



ALWAYS ONE STEP AHEAD



**Publishing, editorial  
and production  
coordination**  
Codice edizioni

**ERG organisation and  
editorial coordination**  
Elena Barberis,  
Lucia Bormida,  
Davide Campailla,  
Sebastiano Suraci

**Texts edited by**  
Alessandra Viola

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**Today images**  
Luca Locatelli,  
National Geographic  
photographer

**Graphics and layout**  
Studiofluo,  
Gaetano Cassini

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*"I never start a day  
without a plan"*  
Riccardo Garrone

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## *Preface*

**Edoardo Garrone**

80 years of ERG, 80 years of energy. A long business story whose underlying theme has been, and will continue to be, energy. Not just the energy we produce but above all the energy of all the people that down the years have helped us achieve our many remarkable results.

This book aims to present our history – Yesterday, Today and Tomorrow – through a mix of words and images, and is the perfect follow-up to the book produced to mark our 70<sup>th</sup> anniversary, *From Oil to Energy. ERG 1938-2008*.

A journey back in time that covers the most important landmarks in this great adventure against the backdrop of events in Italy, the Second World War, the economic boom, the oil crisis of the 1970s and the Years of Lead and arriving right up to the present day with modern technological innovations and the recent economic crisis. And it is in this difficult economic climate that the company has embraced the future, transforming from Italy's leading oil industry operator into one of Europe's leading producers of electricity from renewable energies and Italy's number one wind energy producer.

For the historic images in the book we dipped into our precious photo archive while for those relating to more recent times we called on a top international photographer whose evocative snaps of our plants offer a glimpse of our day-to-day activities and our relationship with Nature. Indeed, the power and beauty of Nature are our greatest resources.

We have come a long way since my grandfather Edoardo founded ERG; we have grown and evolved over time but we have maintained the same spirit, the same values, the same passion. All of this has been possible thanks to the ERG People and their incredible ability to evolve and to move with the times without ever losing sight of our most distinctive qualities and our founding values. "Evolving energies", as the pay off of our new logo puts it. Because ERG has always been synonymous with energy: evolving energy.

This book is dedicated to my father Riccardo who, for over 40 years, led this Group along the incredible path described on these pages with passion, courage, wisdom and farsightedness. His immense humanity, his unwavering social and civic engagement, always pursued with the good of the country, his city and his People in mind, will always be an example for all of us.

## **Introduction**

**Alessandro Plateroti**

Italian entrepreneurial history has always been considered one of the most varied in the world and has been admired and studied at an international level. It is a story of men, women and families, of visionary entrepreneurs and proud craftsmen who, generation after generation, and with no country system behind them, transformed their ideas into great national and international industrial companies. These played a key role not only in the transition of Italy's economy from agriculture to industry but also in the social and economic development of the country and their local region.

But while every family business, just like every family of businessmen and women, has its own story which makes it unique and inimitable, there is a common denominator that down the decades and generations has represented both a fundamental value of the Italian approach to business and a development model that no multinational corporation or public company has been able to replicate: the knowledge that the success of a business does not only depend on the availability of capital and technological capacity, but above all on a deep understanding of the geographical and cultural ecosystem and the characteristics of the region, its inhabitants and the world of work.

This book on the eightieth anniversary of ERG is not simply a celebration of the company's history and the tenacity and intuition of its founder and his descendants; it also tells the story of a model of industrial development that played a decisive role both in Italy's post-war reconstruction and the entry of its economic system into the broader process of globalisation. In other words, the text and photos recount much more than the long and fascinating history of the Garrone family, from the first generation to present day. It also offers a real lesson on the early days of globalisation and the impact of the 'cultural factor' on business management and strategy.

These considerations already formed the basis for the book *From Oil to Energy: ERG 1938-2008* by Paride Rugafiori and Ferdinando Fasce, published ten years ago to mark the company's seventieth anniversary. Yet this new publication offers much more than a mere celebration of the past and the strategies that have made ERG a large European refining and petroleum distribution company. The text and photos in this new edition express the essence of the business and cultural values that have enabled the third generation of the Garrone family to reinvent the Group's mission – the definitive exit from the oil sector is now complete – and to turn its attention to the new global energy model: green energy and the sustainable economy. The ERG Group is now Italy's leading wind energy operator and one of the top ten on-shore wind operators in Europe.

In the coming decades, ERG will no longer be the company envisaged by Edoardo Garrone in 1938, but will continue to grow and thrive from those same family and cultural roots: industrial and social responsibility and, above all, commitment and hard work. After all, ERG is not simply the initials of Edoardo Raffinerie Garrone; *erg*, or *ergon* which means 'work' in Ancient Greek (*ἔργον*), is also the unit of measurement of both energy and work. As the saying goes, nothing happens by chance.

# EIGHTY YEARS OF HISTORY



The Mayor of Genoa grants Edoardo Garrone a licence to "trade in products obtained from the processing of oil and tar."



1938



Italy is still a monarchy.

1939



Germany annexes Poland and the Second World War begins.

1941



Naval bombardment of Genoa by Britain's Royal Navy.

The United States enters the war after the Japanese attack on Pearl Harbour.

Italy has a population of 42 million people.

1945



The company founded by Edoardo Garrone temporarily turns to the production of bricks to help in Italy's post-war reconstruction.



End of the Second World War and liberation from Nazism and Fascism.

Italy's GDP per capita is half that of 1938.

1946



Italy votes to become a republic with women also voting for the first time.

ERG begins production at the Genoa San Quirico Refinery.



Edoardo Garrone uses his business experience to create Italiana Carburanti, the first fuel distribution and sale business.



ERG signs the first major international agreement with British Petroleum, which has held a minority stake in the company for some years.



1947 1948 1950 1951 1954 1955 1956



The winners and losers of the Second World War sign the Paris Peace Treaties.



The planning of Sicily's connection to the national electricity grid begins.



Agricultural reform in a country where 42% of the population works in the agricultural sector.  
In Italy, the Cassa per il Mezzogiorno is set up.



The first Sanremo Festival is broadcast on the radio and 18,500 refrigerators are produced in a year: electricity is increasingly part of daily life and demand rises.  
Italy has a population of 47 million people.



RAI officially starts TV broadcasting.



In Italy, 4% of families own a TV set.  
The first silicon solar cell capable of generating measurable electric current is patented: the first step towards photovoltaics.



The foundation stone of the Autostrada del Sole motorway is laid.  
First session of the Italian Constitutional Court.

The ERG refinery in San Quirico has an annual production capacity of 1.62 million tonnes of crude and Banca Commerciale calculates its value at between 12 and 16 billion lire.



1957 1958



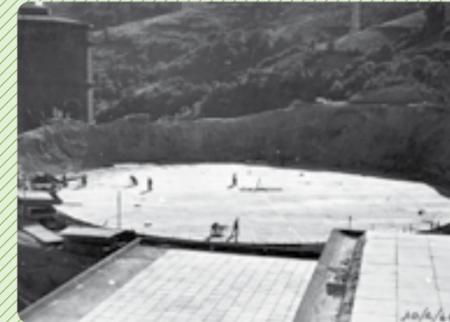
Italy joins the European Common Market, setting off on its rise as an industrial country.



The Italian 'economic boom' begins.



The San Quirico refinery begins a period of expansion and will double in size over the following three years.



1960



The Financial Times names the Italian lira as the most stable currency of the year.



For the first time, the industrial sector (37%) outstrips agriculture in terms of employment (31%).

Italy has a population of 50 million people.

1961



The national electricity system is unified.

1962

1963

The San Quirico refinery employs 845 people (quadrupled over the course of a decade).

Following the premature death of his father Edoardo, Riccardo Garrone becomes Chairman of ERG at the tender age of 27.



The Arquata Scrivia depot in the lower Po Valley is built, enabling the San Quirico refinery to overcome the problems of a lack of space and road connections.



ERG enters ISAB's shareholding structure to build a large refinery in Sicily, growing its share until it takes control (1997).



1963



A population rise of 200,000 in the cities of the Industrial Triangle (Genoa, Milan and Turin).

1964



President of Italy Antonio Segni and Prime Minister Aldo Moro open the Autostrada del Sole motorway: 761 kilometres from Milan to Naples.

1965



Olivetti launches the world's first personal computer: the P101, which weighs more than 35 kg.

Fifty percent of Italian households have a television set and annual production of refrigerators breaks the 3-million mark.

1968



The Student Movement emerges.

1969



Man first sets foot on the Moon.

Northern and Southern Italy are connected by a 380-kV power transmission line.

The terrorist attack on Piazza Fontana in Milan marked the beginning of the Years of Lead.

1970



In Italy the Workers' Statute and the divorce law are approved.

1971



Italy has a population of 54 million people.

1972



The first International Conference on Ecology is held in Stockholm.

ERG processes 7.3 million tonnes of crude in San Quirico, an absolute record. Almost 2 million tonnes of finished products pass through the Arquata Scrivia depot.



The ISAB refinery opens with an annual processing capacity of 12 million tonnes of crude oil.



The San Quirico modernisation works pursued in response to the oil crisis are completed.



1973

1975

1977

1979

1980

1982



In Italy, first car-free Sunday because of the oil crisis.

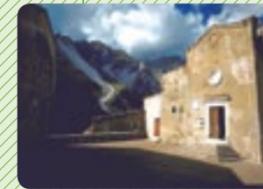


NASA builds experimental turbines that pave the way for new wind technologies.

The first National Energy Plan is launched.



RAI starts colour broadcasting.



The first photovoltaic system is installed in Italy, at the Mandriola Pass.



The world's first wind farm opens in New Hampshire (USA).

Inflation in Italy hits a record high of 21.7%.

ERG expands its fuel distribution network with the acquisition of the entire Italian network of the French company ELF (780 service stations).



ERG acquires Chevron Oil Italiana (1,700 service stations) and becomes the largest private Italian oil group with 2,200 employees and a turnover of 4,500 billion lire.



The San Quirico refinery in Genoa is definitively shut down. The disused land, suitably developed for conversion, will be sold in 1995.



1982



Bearzot's Italy win the World Cup in Spain.

1983



The Federal Communication Commission approves Motorola's application to sell the world's first mobile phone.

1984



Apple markets its first Macintosh computer.

1985



The Schengen Treaty is implemented, legislating for the free movement of people between European Union member states.  
Microsoft launches the first version of Windows.

1986

1987



Italy votes No to nuclear power in a referendum.

1988



Italy creates a national space agency.

1989



The Berlin Wall falls.



ISAB Energy is founded in Priolo following an agreement between ERG and Edison Mission Energy, one of the world's largest power producers. This company that goes on to build the first heavy oil Italian gasification plant for the production of electricity.



ERG is listed on the Stock Exchange.



Laying of the foundation stone for the construction of ISAB Energy's IGCC (Integrated Gasification Combined Cycle) plant, which will come on stream in 2000.



1991



The World Wide Web is born.  
Italy has a population of 56.7 million people.

1992



The European Community becomes the European Union with the Maastricht Treaty.  
The scientific satellite Tethered is launched, built and designed in Italy to show the possibility of producing electricity in space.  
Currency crisis in Italy and devaluation of the lira.

1993

1997



The Kyoto Protocol is drawn up at the Conference of Parties (COP3).  
Italian inflation drops below 2%, in a sign of economic recovery.

1998



Google is founded.

1999



The Euro, the single European currency, is created and will enter circulation in 2002.



Alessandro Garrone is appointed Chief Executive Officer of ERG.

ERG acquires the AGIP refinery in Priolo. The ISAB refinery integrated with the AGIP plant becomes one of the largest refining facilities in Europe.



After 40 years, Riccardo Garrone leaves the chairmanship of ERG to Edoardo, his eldest son.



The Edoardo Garrone Foundation is founded on 23 December as a natural evolution of the social and cultural commitment of the Garrone and Mondini families.



ERG enters the renewable energy world with the acquisition of EnerTAD, a company listed on the Milan Stock Exchange that owns wind farms in Italy and France.



2001



The United States is rocked by the 11 September attacks.

2002



Following an adjustment period the euro-dollar exchange rate returned to parity.

2003

2004



Facebook is founded.

2005



YouTube is founded.

2006



2006



Marcello Lippi's Italy win the World Cup in Germany.  
The subprime crisis in the United States triggers the economic crisis.

ERG signs an agreement with LUKOIL for the sale of 49% of ISAB and a put option for the remaining part.



2008



The financial crisis turns into a real economic crisis and many countries fall into recession for the first time since the Second World War.

2009



Barack Obama becomes the first African-American president of the United States.  
Whatsapp is founded.

2010



ERG and Total Italia form the TotalErg joint venture, creating the third largest Italian petroleum product operator (market share of around 12%, 3,200 service stations).

A 480 MW CCGT (Combined Cycle Gas Turbine) power plant, fuelled by natural gas and housed within the Priolo (SR) industrial site, is commissioned.

2011



Protests erupt against a number of Arab regimes in what comes to be known as the Arab Spring.



A second referendum confirms the No to nuclear power in Italy.

2012



Italy's population passes the 60-million mark and the world population hits 7 billion.

ERG sells its final stake in the ISAB refinery.

ERG becomes Italy's leading wind operator and enters the German market. The process of internalising Italian operations and maintenance activities begins.



2013

The ISAB Energy IGCC plant is sold to LUKOIL.



2014

ERG enters the hydroelectric sector with the acquisition of E.ON's Italian assets with a capacity of 527 MW. Its growth in renewables continues through the diversification of sources and the expansion of wind power in Europe.



2015



The EU 20-20-20 package for reducing greenhouse gas emissions, developing renewables and energy efficiency, comes into force.



At the COP21 Conference of Parties in Paris, the European Union and 195 signatory nations agree to contain the rise in global temperature to 2°C by 2050, giving an important role to clean energy.

In Milan, the Expo 2015 Universal Exposition is dedicated to food and energy.



Solar Impulse is the first solar plane to circumnavigate the world.

The discovery of gravitational waves is announced in Italy and the United States.

The European Commission presents the Clean Energy Package, a set of legislative proposals for the sectors of renewable energy sources, energy efficiency, the power market and mobility.

2016



ERG definitively exits from the oil industry with the sale of TotalErg.

At the end of 2017 ERG and its wind farms are operating in Italy, France, Germany, Poland, Romania, Bulgaria and UK, with an installed capacity of 1,814 MW.

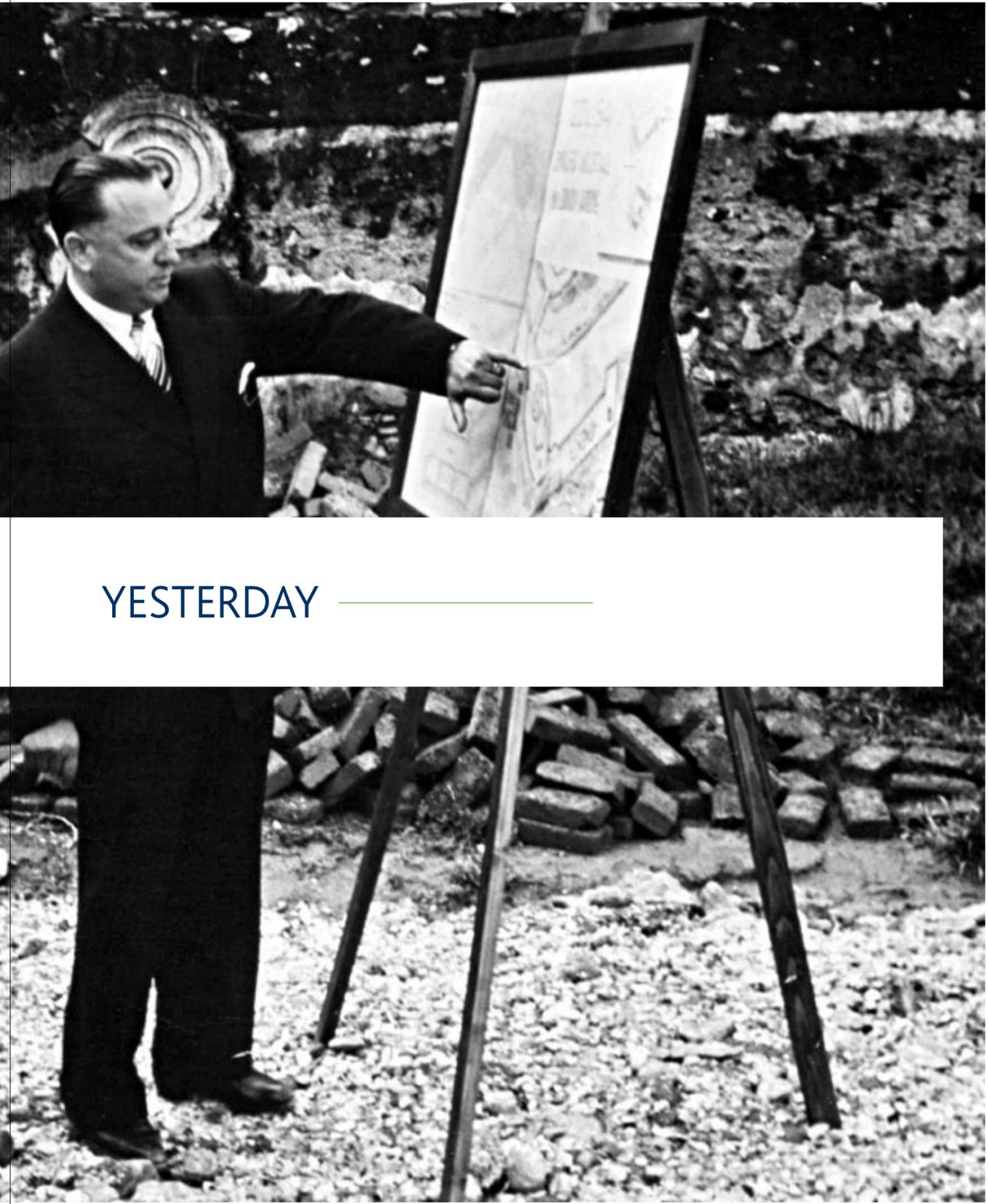
ERG enters the solar industry by acquiring 30 photovoltaic plants for a total of 89 MW.

2017



NASA discovers seven Earth-like planets in another solar system.

Italy develops a National Energy Strategy, directly inspired by the European Clean Energy Package, for the decade 2020-2030.



YESTERDAY



### A love story

The story of ERG officially began in Genoa on June 2, 1938 but its roots actually go much further back in time, to 1923. That year, Edoardo Garrone, the future founder of the oil company that bears his name, met Giulia Maina in Asti and fell in love with her.

At the time, there was no trace of a refinery – the R in the acronym ERG – in the ambitious projects of young Edoardo, and yet that was when the plan began to take form. Garrone was only seventeen years old; he was still in secondary school but when he met Giulia he knew he wanted to spend his entire life with her and have a family together. He knew he wanted to marry her and, for a man with his temperament, nothing seemed impossible, no goal too difficult to achieve. But what he didn't have, and he knew it, was a 'respectable position' which would allow him to ask for her hand in marriage. Thus, he dedicated all his energy to attaining this objective, from his secondary school diploma to his degree in industrial chemistry, his first steps in the world of work, and all the way to his entry into the oil sector.

In those years, major international companies were operating in Genoa and Edoardo gained his first professional experience as a manager at a number of companies involved in mineral oil refining. He had never considered working in the oil industry but he soon showed his worth, his extraordinary ability, his iron will, and his nose for business. Even though he was still young, he clearly had a bright future in business ahead of him. In 1933, he married Giulia and their children, Carla and Riccardo, were born shortly after.

After making this dream come true, it was time for Edoardo – who in the meantime was gaining first-hand experience in the world of oil – to dedicate himself to another important life project. Thus, in 1938, he took the first step toward the creation of the Raffinerie Edoardo Garrone: he created the sole proprietorship enterprise Dott. Edoardo Garrone-Prodotti chimici industriali, for the "sale and processing of oil and tar derivatives and chemical products for industry." The next step was to build the San Quirico refinery on the banks of the Polcevera River, in Genoa's hinterland. Construction began but there was barely time to celebrate this new enterprise when the outbreak of the Second World War turned Italy upside down. The following years were dramatic, marked by fear, tension, and economic crisis.

When the war ended, the situation struggled to improve. In just five years of war, the country's GDP had been halved; the economy was stagnating and to diversify Edoardo decided to build a brick factory in San Quirico. Bricks were in great demand during the post-war reconstruction period.

But by the end of the 1940s, the situation had changed once again as oil became a key factor in the economic recovery and Italy began to play an increasingly strategic geographical role as an interface between Europe and the Arab and Middle Eastern countries. Its deep-sea ports on the Mediterranean made it possible for large oil tankers to dock. Many major companies had hubs on the peninsula. The Americans considered oil a strategic asset and it was no coincidence that a large chunk of Marshall Plan aid went to importing this raw material and the infrastructure to process it.

Previous pages:  
at the opening,  
Edoardo Garrone shows  
Mons. Giuseppe Siri  
the new installations  
at the Colisa depot (1950);  
page 32, Edoardo, his  
daughter Carla and Mons.  
Siri visiting workers'  
homes (1951).

These pages:  
left, the inauguration  
of the new San Quirico  
plants (1951);  
right, homage to Edoardo  
Garrone at the Arquata  
Scrivia depot (1965).



ERG began to make a name for itself during this period. The refinery's logo was a die (from 'Dado,' the diminutive of Edoardo, used by his friends) on a white background, with a three-letter acronym, REG (Raffinerie Edoardo Garrone). But since the logo was triangular, the letters could also be read in a different order, as ERG. Edoardo had nothing against this 'interpretation,' which soon entered the company's lexicon and later became its official name.

In the early 1950s, Garrone decided to enter distribution as well. He founded Italiana Carburanti and bought approximately 300 petrol stations in Liguria, Piedmont, and Tuscany. The network was still regional since all the petrol stations were located within 200 kilometres of where the gas was produced, but Edoardo was already planning to expand beyond the Apennines. In 1954, Gian Piero Mondini joined ERG. A few years later, Mondini married Garrone's daughter Carla and ran the company with his brother-in-law Riccardo for 40 years. ERG was in full expansion and to ensure a steady supply of oil signed an agreement with giants British Petroleum in 1956. In 1958, the economic boom starting to sweep across the country arrived in San Quirico, where the Garrone refinery had expanded and was working at full capacity. The plant had officially begun production in 1947; 10 years later it was processing 1.62 million tonnes of crude oil and had an estimated value of between 12 and 16 billion lire.

In 1960, demand had increased to such a level that the company began to work on updating its technology and doubling its productive capacity. Edoardo had new projects in mind, such as a major refinery far away from Genoa. As an insurance policy, he named his son Riccardo as an active partner and manager in case of his death, even though he was in perfect health. It seemed like a needless worry and yet his prudence proved to be providential on 11 July 1963 when he died unexpectedly during a fishing trip in Norway at the age of just 57.

Garrone had run his company with a handful of highly-trusted collaborators for 25 years and it was feared that the company would go into rapid decline following his death. Riccardo was only 27 years old and had never worked at executive level but the company was expanding at full tilt and quick decisions were needed. In this situation, ERG revealed one of the characteristics which would become a hallmark throughout its history: the bond between the family and its employees. Management and staff closed ranks around young Riccardo, recognising his authority and making him their leader. His father's collaborators offered their help; the workers proved their loyalty to the refinery. A great wave of affection and esteem surrounded the Garrone family and the new chairman soon revealed his quality. Within just a few months he had the reins of the company firmly in hand and ran it like an experienced captain of industry.

The founder's sudden death brought another key aspect of ERG's story to the fore: the value of family, a vital resource for the company's continuity and a trump card down the years. This is shown by the bond and the harmony between the Garrones and the Mondinis, which would prove to be particularly decisive in difficult moments. Indeed, the two families went on to form the Edoardo Garrone Foundation in 2004, in memory of the founder of the Group. Gian Piero Mondini fulfilled several roles in the company's top management, including Chief Executive Officer and Chairman. Today, Giovanni, Gian Piero's son, is Deputy Chairman and a member of ERG's Strategic Committee.





Previous pages:  
the ERG service station  
on Via S.S. Giacomo  
and Filippo in Genoa  
(1951-52).

These pages:  
left, Riccardo Garrone  
inaugurates the Arquata  
Scrivia depot (1966);  
centre, some of  
the mechanographical  
system staff (in the 1960s);  
right, the members  
of the Girardengo/ERG  
sports club during  
the Genoa-Nice cycling  
competition (1957).



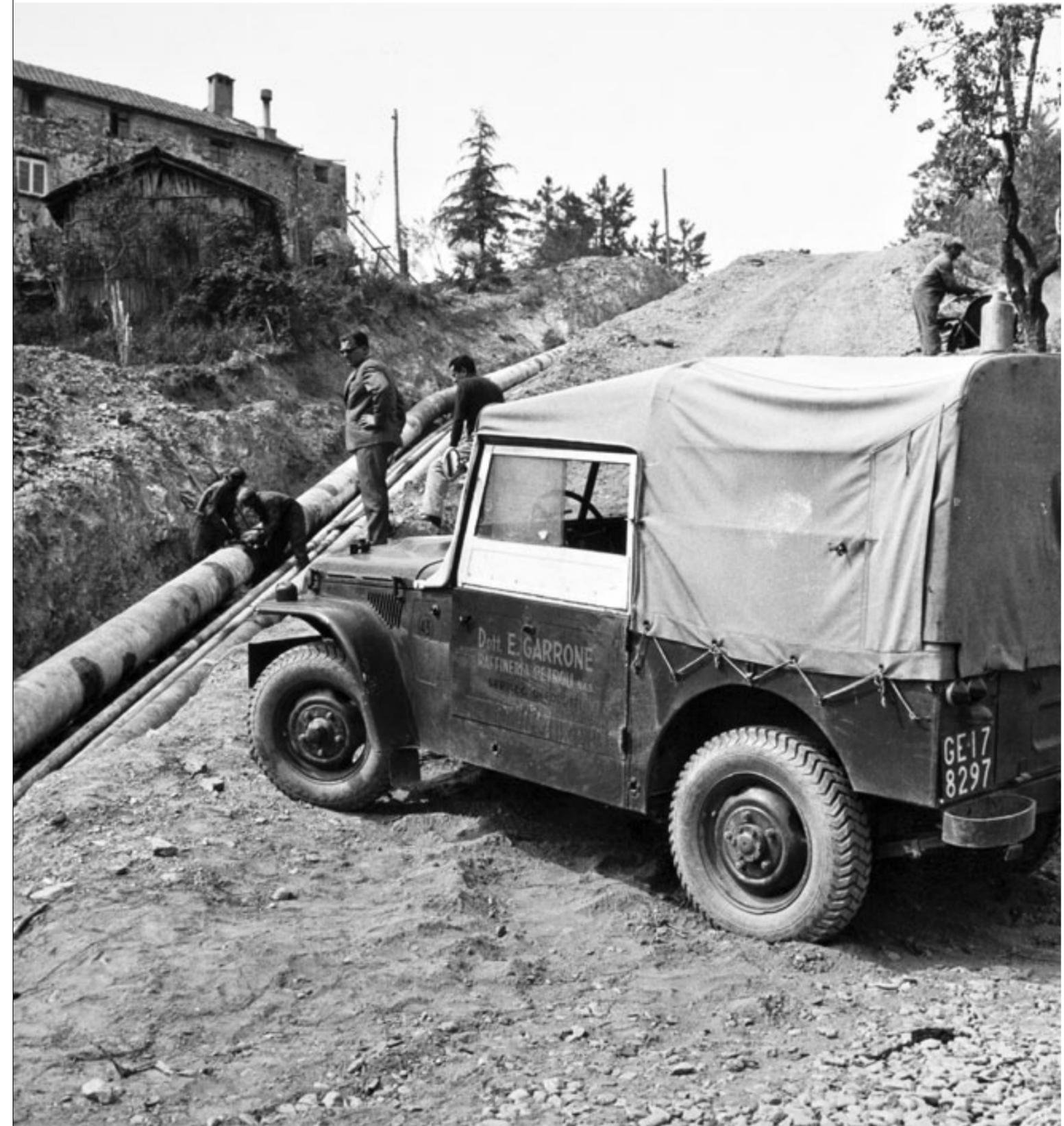
### The 1960s and 1970s: growth, crisis, and new opportunities

Riccardo took charge during a period of profound social, economic, and cultural transformation. The Marshall Plan had supported Italy's economic recovery and the development of competitive mechanical, electromechanical, and steel industries, and within just a short time the country was transformed from a predominantly agrarian nation into a modern industrial power. The years of the 'economic miracle' had begun: in 1961, for the first time the industrial workforce outnumbered the agricultural workforce. The symbols of increasing wellbeing were spreading wide in the form of small cars, televisions, and washing machines. Italy faced student and women's rights protests but optimism was in the air: economic growth was tangible and humans were about to land on the moon.

Against this background of strong growth, Riccardo began to implement the projects that his father Edoardo had initiated, such as the construction of a 35-kilometre oil pipeline between Genoa and Arquata Scrivia, in the province of Alessandria. This gave the refinery a logistics system for transporting its oil products between the sea and the inland area to meet the company's growing production capacity, making it easier to cross the Apennines without relying on the limited road network. This gigantic and ambitious project was concluded in 1965.

But soon, decisions regarding the company's future had to be made: potentially risky choices with long-lasting consequences. Despite the predicted continuation of the 'boom,' the geopolitical and economic context was about to change once again.

At the start of the 1970s, the company had a structural problem: consumption forecasts were good but even though the San Quirico refinery had been updated in the early 1960s, it had been operating for 30 years and had technological shortcomings which needed to be overcome. It was not as profitable as modern plants. Moreover, its concession was to expire in the 1980s and, despite every effort, could not be renewed. The idea of building a new refinery in Novi Ligure met insurmountable obstacles. A question nagged in the offices in Genoa: what will happen to ERG when San Quirico is forced to close? A refiner without a refinery is forced out of the market. A solution had to be found and an opportunity presented itself when the company received an offer to join ISAB (Sicilian Asphalt and Bitumen Industry), which was run by a group of shareholders headed by the Genoese shipowner Filippo Cameli, whose partners included IFIL, belonging to the Agnelli family, and Eni. This industrial group wanted to construct a large refinery in Sicily, in Syracuse, and after carefully studying the project, Riccardo decided to join it. His participation gave new impetus to the previously unsuccessful attempts to find a site where the new plant could be constructed.



Previous page:  
the construction  
of the Arquata Scrivia  
oil pipeline (1962-63).

This page:  
Aldo Moro visiting  
the ERG stand at Genoa  
Trade Fair (1965).



It was a colossal investment: the estimated cost was 156 billion lire and could exceed 300 billion. The goal was to create a large refinery, which would also prove to be the last one built in Italy and one of the last in Europe. The chosen site was Marina di Melilli, in the petrochemical district around Augusta, Priolo, and Melilli, in the province of Syracuse. It was hoped that the presence of a well-established production facility would speed construction of the new refinery.

Eastern Sicily was chosen because of its strategic position: it lies along the 'oil road' connecting Libya, Tunisia, and Algeria – countries that export low sulphur crude oil – with European buyers, who were increasingly demanding clean, high-performance fuel. The project called for technologically advanced equipment: a greenfield refinery for ecologically-advanced products such as low sulphur oil and low lead fuel. These products were in great demand on the US market and were forecast to grow in Italy as well with the rise in environmental awareness.

The environmental and safety requirements were very high: all waste products were treated before being released into the environment in order to neutralise them as efficiently as possible; there were systems to recover sulphur and clean up refinery gas, for liquid waste treatment and sound-proofing. The emissions were all channelled into two large smokestacks which were constantly monitored. At the time, it was a cutting-edge system compared to refineries of that era in which every source of emissions had its own smokestack and the monitoring of the quality of the emissions was only carried out once a year.

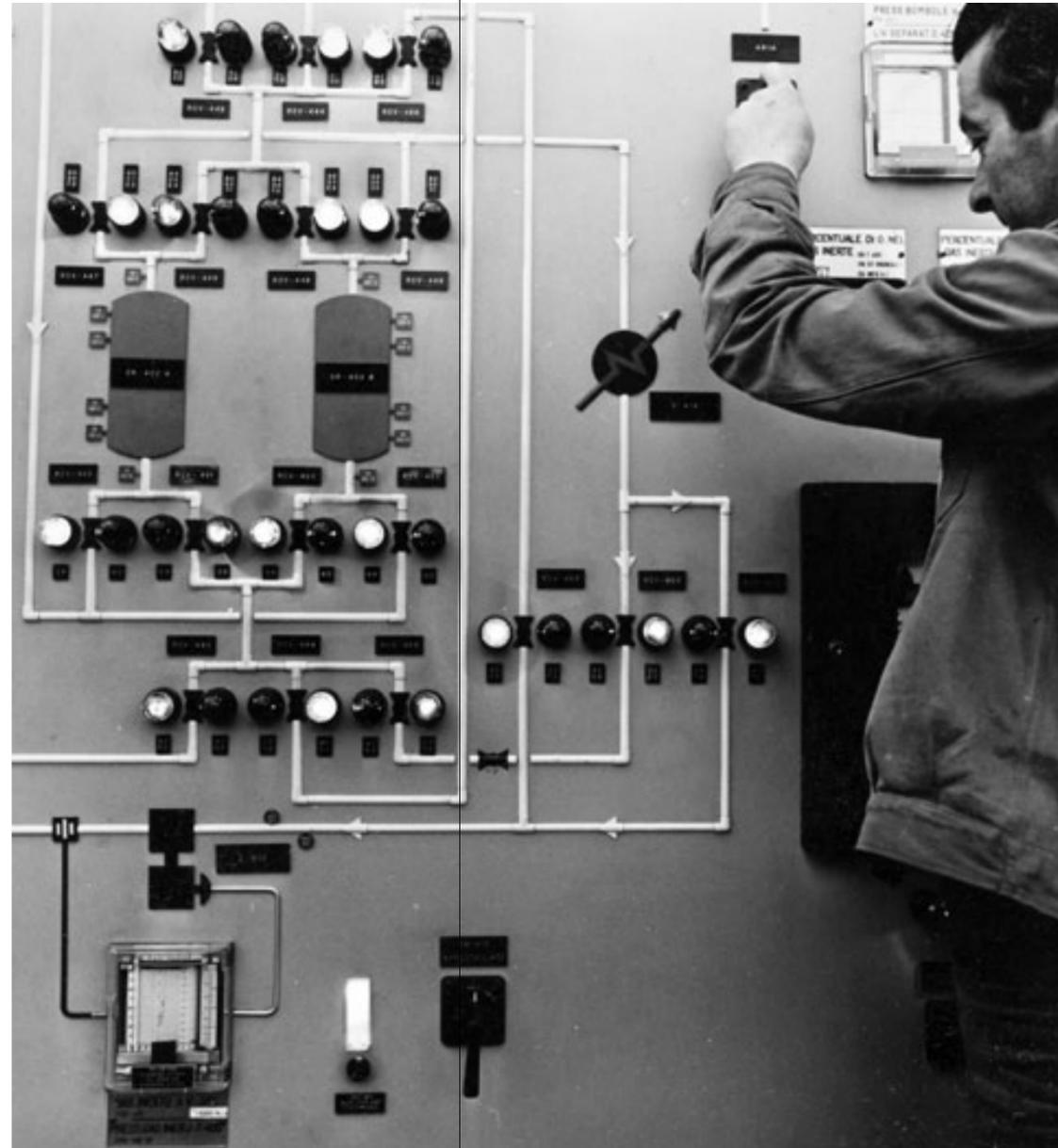
Riccardo and everyone at ERG fell in love with the new plant and the land on which it stood, and this love was reciprocated. In a short time, a strong, long-lasting relationship of reciprocal trust and cooperation was developed with Sicily and the Sicilians. The scenarios were all positive and demand for oil products was on the rise. Nothing presaged that once the agreements were signed – and ERG had put itself entirely on the line with costly investments as it began to construct its second refinery – the fourth Arab-Israeli conflict would brutally change the global energy situation.

In 1973, ERG was processing 7.3 million tonnes of crude oil at San Quirico, an absolute record; but this was also the year of the first great oil crisis. The Italians, who had only recently begun using cars, found themselves on foot again and factories had to cut production because of the sudden price rises decided by OPEC – the Organisation of Petroleum Exporting Countries – in retaliation against countries that supported Israel. The spike in prices was a harsh and unexpected blow. Initially, the price of oil doubled, but one year later, it had quadrupled. The national economic system, like the international system, was unprepared for this unprecedented lack of fuel and experienced a profound crisis.

The entire post-war reconstruction and the 'boom' years had been based on the availability of low-cost fuel as a resource – not just for industry, transportation, and heating, but also for the new production of plastics, detergents, and paints. The dizzying price rise was a setback and the economic cycle was soon inverted: it was the beginning of a period of austerity, a recession that soon affected the country's entire business and social fabric. It was an unprecedented crisis for refiners, as well. Some believed it was the end of the oil era and the government took remedial action, initiating a series of measures to save energy for the first time.

The repercussions were serious: Italy and much of the world was plunged into crisis. In late 1974, roughly 5,000 people – construction workers and technicians – were employed at the construction site at Marina di Melilli; costs were sky-high and the oil crisis struck at a moment of double-digit inflation and widespread union unrest which put investors in great difficulty. Production began in 1975 but consumption had nosedived as had the environmental concerns of the world's governments, which loosened the rules governing the supply of the low-sulphur petrol that ISAB refined. Thus, right from the start, the refinery's management had to deal with a changed strategic framework. They had to consider the possibility of operating without the subcontracted processing which had initially been planned and bank instead on internal flexibility, investing more money in new processes such as cracking in order to produce other petroleum derivatives for the Italian market.

These pages:  
centre, a technician  
at a control panel  
of the Arquata Scrivia  
depot (1975);  
right, Riccardo Garrone  
accompanies then  
Minister of Industry  
Giulio Andreotti on a  
visit to the Arquata  
depot (1967).





These pages:  
left, aerial view of the  
ISAB refinery under  
construction (1970s);  
right, detail of the  
innovative control room  
at ISAB (1976).





### The Years of Leed

The oil crisis didn't only affect the trend of ERG's activity; it also affected the Garrone family, which personally paid the price. The economic collapse which followed the first oil shock left a deep mark on the Italian people, who tended to blame the high prices on refineries and distributors. Social discontent, combined with the so-called 'oil scandal,' put the Garrone family in the violent crosshairs of the Red Brigades, Italy's most prominent terrorist organisation in those years. Genoa had one of the most active Red Brigades groups and it was almost inevitable that their attention would eventually turn to Riccardo Garrone, who was one of the city's most prominent industrialists. The family was also threatened by the Anonima Sequestri criminal organisation and, after the first warning signals, in 1973 the Garrone family decided to move from Genoa to their house in Grondona, in lower Piedmont, where they had owned a country house since the mid-1950s. Since there was only one road leading in and out of Grondona, it was easier to monitor but nonetheless their fears continued to grow. Riccardo's young sons, Edoardo and Alessandro, the future heirs who were destined to run the company, were sent to study in Turin, where it was easier to guarantee their safety.

After a period of adjustment, the international scenario soon worsened once again. ERG began updating its San Quirico refinery; the project was completed in 1982, but between 1979 and 1980 a halt to Iranian supplies and the outbreak of war between Iran and Iraq sparked a second oil crisis. This time, the price of crude oil was much higher than in 1973 and this took the refineries back into the eye of the storm.

One evening in early December 1979 Riccardo Garrone, who had almost never taken a day off, called a family meeting and, to the astonishment of one and all, announced that they were all going skiing in Austria. The next morning, the family set off but when they arrived they realised that their destination wasn't Austria but Lugano, Switzerland, where they remained incognito for roughly six months, until they felt that the threat from the Red Brigades and the Anonima Sequestri had finally passed.

The oil crisis taught an important lesson: the number of direct and indirect risks are connected to the instability of the markets. It was an 'oil lesson' which ERG had already learned in part, having faced the difficult war years, but the company took the lesson to heart and came out of the crisis even stronger and ready to take on new challenges.

### The new Sicily facility: a stimulus to continue evolving

For anyone with their eyes open, periods of crisis are also when the best opportunities might arise. ERG knew that its strong points were flexibility and the ability to quickly reorientate its industrial plans and it took the first steps along a new pathway leading to growth and the consolidation of its fuel networks. The company knew the only possible way to limit risks was to personally sell the products which ISAB produced. In 1984, when major oil companies had decided to abandon Italy, ERG chose to swim against the tide and purchase the entire Italian network owned by the French ELF; two years later, they acquired Chevron Oil Italiana. After these two operations, ERG controlled about 2,800 service stations and created the ERG network, whose three rampant panthers roared at drivers along almost every road in Italy. This big new company was called ERG Petroli.

Between 1975 and 1989, 12 Italian refineries shut down. The San Quirico refinery eventually joined the list, despite ERG's efforts to save it by continuing its investments until the last years of the concession in order to keep its production competitive. In 1988, the refinery was closed once and for all. The area was reclaimed and then sold in the mid-1990s. The Group then concentrated on Sicily and became the majority shareholders of ISAB in 1985; it continued to increase its stake over the following years until it reached 100% in 1997. However, market fluctuations were a familiar occurrence by then and at the end of 1993 ERG decided to further diversify its portfolio.

This coincided with the new project with Edison Mission Energy (49%) to construct – again at Priolo – ISAB Energy: a 528 MW power station, Italy's first IGCC (Integrated Gasification Combined Cycle) plant, which produced electricity directly from refinery by-products by gasifying the heavy oils generated by the processing of crude oil.

This was an unprecedented industrial operation for Italy, made possible by 1,800 billion lire in project financing that broke the ground for similar operations which, in the following years, were successfully carried out in California. The plant began production in 2000 and uses two gasifiers to convert tar, a residue of the refining process, a gaseous mixture of carbon monoxide and hydrogen (syngas) to then produce electricity and steam, through a combined cycle plant, and hydrogen through appropriate membrane filters. The IGCC production process is useful to the refinery, which sells the material with a high sulphur content and enables it to produce electricity, steam and hydrogen with a low environmental impact.

When the IGCC plant of ISAB Energy became operational in Priolo, it marked ERG's entrance into the power market. It was also the first in Italy and the third worldwide to produce syngas from asphalt, another example of ERG's foresight and forward thinking. In the early 1990s, a new concept of refineries emerged in Europe; they were no longer considered merely plants that transform petroleum but genuine energy centres. As well as reducing the refinery's environmental impact, ISAB Energy soon became a real watershed for the company. Step by step, a multi-energy strategy took form, which aimed to shift the Group's focal point from refining to the production of electricity, in order to reduce its vulnerability to the instability of the oil industry.



Previous pages:  
page 48, the Arquata  
Scrivia depot (1980s);  
page 51, the ISAB/ISAB  
Energy oil-pipeline bundle.

This page:  
Stock Exchange entrance  
on the day of ERG's  
listing (1997).



### Listing on the Stock Exchange and multi-energy strategies

Set up as an individual company called Raffinerie Edoardo Garrone, ERG kept this legal status for the next 20 years. In so doing, the company managed to remain administratively and bureaucratically streamlined despite its exponential growth in turnover, production, and workforce. Its ability to adapt quickly to the variability of market conditions was one of its strong points in those early years. Power was clearly in the hands of its founder, Edoardo. In 1959, when ERG was transformed into a limited partnership to improve its access to credit, Edoardo also became a general partner and, for the first time, his wife Giulia and their children Riccardo and Carla also became involved.

In 1965, two years after Riccardo took over following the death of his father, the S.a.s. (limited partnership) turned into ERG S.p.A. (joint stock company) to allow a new inflow of capital and support growth. This was the beginning of a process of transformation in governance. Unlike many companies that were created and remained family-run, over time ERG decided to let the management have a say in running the company. Transparency and efficiency became its hallmarks and ERG was listed on the Stock Exchange in the 1990s.

In October 1997, the company was listed for the first time on the Telematic System of the Italian Stock Exchange with a public offering – and sales in Italy – of 70.25 million shares and a private placement of 30.75 million shares for national and foreign institutional investors. The operation was a huge success: demand exceeded the stock offering tenfold and the final price on the first day it was listed was 7,300 lire, or EUR 3.77. This figure progressively grew over the years until it topped EUR 20. The Group's listing on the Stock Exchange gave it the power and the size it needed to limit market risks, consolidate itself, and, above all, take advantage of the opportunities for diversification when the energy market was liberalised. And it couldn't have been a more propitious moment.

By the end of the 1990s, the global and European framework of energy production was going through a period of structural and regulatory transformation. On the one hand, this was due to a growing awareness of environmental, climate-related, and geopolitical topics, while on the other hand, it was sparked by the receptiveness of the energy market. For ERG, the early 2000s were marked by a new transformation with multi-energy strategies which, in just a few years, significantly changed its market positioning.

ERG was no longer just an operator in the oil industry; it had been diversifying its activities for a long time, investing in the sector of the production and sale of electricity. From then on, it focused more attention on renewable energy, and in just a few years had laid the foundation for its growth in this sector as it progressively abandoned oil and gas refining and distribution.

### Passing the baton from the second to the third generation

No one knows exactly when the decision was made, when it became clear to Riccardo Garrone that the moment had come to take another step forward with a new top management for the company and new commitments for him. The year was 2002 and it marked the birth of ERG Raffinerie Mediterranee (ERG Med, 72% ERG and 28% Eni), which was endowed with one of the largest refineries in Europe, the supersite at Priolo. ERG had just acquired the former AGIP refinery in Priolo; it was integrated with the ISAB refinery through a new system of oil pipelines, and major work was conducted to adapt and improve the efficiency of its production.

It was one of ERG's last major operations in the oil sector. This time, too, the initiative went decidedly against the tide since companies were beginning to sell off or close down their refineries in those years. Instead, ERG decided to buy one. This decision proved to be extremely profitable: thanks to the improvements and the size of the plant, its productivity was high and the plant was able to respond to the stagnation of the refining industry.

At that time the organisational layout of the Group was structured in three sub-holdings: ERG Petroli, which dealt with downstream integration – refining, distribution, and sales – ERG Raffinerie Mediterranee, for coastal refining; and ERG Power & Gas, dedicated to producing and selling electricity and natural gas.

Riccardo was 66 years old and at the peak of his success: he was loved and respected as an industrialist and as a father, and he made a decision at a crucial moment for the company. He told his family first, at a large Christmas dinner at his home. In his steady voice, he announced he was stepping down as Chairman and that the then-Chief Executive Officer, Pierantonio Nebuloni, would be resigning. He wanted his sons to succeed him: if the company was to continue to grow and evolve, it had to be put in the hands of a new generation, the third.

In 2002, Alessandro was named CEO and the following year Edoardo became Chairman. Many people wondered what their relationship with their father would be like. For almost 40 years Riccardo had been the key figure in the company; he stayed on as a Board Member and was later named Honorary Chairman. But the day his son Edoardo became Chairman of the company Riccardo emptied his office, leaving the keys behind: it was an eloquent gesture, which suggested how he would behave from then on. His words when his sons took over confirmed his esteem for them and his faith in the handover: "Today, I entrust this Group to the third generation of our family. I am passing the symbolic baton to my sons Alessandro and Edoardo, and to my nephew Giovanni Mondini, with serenity and the certainty that they, together with the management, will guide the company, honouring and promoting our history and our values. I believe that my son Edoardo, as Chairman, is the right person to guarantee our continuity, the continuity which every successful company needs."





Previous page:  
Riccardo, Edoardo  
and Alessandro Garrone  
on 24 June 2008  
at the signing of the  
agreement with LUKOIL,  
on the left Luca Bettonte,  
CFO and future Chief  
Executive Officer.



These pages:  
left, Riccardo Garrone  
greet attendees  
at the 30<sup>th</sup> anniversary  
celebration of ISAB  
in Syracuse (2005);  
below, Riccardo  
and Alessandro in Rome  
and right, Riccardo and  
Edoardo in Genoa  
in two photos from  
the *From Oil to Energy*  
book launch (2008).



The Garrone brothers had to make complex strategic choices, which led to constant and inexorable changes. In those years, agreements were signed with LUKOIL, which entered the ISAB refinery's capital stock (2008) and with Total to create TotalErg for fuel distribution (2010), stages in a process that gradually led the company out of the oil sector and into the world of renewable energy sources, first wind, then hydroelectric, and lastly solar energy.

Although ERG was proceeding at full speed and changing its skin, it maintained its identity. The former Chairman backed all the choices: he was born a refiner and an oil man but he supported the path his sons were taking. Riccardo was in agreement with the divestment of the Priolo refinery, even though the plant and the people working there had been an integral part of the ERG family for many years. He agreed with the project to create the TotalErg joint venture, even though distribution had always been an important link in the company's value chain. He also agreed with the company's entry into wind sector, even though he wasn't completely convinced about the future of renewable energy sources. But he had complete faith in the management and it soon proved to be a winner: over the years, these choices have led to the results we see now, increasing the company's profitability and solidity, supporting improvements in environmental performance, and, finally, the green evolution, of which the entire Group would become very proud.

***The wind of change.***  
**Leaving oil refining and insight  
into renewable sources**

Powerful winds of change began to blow when the baton passed to Edoardo and Alessandro and within roughly 10 years completely transformed the face of ERG. It was the early 2000s, the oil sector was enjoying a period of relative stability, and nothing yet hinted at the oil crisis and the economic crisis that would strike at the end of the decade. The Kyoto Protocol, which was signed in 1997, had not yet come into force in Italy; in the years to come, it would encourage many energy companies to orient themselves toward renewable sources. And yet the Group, which had navigated the vagaries of the international petroleum market for 70 years, was realising that a new change was necessary: it has always been in its nature to investigate the future and foresee risks and opportunities. ERG, organised as a multi-energy business, was active in the refining of crude oil, the distribution of oil products, and the production of electricity. It managed one of the largest and most efficient refining facilities in Europe, the ISAB refinery, and it was Italy's major exporter of oil products.

Managing such a multifaceted business model was a highly complex undertaking, even in relation to the size of the company. These very particular production systems call for a high level of specialisation, and in this period, constant internal training played a key role and continued to do so in the years to come, in order to quickly adapt to new production methods and dynamically face the ongoing changes in the energy-producing panorama, in Italy and abroad. The relative stability of the oil sector for several years had allowed ERG to consolidate, and yet there was a widespread feeling that it would be risky to continue to focus on oil. The Group wasn't present along the entire value chain but only in the segments of refining and distribution, and its profitability depended to a great degree on the increasing instability of oil prices.

Between 1985 and 2007, the price of oil fluctuated between 35 and 40 dollars per barrel and refinery technology was largely Western; this scenario was rapidly changing. For 50 years Europe had been the geographical area where crude unprocessed oil from Arab countries was purchased and where oil products were refined and sold. But in the early 2000s the technology developed and spread to various countries throughout the world; many new refineries were constructed near the wells where the oil was extracted. The focal point of consumption shifted east, and the combination of the most recent technology available and the drop in crude oil transportation costs made these new refineries more efficient and profitable than the previous ones.

The first decade of the 2000s was a period of deep structural change: globalisation reduced distances, geopolitical instability in the Middle East worsened, the banking world was shaken by the subprime mortgage crisis, and many countries went into recession for the first time since the end of the Second World War. ERG's managers, expert navigators, saw stormy clouds on the horizon: it might be risky to stay anchored in the oil refining sector in such a rapidly changing global framework. Although perfectly efficient, the machinery at the ISAB refinery was old and, thus, structurally less competitive than more recent plants. ERG's portfolio was still top-heavy in the oil sector; thus, the strategy taking form was to diminish their participation in oil, in part through foreign partnerships.

It was the start of a reconnaissance period to identify possible partners among the international sector leaders. In the meantime, with foresight, the Group also began to orient itself toward renewable sources and began the change which would transform its identity in the coming years. A first opportunity presented itself in 2004 when the Spanish company CESA decided to invest in wind farms in Italy and was looking for a local partner. ERG had significant profits to reinvest and it was the right moment to try its hand in a completely new sector. The agreement was signed.

In 2006, the company's foray into wind farms continued when it purchased EnerTAD, a company listed on the Stock Exchange whose portfolio had roughly 200 MW of wind energy. After approximately one year, again through EnerTAD, it entered the French market and purchased five wind farms totalling 55 MW of installed capacity. The Group's repositioning process began to take form.

The renewable energy sector was still fluid and uncertain at the start of the millennium and the going was not easy. Investments in the new sector didn't immediately provide the expected returns and some investors were discouraged. Nonetheless, the Group showed its determination and vision by choosing to continue along this path. The problem of the excessive weight of refining on ERG's assets remained unresolved until the Russian company LUKOIL showed interest in purchasing the refinery – and even the entire Group. LUKOIL was one of the world's major oil companies; its intention was to penetrate Western Europe and it considered Italy, and in particular Sicily, the perfect logistic hub for developing this strategy. The Chairman of LUKOIL was on holiday in the Mediterranean and proposed a meeting in Corsica. Edoardo and Alessandro Garrone and Giovanni Mondini quickly consulted with each other and accepted the invitation: all that lay between them and what could become a watershed moment for the company's future was a bit of sea, the same sea they saw from the windows at their headquarters in Genoa. It was a meeting at the highest level and in just a few hours they decided to organise a working group to study the feasibility and conditions for an agreement.

The rest is history. LUKOIL wanted to purchase ERG in its entirety but the company was not for sale. Thus, the negotiations concentrated solely on refining. A joint venture was negotiated which allowed ERG to maintain 51% and transferred 49% to the Russian giant; it included a put option (the possibility to sell their own assets at an agreed price on or before a set date) which guaranteed that ERG could pull out if the shared running of the refinery, if it proved to be too difficult. Both parties were pleased with the agreement, which fully satisfied their respective strategies.

It was June 2008, the price of oil continued to rise, reaching 147 dollars per barrel before dropping sharply. It was an oil crisis. The refinery began to register negative yearly gross operative margins. ERG did not have LUKOIL's deep pockets and it was impossible to continue covering these losses in the long term. Quick countermeasures were needed. The management considered every possibility and after careful reflection they realised that the only possible way was to abandon oil refining. The refinery was the heart of ERG, both economically and in the company's affections, but the moment had come to say goodbye. Moreover, thanks to the signed agreements and the protection clauses that had been inserted in the contract, it was an extremely advantageous exit strategy. Because of the oil crisis, the refinery's market price had collapsed to one third of its former value but the put option had frozen the price at the evaluation made in 2007: EUR 2.75 billion. From then on, the Group began to leave the oil sector for good, and in three years' time it had sold its stake in the refinery to LUKOIL.

ERG was ahead of its main competitors as it optimised and later divested its oil assets, and increased its presence in the green power market.



These pages:  
left, the ISAB Energy  
IGCC plant  
(commissioned in 2000);  
right, an ERG service  
station (2007).



These pages:  
top left, Domenico D'Arpizio, Deputy Chairman of ERG, and Riccardo Garrone during ISAB's 30<sup>th</sup> anniversary celebration (2005);  
below left, various members of the Garrone and Mondini families with H.E. Cardinal Angelo Bagnasco (2008);  
centre, Riccardo Garrone and his wife Anna Maria at the inauguration of the Carlo Felice Theatre, after its restoration (1991);  
right, Pierantonio Nebuloni, Domenico D'Arpizio and Riccardo Garrone at the year-end meeting with employees (2000).





TODAY

### Progressively leaving the world of Oil

In the agreement ERG signed with LUKOIL in June 2008, which led to the creation of NewCo ISAB, the clause giving ERG the possibility to exercise a put option for its 51% shareholding reads as follows: "The option rights may be exercised, in full or in part, in one or more instalments, over a period of five years beginning the second year after the Agreement's date of fulfilment." ERG progressively divested from NewCo, selling 11% in 2011, 20% in 2012, and the remaining 20% the following year.

In this same period, in January 2010 ERG Petroli and Total Italia signed a joint venture agreement which created TotalErg (51% ERG, 49% Total), Italy's third largest distributor of oil products, with a market share of roughly 12% and more than 3,300 service stations. When ERG's presence in downstream products ceased to be strategic for the company, it launched a project to dispose of its holding in the joint venture. By the end of 2017, after one year of negotiations, which sought as always to find a solid partner that could ensure continuity, TotalErg was sold to the api Group. ERG had definitively left the oil sector.

Both the agreement with LUKOIL and the agreement with Total were key steps in the process of transforming ERG; first of all, they diluted the risks inherent in the oil sector and, secondly, they allowed ERG to leave the sector without any repercussions and on advantageous conditions. The two agreements showed clear vision and remarkable negotiating ability. One of the company's hallmark traits has always been its ability to create partnerships with major international businesses in the sector, negotiating as equals.

ERG used the liquidity from the sale of its oil assets to boost its investments in renewable energy. In 10 years, through divestitures and acquisitions, roughly EUR 8 billion has been used to generate a new future, the offspring, in Edoardo Garrone's words, of "an industrial history that has meant a lot in terms of experience and competence, which are, and will always be, our true capital."



### Corporate Social Responsibility: a new development model

The turbulent growth and change that shook the worldwide economic system in the second half of the 20<sup>th</sup> century introduced new development models, processes of technological innovation, and, last but not least, a new direction in terms of economic theories and company missions. The concept began to take hold that a company's value doesn't lie solely in its figures, in its ability to generate profits, which are, in any case, essential for its survival. It must also produce medium- and long-term value, be resilient, and adapt to the rapid evolution of today's world.

Sustainability and a new, ethically responsible corporate culture are the underlying principles of the concept of Corporate Social Responsibility (CSR), which began to take form in the 1980s. A passage in the European Commission's *Green Paper* on corporate social responsibility reads as follows: "Being socially responsible means not only fulfilling legal expectations, but also going beyond compliance and investing 'more' in human capital, the environment and the relations with stakeholders."

The three major concepts of CSR are the creation of sustainable value, respect for the environment, and attention to relations with stakeholders. With the creation of Corporate Social Responsibility, for the first time these considerations officially became part of the strategic vision of companies, catalysing a mechanism of relations with the local community which manifest as activities aimed at improving the social fabric. Values that fully correspond with those that ERG has held dear since its foundation.

### Relations with local communities and the CSR model adopted by ERG

ERG has always aimed to build solid relations with the communities in which it works, creating opportunities for mutual exchange and fostering development. The company's founder and his successors have always had people's wellbeing at heart and developed company welfare policies that were ahead of their time, as witnessed by iconographic documents and the reminiscences of former employees.

Back when the concept of CSR was still to be propagated and codified, ERG had already initiated various 'corporate responsibility' projects for its staff and local communities. For example, one major initiative spearheaded by Riccardo Garrone was the renovation of the Teatro Carlo Felice in Genoa, which had been heavily damaged by bombing during the Second World War. Shouldering the economic burden, Riccardo gave the city its cultural and musical heart back, an architectural jewel which was restored to its former splendour and reopened to the public in 1991.

Still today, ERG holds true to its principles, which are in line with those of major international groups: to create sustainable value over time for its stakeholders; to safeguard the environment and local areas; to train its employees and ensure their safety.

The fundamental values of ERG's business activities can be found in the Code of Ethics that the Group adopted in 2004. It is an instrument for increasing the awareness of its employees and partners, who are invited to respect standards of civility, transparency, and anti-corruption. The Code of Ethics is a series of positive principles and rules governing behaviour, which inform company actions and are a point of reference for daily activities. Health and safety in the workplace takes centre stage and is actively pursued, creating awareness among people and encouraging their active participation in every task they undertake.

Environmentally, the Group far exceeds the legal requirements, always aiming for the best practices in the sector: all operating sites and branches in Italy are certified according to international standards, and its international sites have also begun this same certification process.

Regarding transparency and ongoing dialogue with the local communities, for over ten years ERG has voluntarily published a Sustainability Report which, besides providing the relevant information on the economic, environmental, and social impact of its activities, also lists its set objectives and registers the achieved results. In addition, the ERG Power thermoelectric plant in Sicily and the hydroelectric plant in Terni are registered on EMAS (Eco-Management and Audit Scheme), in keeping with European regulation CE 1221/2009: the plants update their environmental statements every year and renew them on a three-yearly basis. The Group's move towards renewable energy sources is also reducing its carbon intensity index by 88%.

ERG's cultural and social commitment is an important part of its CSR model and follows three primary guidelines: *environment, health, and social development; culture and knowledge; and young people and sport*. The new generations are a key reference point for ERG, which organises educational projects on energy topics, supports sports events, and fosters startups.

The two flagship initiatives are *ERG Re-Generation Challenge* and *Vai col Vento!* The first is a business plan competition, which offers students, startupper, and businesses the opportunity to develop highly innovative initiatives in the field of renewable energy and sustainable development. The second is an environmental educational project which constantly raises awareness of climate change and the development of renewable energy sources and also offers tours of ERG's wind farms to roughly 1,500 middle school students from the communities where the farms are located. A similar initiative, *A tutta acqua!* has been developed in the communities near its hydroelectric plants.

Another distinctive trait of ERG is its support of cultural activities of excellence in the communities in which it operates. For example, the company supports INDA, the National Institute of Ancient Drama Foundation, which, since 1914, has organised and staged cycles of classical plays at the Greek Theatre in Syracuse, and at Umbria Jazz, one of Europe's most important jazz festivals.

ERG also helped finance reconstruction of the library at the Roio university site in L'Aquila, which had been seriously damaged by the earthquake in April 2009. Thanks to this reconstruction project, an institution, an important area, and an archive housing over 22,000 volumes were restored to the students at L'Aquila.

#### The Edoardo Garrone Foundation (FEG)

The Garrone-Mondini family's commitment doesn't stop with ERG. In late 2004, Riccardo established a cultural foundation dedicated to the memory of his father, to provide new impetus to the family's social commitment with practical and innovative cultural projects, specifically aimed at young people, a key resource for the country's civil, social, and economic development.

He led the foundation until January 2013. After his death, his son Alessandro stepped into his shoes and has continued the activities and educational projects for future generations, activities which follow criteria of consistency and quality. Under his guidance, the educational activities dedicated to the city of Genoa, culture, and fundraising were augmented by the *Progetto Appennino* ('Apennines Project'), to which his father had been very attached. This project promotes initiatives that foster a true culture of mountain areas, creating and strengthening a new 'Italian mountain economy,' which can offer concrete opportunities for innovative models that promote settlement and business opportunities. Starting in 2014 in the Apennines, and in 2016 in the Alps, the Foundation also inaugurated the ReStartApp and ReStartAlp campuses, open to aspiring entrepreneurs under 35 years of age, to support Italy's mountain businesses, stimulating synergy and exchange between the Alps and the Apennines, and focusing on the development of local excellences.



**FONDAZIONE  
EDOARDO  
GARRONE**



### The construction of the CCGT plant

Alessandro Garrone speaks of "A balance between continuity and evolution." This is a good definition of ERG's journey to its new business model. And Priolo Gargallo is one of the best symbols of this philosophy. The area near the historical Sicilian refinery was the site of an innovative project for which ERG signed a EUR 330 million project financing contract in 2010. The natural gas thermoelectric power plant became fully operational that year and has become a keystone of the Group's energy mix.

A number of companies coexist and work in synergy in this highly concentrated industrial site. One of the most important is the ISAB Impianti Nord refinery, but there are also petrochemical plants such as Polimeri Europa (now Syndial) and Consorzio Priolo Servizi, which provide auxiliary services to the factories. The activities of the thermoelectric power stations located along the periphery of the ISAB refinery were highly integrated with these plants and the steam, electricity, and demineralised water they produced were essential to their functioning. ERG decided to substitute them with a modern, high-efficiency, combined cycle cogeneration plant (CCGT, Combined Cycle Gas Turbine) fuelled by natural gas.

The 480 MW capacity power station comprises two identical modules, each of which has two gas turbines and one steam turbine. The electricity produced has two destinations: the largest part feeds the national electrical grid, and roughly one quarter is used onsite to power the industrial machinery of the petrochemical site through a 150 kV network.

This technological jewel meets the most stringent environmental criteria and allows for a 60-70% reduction in major pollutants, including sulphur oxides, nitrogen oxides and dust.

It was also the first large plant to receive the GSE high-efficiency cogeneration qualification and the white certificate, given to plants, which achieve major energy savings.



These pages and previous ones: photos of interiors and exteriors of the CCGT plant in Priolo, Sicily.





Previous page:  
aerial view of the  
CCGT plant.

These pages:  
technicians at work  
on the plant.



The modern control room  
at the CCGT plant.





### Entering and developing the wind energy sector

Since the early 1980s, wind power has been a popular topic that has attracted huge investments. Indeed, Northern Europe has enjoyed great success in this sector. Wind energy is a radical change from how the company used to produce energy. Wind-generated electricity isn't based on a fixed ratio between the input of resources and output in the form of megawatts. It fluctuates and thus revenue goes up and down. But it is economically sustainable and has significant growth prospects. Indeed, Bloomberg analysts have predicted that the worldwide capacity of installed wind-generated electricity will increase six-fold between 2018 and 2050.

2006 was an important year. ERG bought EnerTAD, a listed company, which added 200 MW to the Group's portfolio, including projects and working wind farms. In 2008, the company was renamed ERG Renew and became the Group company entirely dedicated to the wind energy business.

During this period an international expansion process also began which would see ERG develop its presence in six European countries – France, Germany, the United Kingdom, Poland, Romania, and Bulgaria – placing it among the continent's top ten operators. The first step was taken in 2007 with the acquisition of five plants in France for a total of 55 MW.

In Italy, after Vicari (37.5 MW), Sicily, in 2008, other wind farms were constructed at Fossa del Lupo (97.5 MW) in Calabria and Ginestra (42 MW) in Campania in 2011; Amaroni (22.5 MW) in 2012; and Palazzo San Gervasio (34 MW) in Basilicata in 2013.

After a 16-month construction period, Fossa del Lupo became operational in June 2011. It was the second-most important wind farm in Italy in terms of installed capacity, consisting of 39 turbines, each of which has an 80-metre high tower and a 90-metre diameter rotor. The wind farm covers 1,360 hectares of land and it takes 45 minutes to drive from one end of it to the other. Two hundred and eighty kilometres of cable were laid to interconnect the turbines with the substation. Palazzo San Gervasio is an example of the best practices ERG has adopted for the construction of its wind farms: its recycling plan allowed for the reuse of 90% of the earth excavated, and a necropolis and a Samnite village were also discovered and protected.

Again in 2011, ERG's portfolio was augmented by five wind farms in the provinces of Benevento and Avellino, for a total of 112 MW. The joint venture LUKERG Renew was created with LUKOIL to encourage development in Eastern Europe. A few months later, they entered Bulgaria, acquiring a 40 MW working wind farm, and Romania where they constructed an 84 MW wind park in the region of Tulcea.

2012 was a year of great change: on 20 April Luca Bettonte, who had joined ERG in 2007 as CFO and then become Managing Director, succeeded Alessandro Garrone as CEO. Garrone was named Executive Deputy Chairman and Chairman of the Strategic Committee.

In December of the same year, ERG announced its acquisition of IP Maestrale from Gaz de France with its 636 MW of installed wind capacity, of which 550 MW is located in Italy and 86 MW in Germany. Bloomberg called the operation the biggest M&A deal of the year in the green energy sector. In so doing, ERG doubled its overall wind power capacity to 1,232 MW. With over 1 GW of power in Italy, it became the country's biggest wind farm operator.

The 'package' contained in Directive 2009/29/EC, which will regulate the period following the expiry of the Kyoto Protocol, came into force in June 2009 and runs from January 2013 to 2020. The package of measures, known as the *European 20-20-20 Plan*, provides for a 20% cut in greenhouse gas emissions, a 20% increase in the share of energy produced from renewable sources and a 20% rise in energy savings by 2020.

For ERG, 2013 is another important year: in October, the company signed an agreement to sell its remaining stake in ISAB and immediately afterwards signed an agreement to sell ISAB Energy, thereby completing its exit from the coastal refining sector. In the meantime, the company continued to grow on Eastern Europe's wind energy market, acquiring two working wind farms, Gebelesis (70 MW) in Romania and Hrabrovo (14 MW) in Bulgaria.

The same year, it purchased a company to run and maintain its wind farms, renaming it ERG Renew Operations & Maintenance. In so doing it aimed to acquire the extra necessary skills in order to run the wind business in a direct and integrated manner, bolstering its own industrial DNA and gaining important benefits in terms of efficiency and performance.

In 2014 and 2015, Poland was added to the ERG map with the acquisition of three parks totalling 42 MW, 14 MW and 24 MW respectively. In the year of COP21 and the Paris Agreement to limit climate change, ERG accelerated its growth in France. In June 2015, it doubled its presence in the country to 128 MW and in October it further augmented its portfolio on French soil with 11 more wind farms totalling 124 MW. At the same time, six farms totalling 82 MW were purchased in Germany. Two companies joined the Group, one under French law and the other under German law, with a team of twenty-eight professionals supplying technical, operational, and commercial assistance.

ERG's presence in France – which, thanks to the new projects in 2018, totalled over 300 MW – and in Germany – which, after purchasing six wind farms in 2017 reached 216 MW – became increasingly important and strategic for the company and its development abroad. ERG crossed the Channel in early 2016, acquiring a project to construct the Brockaghboy wind farm, 47.5 MW in County Londonderry, Northern Ireland. With the launch of other projects in Scotland and Northern Ireland, the United Kingdom, too, became one of the Group's target countries.

ERG was on an unstoppable march toward green energy and in late 2016, its stock's ranking on the FTSE Italia all-share index moved from 'Oil & Gas' to 'Utilities'. This was the ultimate recognition of the profound change in the company's business.



Previous pages:  
some views of the  
Fossa del Lupo  
wind farm in Calabria.

These pages:  
aerial view  
of the substation.





### Insourcing and its effects

The birth of ERG Renew Operations & Maintenance marked the beginning of a process of insource maintenance, progressively broadening ERG's skills and industrial knowhow in the sector. The aim was to quickly become independent in managing the numerous types of turbines in the company's portfolio, in order to optimise repair activities, reduce maintenance costs, and improve the availability of the turbines.

Even though the business was a far cry from its historical activities, ERG, with its long experience in managing and maintaining complex systems such as refineries and thermoelectric power stations, soon developed the necessary knowhow and turned it into a strategic lever as it engaged in an increasingly competitive market. The progressive cut-off dates of wind energy incentives made the sector increasingly selective in terms of its operators: only those with the skills, structures, and industrial organisation models could create the necessary economic conditions to compete in the market.

One of the company's strengths in maintenance procedures is its logistics centres. They are the nerve centres of its activities: deployed in hub fashion around the wind farms, they are equipped with technical personnel, spare parts, and equipment and vehicles that allow for quick and effective maintenance services. There are 16 of these centres, located in Italy (11), Germany (3), and France (2). A training centre has been built at the operating centre in Caraffa di Catanzaro in Calabria, a benchmark in technical training for sector operators.

After mastering the maintenance process the next step was innovation with the development of monitoring systems (Condition Monitoring System) that use advanced sensors to foresee possible problems in the turbines, thereby enabling preventive action to be taken, with major savings in terms of servicing costs or falls in production due to downtime.

The results of insourcing are extraordinary, improving performance and optimising operating costs; ERG has become a best-case and is used as an example at major international conferences in the sector.







These pages:  
ERG technicians carry out  
maintenance on the Fossa  
del Lupo wind farm.





### Purchasing the hydroelectric plant at Terni

In 2013, after concluding its operations with LUKOIL, ERG had considerable liquidity. The Group was in good health: it had left the oil sector, which was in crisis, and with its solid finances and characteristic vision was dealing with the dramatic economic situation that had been sparked in 2008.

Having decided to follow the path of renewable energy sources, the time had come to decide how to compose its business portfolio. For continuity of production, a balance between programmable and non-programmable renewable sources is vital. Different generation technologies are needed which can be integrated and complement each other.

It was 2015 and the German group E.ON had just decided to leave Italy and put its Italian assets up for sale, including the hydroelectric complex in Terni. This was one of the best production plants in Europe. The complex has 16 hydroelectric power plants, located in Umbria, Lazio, and Marche which use the waters of the Tiber and its tributaries the Nera and the Velino, and includes one of Europe's highest waterfalls: the 165-metre Marmore Falls.

It was an energy-producing complex nestling in the green heart of Italy, created in the 1930s to supply electricity to the then-nascent heavy industry in Terni. A large portion of the gigantic complex is underground, excavated dozens of metres below ground level to protect it from bombing raids which could interrupt the supply of electricity to the steelworks, whose wartime production was considered strategic.



Previous pages:  
view of the Galletto/Monte  
S. Angelo power plant  
in Terni. Built between  
1926 and 1929 and  
expanded in the 1970s.

These pages:  
aerial view of the Corbara  
lake and dam, in the Tiber  
River Park.

ERG was interested in these assets and began long and complex negotiations which were successfully concluded. The deal was worth EUR 950 million, financed in part through a EUR 700-million corporate acquisition loan. To get an idea of the scope of the deal, in this period, the Group capitalised EUR 1.5 billion on the stock market. Banks and investors looked at this very favourably and rightly so. The operation brought ERG a total of 527 MW, with installations in Umbria, Lazio, and Marche, 16 power stations, 7 dams, 3 reservoirs (at Salto, Turano, and Corbara), a pumping station, and roughly 200 employees, including technicians specialised in the operational running of the systems, energy management specialists, and supporting staff. ERG had clearly and unequivocally become an important operator in the sector of renewable energy.

Production at hydroelectric plants can be programmed, thanks to the accumulation basins and the control centres, which open and close the pressure conduits. This optimised ERG's generation portfolio since it offset the amount of production from other renewable sources, which depend on the presence of wind or the sun. The system is so large and complex that a drop of water takes 10 hours to travel from the highest part of the plant to the lowest. The seven major dams – Aia, Alviano, Corbara, La Morica, Marmore, Salto, and Turano – have an overall reservoir capacity of roughly 600 million cubic metres.

The technology is next-generation: the completely digital system is efficiently managed in real-time by the operating centre in Terni, which opens and closes the dams, allocates the flows, and follows the entire system from its monitors. The dams are continuously monitored by automatic instruments and are checked daily through water level measurements and analyses of weather data, measuring air and water temperature and precipitation. A team of technicians monitors the dams' water-resistance and performance by means of measurements and efficiency tests.

The acquisition also included a bidding centre specialised in the complex programming of the hydroelectric power plant, to optimise the electrical energy's sale on the electricity Stock Exchange. In just a few months, a single, large control centre was created in Terni, a new energy management centre which operates on three institutional platforms optimising the Group's production of hydroelectric, thermoelectric, and wind-generated electricity on a daily basis.

Energy production is a forward-looking market which closes the day before. Each operator must communicate the quantity of electricity it estimates it can put on the grid the next day and this figure is then binding. For example, if a wind farm operator plans to sell a certain amount of electricity, based on the weather forecast, and if the wind doesn't blow the next day, it is forced to pay the difference to balance the electricity grid. On the other hand, if more energy than expected is produced, the excess amount is sold, most likely at a very low and unfavourable price.

The ability to foresee, programme, and, above all, balance the electricity which is put on the market is therefore crucial. To this end, it is one thing only to have wind or solar systems, but it is quite another to have two 'moderators,' or rather, two plants whose production can be programmed, such as thermoelectric and hydroelectric plants. The Terni complex immediately proved to be an excellent investment: in particular because it was complementary to the other non-programmable generation sources.

By studying the large hydrogeological network planned at the start of the last century, ERG discovered new possibilities, such as exploiting the water which is released to keep the rivers downstream from the barriers alive. ERG used this energy-producing potential by constructing small hydroelectric plants, varying from 50 to 250 kW, near the areas where the water is released. It aimed to provide maximum energy efficiency while protecting the environment and making the most of the site's potential, giving value to all the available resources.



These pages  
two photos of the Terni  
hydroelectric plant:  
left, the tunnels  
of the Narni plant;  
right, an interior  
of the Galleto/Monte  
S. Angelo plant.





Previous pages:  
the Marmore Waterfall  
in the Nera river park,  
which also hosts the  
Galleto/Monte S. Angelo  
power plant.

These pages:  
view of the artificial lake  
and the Turano dam,  
in the province of Rieti.





### Entering the solar energy market

In 10 years, ERG made huge progress in the sector of renewable energy; it abandoned oil and radically changed its company structure and production assets, with a clear improvement in its profitability. In 2017, with 714 employees and EUR 3.1 billion in net invested capital, the company's EBITDA was EUR 472 million. In 2007, its EBITDA had been EUR 361 million, with 2,825 employees and EUR 2.8 billion in net invested capital.

However, a final step was necessary and in 2017 another crucial operation was planned to further consolidate its position in the renewable energy market. ERG purchased ForVei, the ninth biggest photovoltaic operator in Italy, which owned and managed 30 solar plants located in eight regions, from Piedmont to Sicily, for a total installed capacity of 89 MW. The operation, which was launched in 2017 and concluded in early 2018, was worth EUR 336 million and added roughly 136 GWh to ERG's yearly production.

ERG thus entered solar energy, became greener, and added a new facet to its strategy of technological diversification. Like wind-produced energy, solar energy cannot be programmed, but it is easier to estimate because the overall hours of sunlight in a year can be predicted with greater accuracy. This makes solar energy particularly useful in stabilising the volatility of energy production from renewable sources.

Despite the economic commitment the operation entailed, it was very advantageous: the power systems acquired became operative between 2010 and 2011, and will thus benefit from incentives until 2030, on average. Nevertheless, it was a delicate step for ERG: different technology, different knowhow to develop, and an entirely new production sector. The wind energy model was followed: all the operation and maintenance activities are managed in-house.

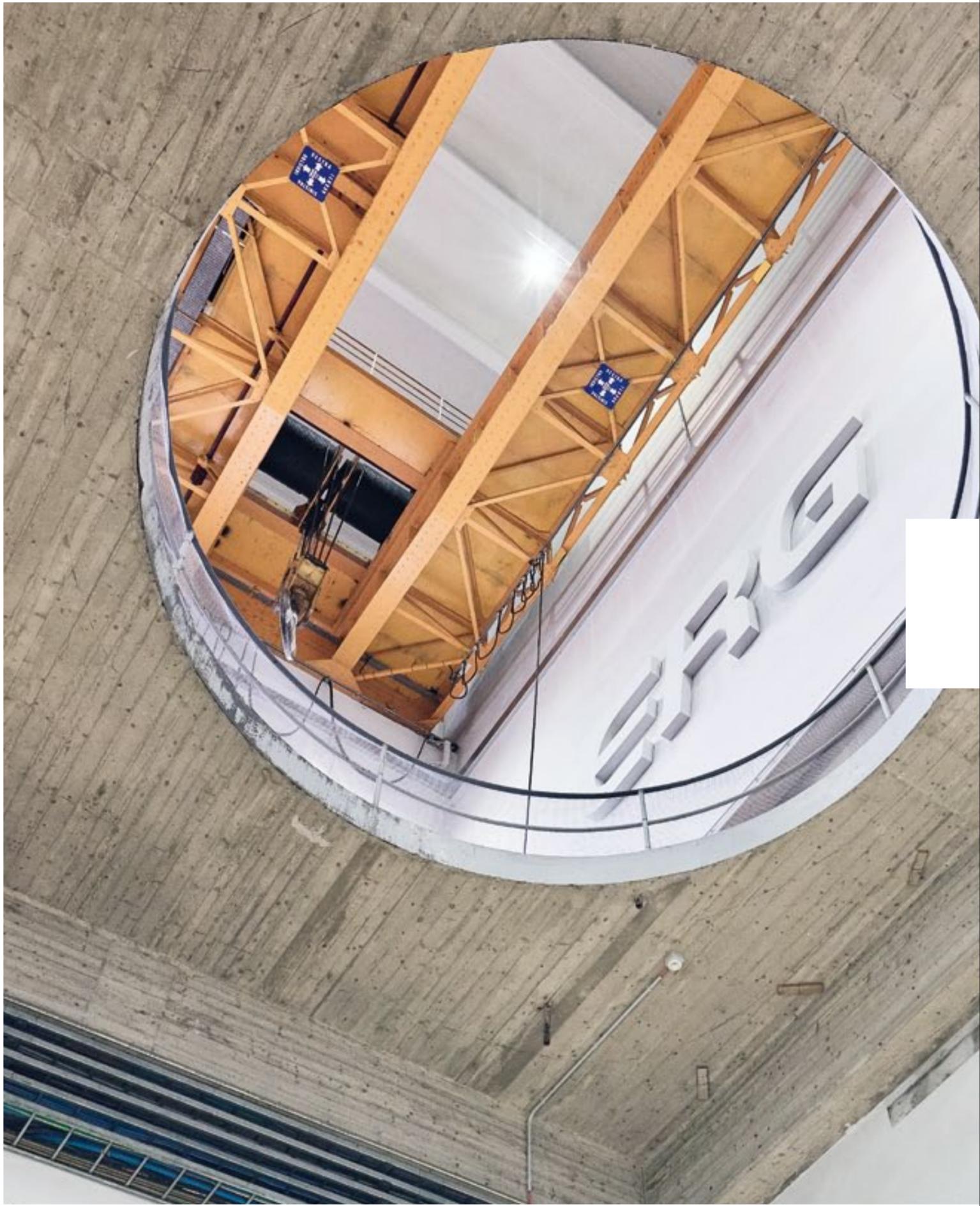
ERG's growth strategy anticipated the evolution that the entire energy system is experiencing. The company was convinced of its gamble on renewable energy and used its hallmark industrial approach. Today, it is one of the few wind energy operators that has developed skills along the entire production chain, from pinpointing sites to designing and constructing wind farms, all the way to directly managing operational maintenance activities.

This process of transformation is not only one of a kind in its sector, it is an example of a pathway of change. A business case that attracts the curiosity and interest of the media and company strategy experts, thanks to the management's vision, the organisation's executive capacity, and the flexibility of the workforce in adapting to the evolving business model.



These pages:  
some images of the  
photovoltaic plant  
in San Floro, Calabria.  
It has an installed  
capacity of 24 MW.





TOMORROW

## We are ERG: the new leadership model

"From the moment my company began, when it only had a few dozen workers, my constant thought was to create an increasingly close and caring relationship with my employees. And I think this rule of company life, which is crucial to me, has yielded concrete, positive results because [...] afflatus has been created between you and me; it represents one of the best characteristics of my company and it has led to the creation of a true 'family' whose every member is involved in continuous efforts to foster the wellbeing of the community. I am convinced that this characteristic and this 'family,' despite the transformation in the size of the company, will continue in the future."

Founder of ERG Edoardo Garrone wrote the above to his people in a letter dated 20 June 1963, less than a month before his premature death, explaining his vision for the company's relationship with people and establishing one of ERG's founding values. He was firmly convinced of the importance of creating caring and deep bonds between the management and his employees: ERG maintained this vision in the years to come, transforming it into one of the company's greatest strong points.

Many years later, on a spring morning in 2018, everyone working at ERG found a book on their desk. Not any book, but a book recounting the renewed map of the Group's values, skills, and activities. An important instrument for propagating and sharing the inspiring principles that will guide the *greenenERGymakers* in achieving the goals of the 2018-2022 strategic plan. The stars of this book are the people at ERG who, with the help of a team of experts, have learned that leadership can also be shown through the ability to express yourself with passion and engagement.

Four values have been pinpointed: *Heritage*, *Sustainability*, *Passion*, and *Challenge*. The first value has to do with the 80 years of ERG's history which, as Alessandro Garrone said, must be passed down with continuity, "without losing what has made it such a success story and without closing our eyes to advancing innovation." *Sustainability* encapsulates ERG's way of doing business, creating value for all the stakeholders. *Passion* and *Challenge* express the energy and enthusiasm of people that love their job and aren't afraid of putting themselves on the line.

Instead, six skills have been identified, and each one is marked by three types of conduct: *Leading & inspiring*, to show the way and motivate; *Result driven*, to make things happen; *Forward thinking*, the ability to imagine and plan the future; *Talent enabling*, to recognise, develop, and support talent; *Inclusion*, to adopt an empathetic and captivating style which generates participation and consensus; and finally, *Come together*, to construct across-the-board teams which create the results.

This is the ERG Leadership Model, a map of values, competences, and behaviour; created in tandem with the Group's industrial plan, it shares the same timelines and, above all, the same challenging objectives.

As Luca Bettonte said: "Now we really have everything we need for our journey: the Plan which gives us direction, the Skills that will guide us on our way, and our Values that give us power, unity, and stability."

## Continuous training

People play a key role in ERG's Code of Ethics: "They are the indispensable factor for the existence, the development, and the success of every single undertaking. Thus, ERG pays special attention to the promotion, safeguarding and development of the abilities and skills of all its employees, so that they can best express their own potential and professionalism."

At ERG, training has always been considered an investment in the future; it has been, and will continue to be, indispensable in fostering the Group's process of evolution and consolidation and helping all the *greenenERGymakers* to grow, not just professionally but also on a personal level.

In recent years we have learned that, on average, every ERG employee dedicates six days a year to training; 6.6 in 2017 to be precise. Behind this involvement lies the key concept of self-accountability: the company provides a catalogue of events and educational initiatives that are constantly updated and everyone is responsible for their own professional growth, which can be personalised. Training is aimed at everyone, without any distinction in terms of gender, seniority, geographical origin or professional role, and allows each person to independently direct their own development.

People are at the centre: this has always been the philosophy at ERG. In 2008, Riccardo Garrone, starting down the path that led to the radical change in ERG's business model, pointed out that the 70 years that the Group was celebrating could be reinterpreted as a story of commitment, success and above all people: "Men and women who, alongside my father, first, then alongside my children and me, have worked with professionalism and determination to make this company great: to me, this sums up our history."

## The role of renewable energy in Italy and the world

At a certain point in its history ERG decided to change. It had considerable cash in hand, it evaluated various opportunities, and it grew, becoming a leader in green energy. Over a period of 10 years it disinvested EUR 3.5 billion from the oil sector and reinvested over EUR 4 billion in renewable energy. Starting in 2008, it redesigned its profile and transformed itself into one of Italy's major renewable energy operators, while also growing rapidly in Europe. The business decisions taken by ERG's management are in line with the evolution of the world scenario and with the international community's commitments in the battle against climate change.

The agreements signed in Paris in 2015 during the Conference of the Parties to the United Nations (UN) Framework Convention on Climate Change (COP21) obliged the European Union and the 195 signatory countries to limit the average global temperature increase to 'well below' two degrees Celsius. Aware that climate change represents a real threat to the planet, the individual countries undertook to adopt policies in order to stem the problem.

The European Union identified its guidelines for 2020, 2030, and 2050 in three different stages. The original strategy is defined by the measures called for in the 2020 *Climate & Energy Package*: a 20% reduction in consumption by 2020 through increased energy efficiency; a 20% reduction in greenhouse gas emissions compared to 1990; and 20% of energy consumption to be provided by renewable energy sources. The goals became more ambitious when the timeframe was pushed to 2030 and the bar was raised even further in the *Roadmap 2050*, which calls for the almost total decarbonisation of the economy.

But throughout the world there is still a massive gap between the declarations and concrete commitments, and becoming independent of fossil fuels will call for remarkable legislative efforts. Following up the commitments made in Paris, in late 2016 the European Union launched the *Clean Energy Package*, a set of regulatory proposals designed to facilitate the achievement of climate and energy goals. A central role is played by the Emission Trading System (EU-ETS), a market for exchanging emission quotas which aims to progressively reduce emissions on a global scale.

With the *Clean Energy Package*, each Member State can choose the most suitable measures to achieve the set goals for 2030, which it must declare in its national climate-energy plans to be finalised by 2019. Italy, which isn't shirking this commitment, has in the meantime already adopted some of these principals in its National Energy Strategy (SEN), which was approved by parliament in late 2017. The SEN, whose temporal horizon is 2030, defines the actions that can help develop renewable energy sources while increasing energy efficiency.

In the coming decades, the European and Italian strategies, along with energy demand, will have important repercussions for the energy sector. According to the International Energy Agency (IEA), between now and 2040 worldwide demand for electricity will grow by 40%, while already in 2016 we arrived at parity of expenditure between electricity and oil products: there is no doubt, the future is 'electric'.

This growing demand and the need to offer access to electricity to 1.2 billion people who are still without it, call for a total rethinking in how to supply energy. Renewable energy and natural gas will play a very important role in this new scenario: the IEA estimates that by 2030, the ability to produce installed energy from natural gas will, for the first time, exceed that of coal. There will also be continuous growth of solar, wind, hydro and other renewables, while nuclear energy will also register a slight rise. However, oil will be in constant decline, in part due to the increasing use of electricity, including in transportation.

According to Bloomberg, in 2050, solar and wind power will be able to cover 50% of worldwide demand for electricity, whereas only 29% will be covered by fossil fuels, as opposed to today's 63%. So, the energy mix to which the world is committed is already faithfully reflected in ERG's generation portfolio.



## The 2018-2022 Business Plan

Continuity and evolution. Bringing these two key elements together is the way the Group is progressing in a constantly changing scenario. In 2017, ERG achieved its best net result for 12 years with net profits of EUR 142 million. Acting on these results and having met the goals set by the preceding industrial plan ahead of time, the management decided to present its 2018-2022 Business Plan one year in advance.

The plan calls for EUR 1.7 billion in investments, well above the 50% stock market capitalisation, and follows three guidelines: organic development of wind power abroad through greenfield and co-development projects; technological updating through the repowering and reblading of its Italian wind fleet; and growth through M&A operations to accelerate development and optimise its power generation portfolio. Ninety two percent of the investments in the industrial plan are earmarked for development in order to increase installed capacity by roughly 850 MW to a total of 3,600 MW by 2022.

For its growth abroad, ERG is looking at countries with more consolidated and reliable regulatory frameworks, such as France and Germany, or countries with exceptional wind resources, such as the United Kingdom.

The company is planning an unprecedented technological upgrading of its Italian wind farms. With the industrial knowhow the Group has developed, it is now able to achieve the *Repowering* of its technologically obsolete and small-sized aerogenerators, extending their usefulness and increasing production by up to four times. At the same time, it can halve the number of turbines and keep the amount of land used almost unchanged. Many existing infrastructures, such as substations, cable ducts, and access roads, can be partly reutilised.

As stressed in many sector studies, renewing wind farms is vital if Italy is to achieve the climate-energy objectives set for 2030, in terms of increasing its production of electricity from renewable sources. It is also advantageous from an environmental and landscape point of view, since reducing the number of wind towers reduces the so-called 'forest effect', while at the same time producing more 'green' kilowatts.

The other type of technological updating is *Reblading*, which consists of substituting the old wind turbine blades with next-generation, more efficient blades. The power of the aerogenerators remains unchanged but production can increase by up to 16% with no impact on the surroundings. ERG is already on its way! Setting off a process which has the potential to create a national benchmark, with job and development opportunities for an Italian industrial supply chain.

Worldwide energy demand is rising rapidly and the only way to reduce the emissions that cause climate change is by transitioning towards a substantially decarbonised economy. To achieve these goals the growth of renewables and energy efficiency will be key factors. Growth in wind and photovoltaic energy will be made possible above all by developing increasingly competitive accumulation systems capable of storing excess electricity and satisfying demand even when the wind isn't blowing and the sun isn't shining.

A key role will be played by the growing electrification of consumption. And the new philosophy will need to create a system that can independently regenerate itself and in which nothing is thrown away and everything is transformed, a so-called 'circular economy.' This scenario is both very challenging and fascinating, and ERG has decided to play a leading role.

"Evolving Energies" is the pay off on the new ERG logo, which was launched on the occasion of its 80<sup>th</sup> anniversary: energy in evolution. This has been the distinctive characteristic of a long journey in the world of energy, a technological and financial journey, but above all, a journey made of people with an extraordinary ability to update and evolve, without ever losing sight of their own distinctive characteristics and founding values.

This journey is still ongoing, 80 years of industrial history with energy as its one perennial common denominator.



Page 123:  
Alessandro and Edoardo  
Garrone together with  
Luca Bettonte during  
the end of year event (2017).

These pages:  
start of reblading  
operations, dismantling  
and mounting of rotors  
at Avigliano wind farm  
in Basilicata.



# ERG MAP





**WE ARE ERG** 







