences	52	-4,084	101.3
Share in profit / (loss) of equity-accounted investees	-1,244	83	-1,598.8
Profit before taxes	25,200	24,007	5
Corporate income tax	-14,850	-7,803	-90.3
Profit for the year	10,350	16,204	-36.1
Attributable to			
Owners of the parent	10,095	15,404	-34.5
Non-controlling interests	255	800	-68.1

8.3

2018
figures

SENER Ingeniería y Sistemas, S.A. consolidated cash flow statements at December 31, 2018 and 2017

	Thousand euros		
	2018	2017	%
Cash flow from operation activities	-31,277	-14,328	-118.3
Profit / (loss) for the year before taxes	25,200	24,007	5
Adjustments	5,918	-1,256	571.2
Depreciation	3,427	4,069	-15.8
Variation in provision for receivables impairment	2,177	1,620	34.4
Change in other provisions	-517	-434	-19.1
Results on equity-accounted investees	1,244	-83	1,598.8
Other income and expenses	207	16	1,193.8
Profit / (loss) on fixed assets disposal	-78	0	-
Gain / (Losses) from fair value adjustments, net of tax	0	-502	100
Financial expenses	4,905	2,599	88.7
Financial income	-5,447	-8,541	36.2
Changes in working capital	-58,054	-30,923	-87.7
Inventories	683	341	100.3
Trade and other receivables	-62,233	110,790	-156.2
Other assets	-232	5,751	-104
Trade and other payables	3,728	-147,805	102.5
Taxes paid	-1,316	-3,557	63
Interests paid	-3,025	-2,599	-16.4

8.3

2018
figures

SENER Ingeniería y Sistemas, S.A. consolidated cash flow statements at December 31, 2018 and 2017

	Thousand euros		
	2018	2017	%
Cash flow from investment activities	-7,802	152,296	-105.1
Acquisition of property, plant, equipments and intangible assets	-1,885	-3,810	50.5
Investments in associates	-11,450	0	-
Receipts from sale of property, plant, equipment and intangible assets	248	225	10.2
Reimbursement / (grant) other non-current receivables	-162	149,521	-100.1
Interest received	5,447	6,360	-14.4
Cash flow from financing activities	-19,709	-55,375	64.4
Income from borrowings	1,094	0	-
Repayment of borrowings	-20,803	-48,259	56.9
Dividends paid to the parent company's owners	0	-7,116	100
Net variation in cash and cash equivalents	-58,788	82,593	-171.2
Cash and cash equivalents at beginning of the year	237,709	155,116	53.2
Cash and cash equivalents at end of the year	178,921	237,709	-24.7



SENER
in the
world



SENER IN THE WORLD



AMERICA

BOGOTA

Transversal 19A N° 98 – 12
Oficina 701 110221
Bogota D.C. (Colombia)
Tel. +57 1 756 84 39 / 40

BUENOS AIRES

Av. Leandro N. Alem 712, piso 11°
CP C1001AAP
Buenos Aires (Argentina)
Tel. +54 11 527 36 800
Fax +54 11 527 36 803

MEXICO CITY

Juan Racine, 112 – 10ª planta
Colonia Los Morales – Polanco
1151 Mexico City (Mexico)
Tel. +52 553 004 0104
Fax +52 555 395 7077

LOS ANGELES

800 Wilshire Boulevard. Suite 700
Los Angeles, CA 90017 (USA)
Tel. +1 213 457 1860

SANTIAGO DE CHILE

Calle Los Militares 5001, oficina 601
7550000 Las Condes
Santiago de Chile (Chile)
Tel. +56 22 592 0800

SÃO PAULO

Alameda Santos, 1357 - 7º e 8º andares
Jardim Paulista -São Paulo
CEP 01419-908 (Brazil)
Tel. +55 112 050 7000

TORONTO

120 Adelaide St. West, Suite 2110
Totonto-Ontario MSH 1T1 (Canada)
Tel. +1 416 907 7448





SENER
in the
world



EUROPE

BARCELONA

Carrer Creu Casas i Sicart, 86-88
Parc de l'Alba
08290 Cerdanyola del Vallès
Barcelona (Spain)
Tel. +34 932 283 300
Fax +34 932 283 316

Avenida Ramón Ciurans
Pol. Industrial Congost, Parc. 4-S
08530 La Garriga
Barcelona (Spain)
Tel. +34 938 605 471

BILBAO

Avda.de Zugazarte, 56
48930 Getxo -Vizcaya (Spain)
Tel. +34 944 817 500
Fax +34 944 817 501

Edificio Albia I
San Vicente, 8; 7º Dpto. 11
48001 Bilbao (Spain)
Tel. +34 944 247 892

BRUSSELS

Boulevard du Régent 37-40
Bureau 514
1100 Brussels (Belgium)
Tel : +32 (0) 289 53 400
+32 (0) 800 97 282



EUROPE

LISBON

Rua Professor Fernando da Fonseca
Edifício Visconde de Alvalade, piso 2
1600-616 Lisbon (Portugal)
Tel. +35 121 752 9160
Fax +35 121 752 9169

LONDON

20 Eastbourne Terrace
10th floor London W26 LG (UK)
Tel. +44 (0) 203 871 2627

MADRID

Calle Severo Ochoa, 4
Parque Tecnológico de Madrid
28760 Tres Cantos - Madrid (Spain)
Tel. +34 918 077 000
Fax +34 918 077 201

Ctra. Campo Real, km 2,100
28500 Arganda del Rey
Madrid (Spain)
Tel. +34 918 760 707

VALENCIA

Calle Méndez Núñez, 40 - 4ª planta
46024 Valencia (Spain)
Tel. +34 963 394 100
Fax +34 963 394 300

WARSAW

Al. Jerozolimskie 202
02-486 Warszawa (Poland)
Tel. +48 22 380 75 75





SENER
in the
world

AFRICA

JOHANNESBURG

10th floor, Fredman Towers
13 Fredman Drive Sandton, 2196
Johannesburg (Gauteng, South Africa)
Tel. +27 11 303 7500

RABAT

Résidence Prestigia,
Immeuble 8 Rez-de-chaussée
Appartement n°2, Hay Riad
10104 Rabat (Morocco)
Tel. +212 537 548 406





SENER
in the
world



ASIA

ABU DHABI

Al Nahyan Commercial Building
Block – A – Bldg # 2-2nd floor
PO box 95010 Abu Dhabi
(United Arab Emirates)
Tel. +971 (0) 2 611 8999
Fax +971 (0) 2 611 8900

BUSAN

11 F (#1102-03), KNN Tower 30
Centum Seo-ro Haeundae-Gu, Busan
48058 (South Korea)
Tel. +82 51 959 5500
Fax +82 51 959 5511

SHANGHAI

28E Times Square Building
500 Zhangyang Road
Pudong District
200122 Shanghai (China)
Tel. +86 216 100 2030
Fax + 86 216 100 2031

