

# Mozambique



Energy, Society, Sustainability  
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## Enrico Mattei: it's their oil

"It's their oil", said Enrico Mattei in 1957.

Eni's first Chairman is often remembered as "the man of the future" due to his ability to imagine what would come to pass and thus create a valuable legacy for those who would follow him.

He believed that energy resources belong first and foremost to the oil-producing countries and that the most profitable arrangements would arise out of the shared interests of all the actors involved. Mattei's great success lay in his passion for challenges, his strategic vision, his powers of innovation, respect for others, spirit of cooperation and confidence in new generations.

It was his firm conviction that dialogue and respect for cultures constitute the cornerstones for long term partnerships and mutual growth. From a perspective of forty years, it is possible to see that Mattei's values have endured and his philosophy still forms part of Eni's corporate philosophy. His guiding principles are today captured in the modern concept of sustainable development.



| Enrico Mattei, Eni's Chairman in 1953

## Claudio Descalzi: living in the world

The principles created and established by Enrico Mattei remain part of Eni's genetic code. Of particular significance, reflected in both the company's global strategic thinking and its relationship with the communities in which it operates, is the importance of dialogue.

Such dialogues commence even before the company becomes established in a new territory and through the pursuit of dialogue it is possible to establish the conditions for living together. For Eni, living in the world means integration and sharing of mutual benefits. It also means the creation of a powerful engine that has made Eni's worldwide development possible.

Sharing has allowed us to grow and to contribute to our host's growth. We see it as imperative to develop relationships with nations, environments, cultures and people with which we interact and in which we live. Eni has, over many years, developed an organizational culture, without parallel, which is designed to build lasting, long-term relationships within the territories in which we operate.



| Claudio Descalzi, Eni's CEO

# Eni in Mozambique

Eni has been working in Mozambique since 2006, when the company won an exploration and production concession contract (EPCC) for Area 4, a deep water block offshore of the Rovuma Basin in the Cabo Delgado Province (north of the country, 2,000 km from the Capital city of Maputo). Eni is the operator of Area 4 with a 50% indirect interest owned through Eni East Africa (EEA), which holds a 70% stake in the Area 4 EPCC. The other Concessionaires are Galp Energia Rovuma, KOGAS Mozambique and Empresa Nacional de Hidrocarbonetos (ENH) with a 10% stake each. Since July 2013, China National Petroleum Corporation (CNPC) owns a 20% indirect interest in Area 4 through its 28.57% participation in Eni East Africa (the remaining shares being held by Eni SpA).



The exploration campaign, which started in 2011 and ended in 2014, led to the largest discovery ever made by Eni. Area 4, is estimated to contain more than 85 Tera Cubic Feet (TCF) of gas (approx. 2,400 billion cubic meters).

In 2014, the Area 4 partners, submitted to the Government of Mozambique the first Plan of Development (PoD) for the monetization of the Area 4 resources. This first PoD envisages the development of the Coral gas field (which holds around 15 TCF), through a floating gas processing, liquefaction and storage unit (Floating LNG) moored over the southern part of the Coral Petroleum Deposit.

In February 2016, the PoD for the Coral South FLNG was approved by the Government of Mozambique.

## Exploration

Eni East Africa was awarded an Exploration and Production Concession Contract (EPCC) for Area 4 block in December 2006 (effective from February 1<sup>st</sup>, 2007). The initial exploration area was 17,764 sq. km, and the duration of the exploration period was 8 years divided in 3 phases. The seismic operations started in early 2008 with the recording of 2,317 km of 2D lines and 1,040 sq. km of 3D data. The first exploration well, Mamba South 1, was drilled, in September 2011, in water depth of 1,580 m, resulting in a large gas discovery. Following the first successful well the exploration/appraisal campaign continued almost without interruption until August 2014. Further discoveries were made in Mamba North (2011), Mamba Northeast (2012), Coral (2012) and Agulha (2013).

During this period, 15 wells were drilled with a Rate Of Success (RoS) very close to 100%. Six production tests (DST) were successfully completed and six reservoirs were cored.

Seismic acquisition activity continued alongside the exploration drilling with another 2D survey in 2012 (2,184 km) and two more 3D campaigns in 2012 (1,864 sq. km) and 2013-2014 (3,060 sq. km).

At the end of the third and last exploration period in February 2015, approximately 85 TCF of gas had been discovered and all the acreage of the block outside the identified discovery areas had to be relinquished. As of 2016, 6 discovery areas have been approved by the Government of Mozambique which are: one for Coral reservoir (730 sq. km), 4 covering the Mamba Complex (2,076 sq. km envelope) and one for Agulha (390 sq. km).

The company won also an international bid, the 5th licensing round for Exploration and Production Concession Contracts (EPCC) launched by the Mozambican Government, to explore a new block, the Angoche A5-A, a located offshore Nampula Province, north of the country.

This block will be operated by Eni Mozambico SpA (34%), a wholly owned branch of Eni SpA in Mozambique, with offices in Maputo.

Statoil Holding Netherlands BV (25.5%), Sasol Petroleum Mozambique Exploration Lda (25.5%) and the State company ENH (15%) are part of the JV.

## Development activities

The strategy for the development of Area 4 resources foresees different scenarios in a phased manner for both straddling and non-straddling resources.

### Coral (non-straddling)

The Coral project aims to exploit the hydrocarbon resources discovered in the Coral Eocene 441 reservoir. Considering the size of the overall resources discovered (15.65 TCF) the project will be



developed in two phases through two FLNG units. The first phase of the Coral Development will be focused on the resources located in the southern portion of the Coral reservoir.

The Coral South FLNG has been proposed and its plan of development has been approved by the Government of Mozambique for the exploitation and monetization of the gas resources. The Project consists of six (6) subsea wells feeding the Floating LNG Facility with a capacity of 3.4 MTPA through a subsea production system, umbilicals, risers and flowlines. It is located in approximately 1,800-2,150 m WD.

LNG produced at Coral South FLNG will be offloaded on regular basis to the LNG carriers and will be delivered on the international markets. The condensate produced will be transferred by tankers, valorised and marketed in Mozambique or regional countries.

The production profile has a plateau of over 40 years, and a gas cumulative production of approximately 5 TSCF in the 25 year production period. For Coral South, the FID is expected by the end of 2016.

#### Mamba (straddling within Area 1)

The development for the straddling resources, the "Mamba Reservoir", is being prepared in coordination with the Area 1 operator Anadarko. Area 1 and Area 4 achieved the Unitization and Unit Operating Agreement (UUOA) in November 2015.

The project will be carried out in 2 phases. The initial one with two Onshore LNG processing units referred to as "trains" to be built in the Afungi peninsula, and 16 subsea wells and relevant subsea facilities to be developed by Area 4 JV independently but in coordination with Area 1; the second phase that will include the development of additional 2 LNG trains and associated subsea facilities to be developed jointly with Area 1.



The concept for Area 4 initial development is based on two LNG trains with a treatment nominal capacity of 5 million tons per annum (MTPA) per train (10 MTPA total) using propane pre-cooled mixed refrigerant (C3MR) liquefaction process. Onshore plant for the reception, treatment, liquefaction, storage and export of LNG and Condensates will be realized by Area 4 and Area 1 operators in a coordinated manner in the Afungi LNG Park, Palma District, Cabo Delgado province. The offshore facilities (wells, pipelines, controls, etc.) will supply the feed gas from the Area 4 offshore fields.

The main Project components are as follow:

- subsea production system including Xmas trees, manifolds, production pipelines, service line, control system and umbilical

- onshore LNG plant including inlet facilities, gas liquefaction trains, utilities and storage
- near shore facilities composed by the Marine Offloading Facility (MOF) and the Marine Export Terminal (Jetty).

Some infrastructures and facilities, such as MOF, Jetty, access roads and Afungi LNG Park fence, will be common for the Area 4 and Area 1 developments.

Project activities onshore also involve the resettlement of a few villages in the Afungi peninsula. The resettlement activities will be carried out jointly with Area 1 operator.



# Eni's approach to sustainability

Being sustainable for Eni means conducting our operating activities while creating value for stakeholders and using resources in such a way as to avoid compromising the needs of future generations. We consider sustainability to be a driver in the process of continuous improvement that guarantees results over time, while reinforcing business performance and reputation. It is committed to taking actions aimed at promoting respect for people and their rights, the environment and the broader interests of the communities in which we operate.

We conduct our activities by creating relationships that are based on correctness and transparency and continuous dialogue with stakeholders in order to pursue shared objectives for the creation of value and opportunities for sustainable development and being aware that dialogue and shared objectives are the way to create reciprocal value.

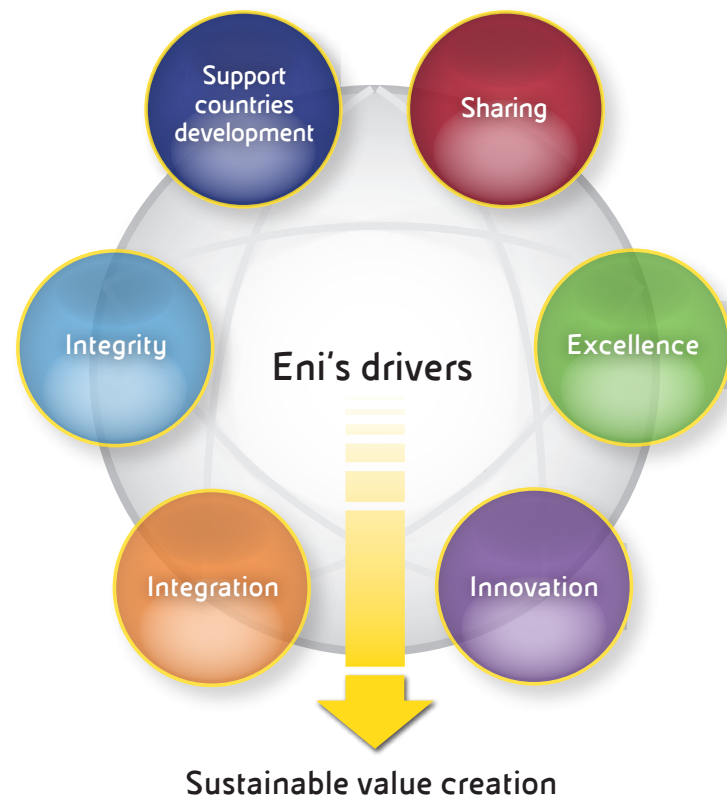
## Sustainable value creation

Eni's excellent strategic positioning and competitive advantages leverage on an integrated business model for the creation of sustainable value, founded on a wealth of distinctive assets, strategic guidelines and sustainable drivers deriving from crucial management choices consistent with the long-term nature of the business. Eni's business model is supported by a framework of clear and straightforward rules of corporate governance and respectful of the highest ethical standards and rigorous risk management.

The six drivers that guide Eni in delivering sustainable value are:

- integrity in business management
- support countries development

- excellence in conducting operations
- innovation in developing competitive solutions to face complexity
- know how and skills sharing and equal opportunities for all Eni's people
- integration of financial and non financial issues in the company plans and processes.



## Sustainability in Eni East Africa (EEA)

This approach was systematized through the adoption of the Sustainability Upstream Management System (SUMS) aiming at an effective and systematic management of sustainability aspects along the business lifecycle and across the company. The implementation of SUMS is oriented by the ISO 26000 Guidance and the system itself integrates procedures related to:

- guidance for sustainability management
- management of stakeholders engagement (including grievances mechanism)
- development of social context analysis
- management of community investment initiatives
- monitoring of sustainability related activities
- management of local content
- management of land management issues.



## Community development: from primary education to professional training

In Mozambique, EEA promotes education and professional training projects, supporting the entire learning process from primary school to university to professional and on-the-job training.

In the field of primary education, Eni has an agreement in place with the Provincial Department of Education and Culture, the Municipality of Pemba and the Community Council of Paquitequete for improving access to primary education in Paquitequete (Pemba) by building a primary school, supplying school materials and promoting the importance of social and environmental issues. The school opened in 2014 and in 2015, classes were attended by 1,925 students, including 140 adults enrolled in the night shift introduced for adult education assisted by 30 teachers, while the 13,000 are the indirect beneficiaries that include the children's families and the population as a whole. The second phase of the project, initiated in 2016, aims at improving the quality of education by: providing educational, pedagogical and sports materials; capacitating teachers and trainees also on extracurricular activities (basket, poetry, horticulture). Participation is encouraged by involving parent committees and students directly.

In agreement with Mozambique's Ministry of Labour, Eni has begun work on an ambitious project aimed at strengthening the professional skills of the local population and increasing employment in the region of Cabo Delgado Province.

The professional training centre (INEPF) in Pemba is an exemplary success story. EEA started the ambitious project to strengthen the local population's skills and increase employment in the region with the approval of Mozambicans authorities.

The project provides educational material for electromechanical disciplines and helps train the centre's future teachers. In 2015, the number of trainees increased to 184 by 161 of 2014 (the project's first year).



EEA started the Eni Professors@UEM project in Mozambique, in collaboration with Eduardo Mondlane University in Maputo, which aims to train 10 junior local professors in oil and gas engineering. Training programmes will be carried out in Mozambique and abroad, at highly specialised partner universities. EEA also collaborated with Eni Corporate University to organise the selection process recruiting and providing support for masters students in Petroleum Engineering and Geosciences.

Two projects for the Eni Students Project have been organised in Mozambique by two local universities (UniLurio in Pemba and UEM in Maputo), in collaboration with University College London, with over 200 students from the Cabo Delgado and Maputo provinces secondary schools involved. Special study days were promoted in which the students spent two days at the universities learning about energy and the environment, with a special focus on geology. The idea behind the project (already implemented in India and Ghana)

is to help secondary school students choose upstream sector studies at university.

EEA also pays special attention to the development and appreciation of managerial, technical and professional skills. Professional teaching and training activities in the country include training paths for geoscientists, reservoir engineers, HSE supervisor, drilling & completion supervisors.

#### [Water, health and access to energy: EEA efforts for local communities](#)

EEA has collaborated with Palma District Administration to create the "Water Project", improving health and living conditions for the population in the Palma Village through sustainable and enduring access to drinking water. The action plan, which includes hydrogeological mapping of the territory, the design for wells and relevant electrical systems, selecting areas for installation, and



planning capacity building and awareness campaigns for the community, was drawn up in 2014. The water system was handed over in 2015. The direct beneficiaries are 4.000 families living in the three different areas of Palma Village, where the fresh ground water has high salt content.

In Mozambique, and mainly in northern regions, the electricity is available just in few towns and the service reliability is very bad. The power houses are located thousands of kilometers away and the poor lines' quality brings severe transmission constraints.

EEA is studying suitable solutions to give access to energy to rural communities: in 2015 the prefeasibility study was completed aiming at electrifying basic infrastructures and services (water supply, schools, health centres) in the villages of Afungi Peninsula via smart-off grid systems powered by renewable energies.

### Community health

The main hospital in Pemba is the target of a project aimed at improving emergency and first aid services by training 20 doctors through certified courses in cardiology and traumatology, supplying equipment for critical and intensive care, and renovating medical gas systems.

An oxygen generator will be installed in a suitable place within the hospital perimeter, in order to produce on site gaseous oxygen directly from the air to offer a cost effective and reliable alternative to the actual supplies.

The plant has capacity to produce at least 15 medical oxygen cylinders per day, with an hour capacity equal to 5-6 Nm<sup>3</sup>/h of oxygen for a continuous functioning of 24 hours per day. To fix the problem of water amount delivered that is intermittent and scarce,



an improvement of water distribution, electrical was made on the capacity of the Provincial Hospital in Pemba.

### Eni Foundation projects

The project for reinforcing obstetric and neonatal emergency services in the Palma district aims to help the local medical authorities, reduce neonatal, infant and maternal mortality by improving the quality and accessibility of medical services for mothers and babies.

The project objective is to improve the educational level of health staff, to provide and run a surgical operating theater and "a casa mãe espera", a residence with capacity of 12 beds for women with high-risk pregnancies awaiting delivery (already inaugurated and operative), and to supply essential equipment (radiology, ultrasound and laboratory equipment) material, and medicines.

The facilities were inaugurated in 2014 and have been assisting women from Palma and surrounding villages including some from Tanzania. Since 2014, 20 training courses have been carried out and 357 health staff trained on mother, new-born, and child health topics. The direct beneficiaries of the initiative in the district of Palma are the healthcare workers receiving training while the indirect beneficiaries are women of fertile age (about 14,500), infants aged 0-4 (about 9,500, including about 3,000 newborns/year) and children aged 5-14 (about 14,000) and all the inhabitants of the district of Palma (60,000 people).

In 2015, thanks to the new facility built by the project, 248 patients have been operated, including 65 women for caesareans, moreover, 6,536 people were tested in the laboratory, and 559 received an x-ray. The Palma Health Center was able to perform 24,480 visits to children under 5 years old between 2014 and 2015.

### Local Content: building up opportunities for people and local businesses

Eni East Africa promotes opportunities for people and local businesses through training and procurement of local goods and services.

It is important to identify Local Content programmes in line with business plans as soon as we start working in a country. Activities promoting the development and involvement of local suppliers included market surveys conducted to identify local potential for participation in the development of the industry; 19 competitions were announced in local newspapers, and a web portal was set up and kept up to date to provide assistance and answers in a traceable, controlled manner, permitting evaluation of over 200 suppliers. All bidders in the competition had to supply a detailed local content plan, which was referred to in commercial assessment.

The incidence of suppliers registered in Mozambique and operating in the country (including international groups which are in JV with local entities or established in the country as a branch) grew from 13% in 2012 to 18% in 2014. Only in 2015, more than 350 suppliers were identified through local market analysis and all of them have been evaluated in order to be invited in the tender process. The percentage of positive evaluation is around 40%. 88 suppliers have contracts with Eni East Africa, with the percentage of National Contract Values around 67%.

### Human resources and training activities

The company is implementing a structured training project named "200 Mozambican Program" since 2012. The Program is aimed at training young local graduates from various technical background in different professional areas related to the Oil & Gas Industry, with the ultimate target to foster the employability of local young resources and contribute to increase the Local Content in terms of local resources development and Oil & Gas competence among local resources.

As of May 2016 the Program accounts 142 graduates trained:

- 26 already contracted by EEA and employed in different business or technical Departments
- 76 currently allocated under different professional area training paths and locations
- 15 trained for and recruited by INP or ENH (Mozambican public institutions)



- 25 trained and now working for other Companies.

As at 31 May 2016, Eni East Africa employs 135 people (59% locals and 41% expatriates).

## Health, Safety and Environment

One of the major commitments by EEA is a responsible environmental management to support sustainable development, biodiversity conservation and the prevention of pollution, in compliance with the relevant HSE legislation and best practices that apply to the oil and gas industry. An Integrated Health, Safety and Environment Management System (HSE IMS), integrating policies, procedures, plans and programs is in place and has been duly certified in 2014 under ISO 14001 and OSHAS 18001 standards.

Taking into consideration the offshore ecosystem, continuous environmental monitoring was performed during both 3D seismic activities, this included mammals monitoring by the Marine Mammals Observers (MMO) and the Passive Acoustic Monitoring System (PAM) (24/7 days) based on board of the chase vessel. An Emergency Response Plan (ERP) and an Oil Spill Contingency Plan (OSCP) has been developed to minimize the impacts on people, environmental consequences and economic losses that can result from potential emergencies. In support of the exploration activities, a series of environmental activities including environmental baseline surveys were undertaken during representative and appropriate sampling periods in the onshore, nearshore (Tungue and Quionga bays) and offshore areas of the Rovuma Basin. The surveys were designed to meet national regulatory requirements, as well as applicable Eni and International standards. EEA has also undertaken various EIA studies for the exploration and drilling activities and for those projects planned for the development phase, including the EIA process conducted for the Floating Liquefied Natural Gas (FLNG) project. As part of this process, 11 specialist studies (focusing on biodiversity, marine discharges, social and physical environments) were undertaken.

The safety performances recorded by EEA, demonstrate high Company commitment in preventing incidents and occupational



illnesses. The analysis of the safety KPIs clearly shows a continuous improvement trend throughout the last years. On February 2016 EEA achieved the target of zero LTI (Lost Time Incidents) over 10,000,000 of worked hours.

## People in Eni East Africa

People are the most important asset of Eni East Africa and the commitment and expertise of its staff is a key factor for achieving the objectives of the company. Eni East Africa is committed to develop its resources, focusing on training that can develop personal capabilities, technical and managerial skills and attitudes. With training as an integral part of the human resources management

system, significant investment is made for the development of local resources to create a sustainable workforce for the company.

Eni East Africa is committed to:

- developing the technical and non-technical competencies of employees
- enhancing motivation, passion and commitment of staff
- embracing team work
- training new professionals and young graduates
- providing a professional development plan for all employees
- safeguarding and promoting human rights and creating a safe work environment
- creating a work environment in which diversity and culture are regarded as sources of mutual enrichment, as well as key factor for business sustainability.









The history of Cabo Delgado province is marked by the crossing and mixing of cultures. Its wealth lies in the variety of its soils and subsoils, in its terrestrial and marine biodiversity, and in the beauty of its landscape.



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## Eni at a glance

Eni is an integrated energy company employing more than 34.000 people in 69 countries in the world. Eni engages in oil and natural gas exploration, field development and production, as well as in the supply, trading and shipping of natural gas, LNG, electricity and fuels.

Through refineries and chemical plants, Eni processes crude oil and other oil-based feedstock to produce fuels, lubricants and chemical products that are supplied to wholesalers or through retail networks or distributors.

Eni's strategies, resource allocation processes and conduct of day-to-day operations underpin the delivery of sustainable value to all of our stakeholders, respecting the countries where the company operates and the people who work for and with Eni.

Integrity in business management, support the countries development, operational excellence in conducting operations, innovation in developing competitive solutions and renewable energy sources, inclusiveness of Eni's people and development of know-how and skills, integration of financial and non-financial issues in the company's plans and processes drive Eni in creating sustainable value. These elements lead to wise investment choices, prevention of risks and the achievement of strategic objectives in the short, medium and long term.

In 2015 Eni confirmed its presence in the Dow Jones Sustainability indices and in the FTSE4Good index.

### Main figures for 2015

- Adjusted operating profit: € 4.1 bln
- Cash flow from operations: € 12.2 bln
- Dividends paid per share: € 0.8
- Leverage: 0.22
- Estimated net proved hydrocarbon reserves: 6.89 bln boe
- Hydrocarbon production: 1,760 kboe/d
- Worldwide gas sales: 90.88 bcm
- Retail oil products sales in Europe: 8.89 mtonnes
- Electricity sales: 34.88 TWh
- Service stations in Europe: 5,846



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