Angola
At SBM Offshore, our people have unrivalled experience and understanding of the needs of the global offshore energy industry.

As is a leader in floating production and mooring systems, production operations as well as terminals and services, the Group maintains a significant Intellectual Property (IP) portfolio including patents, trademarks and copyrights. Our product development is driven by our pursuit of innovation coupled with a progressive market demand.

Group companies employ over 10,000 people worldwide, who are spread over five regional centres, eleven operational shore bases, the joint ventures with several construction yards and the offshore fleet of vessels.

We ensure a strong focus on Health, Safety, Security and Environment from concept through delivery over the full product lifecycle.

The Group is committed to conducting business in a sustainable manner over the long-term by developing close relationships with local communities and businesses in host countries, and by safeguarding the natural environment.

This document presents SBM Offshore’s activities, commitments and plans in Angola, addressing its responsibilities to clients, capital providers, employees, suppliers and to the local community.
SBM Offshore in Angola

SBM Offshore is an integral part of offshore oil and gas development in Angola. The company has been operating there since 1968, starting with the supply of a shallow water CALM buoy to Gulf Oil. In 1987, following a significant increase in Angolan offshore oil and gas activities, SBM Offshore Contractors Sucursal de Angola (SBM OC Angola) was founded to manage all SBM activities in Angola, which today include the construction, installation and operation of FPSOs.

Local Investment through Joint Ventures

Though a number of joint ventures, SBM has forged close working links with Angolan partners, allowing local companies to benefit from SBM Offshore’s global experience via technology transfer.

In 1998, under an initiative from Sonangol, Angola’s state oil company, Sonasing was created. This is a joint venture between Sonangol, SBM Offshore and other local partners. Sonasing was established to promote Angolan participation in Oil and Gas activities, to acquire FPSOs and FSOs and to charter them to the Angolan oil industry.

Through Sonasing, SBM has participated in the design, supply, installation and commissioning of five FPSOs: Kuito, Sanha LPG, Mondo, Saxi-Batuque and Xikomba, and the relocation of one, since Xikomba has been significantly upgraded, renamed N’Goma FPSO, and relocated in July 2014 to block 15/06.

In 2003, Sonangol and SBM jointly developed a strong, local company, OPS Serviços de Produção de Petróleos Ltd. to manage the Angolan fleet of FPSOs owned by Sonasing. OPS employs and trains an Angolan workforce of almost 500 employees, and does business with over 200 domestic suppliers.

A few years later, in 2008, PAENAL Construction and Integration Yard was established by SBM Offshore and Sonangol. PAENAL was developed to address the significant lack of offshore construction capacity in Angola. In 2010, Daewoo Shipbuilding & Marine Engineering (DSME) of South Korea became the third business partner in this venture.

Quick facts

- Presence in Angola since 1968
- 1600 employees with over 75% Angolanization
- By end 2014 will produce about 10% of the national oil production
- 1st Angolan entity non block operator managing FPSOs in offshore Angola
What we believe in

Sustainability

SBM’s ultimate goal is to have a positive industrial and social impact. Working in compliance with domestic regulations and respecting the local environment, we aspire to grow and maintain long term partnerships which are fully integrated into the community. We offer an opportunity for local suppliers to grow and create jobs via capability transfer. We provide career development and self-improvement opportunities together with safety at work and local capital investment.

SBM has a policy of decentralising operational decision making, encouraging increased localisation with a combination of training and investment to create sustainable local businesses that are socially accountable and environmentally responsible.

During all stages of the product life cycle, SBM engages the expertise of the Angolan community.

The SBM sustainability wheel

**Client Relations**
- delivering quality products safely, while providing value for money.

**Authorities**
- demonstrating full compliance with local regulations and respect for the local environment.

**Community**
- providing a business fully integrated with the local community that provides a positive industrial and social impact.

**Suppliers**
- giving preferential consideration to local suppliers, offering them opportunities to grow and meet the needs of local offshore oil and gas businesses.

**Employees**
- providing a safe place of work with potential for career development and self-improvement.

**Partners**
- ensuring partnerships are based on long term relationships which are mutually beneficial.

**All six spokes must be intact to keep the wheel turning**

Full Product Lifecycle

The unrivalled expertize of our people at SBM Offshore allows us to confidently supply floating production solutions for the full product lifecycle: from engineering and procurement, to construction, installation, operation and relocation.

In Angola, as with every other location where SBM operates, the aim is to support the development of the local market, utilizing whenever possible in-country services and products, making use of local manpower, providing training to the domestic labour force and maximising regional content.

During all stages of the product lifecycle, SBM maximizes the use of Angolan content and services, directly through OPS and PAENAL, and by the engagement of local subcontractors.
Established in 2003, OPS Serviços de Produção de Petróleos Ltd manages the operations of Sonasing’s FPSO fleet, provides maintenance services, and performs all local procurement of materials.

Benefitting from the extensive experience of the SBM Offshore Group, the global leader in leasing and operation of FPSO units, OPS provides safe, reliable, and cost effective solutions for the needs of offshore oil and gas field development, offering a service of excellence to its clients.

With more than 40 years of cumulative experience, OPS delivers excellent Operations and Maintenance results in offshore Angola, with 735 million barrels having been produced by June 2014, and an impressive fleet uptime of 99%.

During the design phase of each project, OPS works closely alongside other SBM Group companies with a clear objective: to achieve an optimised, safe and operable system. An integral part of this process is the early inclusion of offshore staff who will ultimately operate the facility to ensure that the final design and specifications meet their exact requirements as operators.

OPS operates a policy of continuous Angolanization, and has a structured plan to steadily increase the percentage of Angolan personnel working both onshore and offshore in Angola, whilst maintaining the safety and efficiency of its operations.

Headquartered in Luanda to support ongoing operations in Angola and provide close liaison with onshore and offshore clients, OPS has significant shared services functions in place including Operations, Procurement and Logistics, Finance, HSSE and Legal services. The office houses all the OPS personnel required to support the operations of the Sonasing Angolan FPSO fleet.

The mission of OPS is “to provide the Oil and Gas industry with high quality production services through the Floating Production and Floating Storage facilities (FPSOs and FSOs), by continuing development and expansion of Angolan competencies to meet our clients targets and objectives with excellence”. 
In order to address the significant lack of offshore construction capacity in Angola, SBM, together with its partners Sonangol and DSME, developed a fabrication and integration yard in Porto Amboim, in the Kwanza Sul region. Since its creation, Porto Amboim Estaleiro Navais Lda (known as PAENAL) has become one of the most modern yards in Africa, and in 2012, received the "Fabricator of the year" award from the Angolan Minister of Petroleum.

The PAENAL yard includes the capacity to produce complex topsides modules and other steel structures for FPSOs. The deep water quayside has been designed to berth VLCC sized FPSOs, and includes repair facilities and lifting capability for FPSO topsides module integration. The yard has a workforce of 1,200 employees, of which 85% are Angolan nationals.

Training Facilities
In parallel with construction activities, a dedicated school was established at the yard to educate local residents in the basic skills required at PAENAL. Training is undertaken by experienced personnel specially brought in to transfer their expertise. To date, over 600 workers from the Kwanza Sul region have received training to ensure a first-rate service. On a broader scale, SBM has helped to contribute to the knowledge base of Angola’s oil and gas industry and complements the formal education gained by students at Angola’s prestigious National Petroleum Institute (INP) in nearby Sumbe.

Maximising Angolan content
With limited fabrication capacity in Angola, the country had been lacking the ability to handle all the potential FPSO projects due to be installed offshore Angola. PAENAL addresses this shortfall, thereby enabling greatly increased Angolan content of these units.

Quality management System
PAENAL maintains a fully documented Quality Management System which covers all its activities. The Quality System has been implemented and developed to satisfy the requirements of the International Quality Standard ISO 9001.

Human Resources Policy
The PAENAL HR Policy of favouring local recruitment has had a profound effect on the local economy and career prospects of the population of the Kwanza Sul region, creating jobs and skilled workers for the Oil Industry.

Series of firsts
The success of PAENAL has been highlighted frequently over the past years with a series of significant achievements, notably:

- First offshore fabrication and integration yard in Angola
- First West African quayside to berth an FPSO
- First topside module integration performed in West Africa
- First naming ceremony in Angola (for FPSO CLOV)
Yard facilities

Total open fabrication area: 43,000 m²
Total reinforced fabrication & erection area served by 20T & 80T gantry cranes: 20,000 m²
Total covered workshops / pipe shops: 2,800 m²
Water depth: -10m LTA
Quay side: 490m
Breakwater: 430m
Total yard area: 175,000 m²

Cranage Capacity:
- TEREX 50T: 2
- Kobelco 250T: 1
- Demag 800T: 1
- Heavy Lift Crane 2,500T: 1

Workshop Main Equipment:
- CNC pipe profiler: 1
- CNC plate profiler: 1
- Plate roller: 1
- Section bending machine: 1
- Column & boom manipulator: 1

Other Main Equipment:
- Scheuerle self propelled Modular Trailer: 4
- Water desalination plant: 1
- Oxygen plant: 1
- Acetylene plant: 1

Jamba – the largest and strongest crane of its kind in Africa.

In August 2013, the installation and commissioning was completed for the Heavy Lift Crane (HLC) rated at 2,500T, making it the biggest fixed HLC on the African coast. The HLC transforms the yard’s capacities and fills a gap that existed in the market. PAENAL is now fully integrated and can undertake the installation of topsides into mega FPSOs thanks to its 490 metres of quay specially designed and built for that purpose.

Main Characteristics of the HLC 2,500 ton
Capacity of the crane at various length
- Capacity: 2,500 ton @ 36 m
- 500 ton @ 72 m
Main Hoisting: 1,250 ton * 2
Aux. Hoisting: 100 ton * 1
Sec. Aux. Hoisting: 15 ton * 2
Lifting Height: 106 m at 36m Radius (from ground to lifting hook)
OPS Track Record

Kuito FPSO
- Size: 228,000 DWT
- Storage capacity: 1,636,000 bbls
- Water depth: 373 m
- Field: Kuito
- Date first oil: 15 Dec 1999
- Max. throughput: 100,000 bbl/d
- 1st FPSO in Angola
- 1st Development in Block 14
- Being decommissioned in 2014

FPSO Xikomba
- Size: 243,000 DWT
- Storage capacity: 1,840,000 bbls
- Water depth: 1,300 m
- Field: Xikomba
- Date first oil: 31 Oct 2003
- Max. throughput: 90,000 bbl/d
- Decommissioned in 2013 and converted into N’Goma FPSO
- 1st Development in Block 15

Sanha LPG FPSO
- Size: 94,000 DWT
- Storage capacity: 135,000 m³
- Water depth: 58 m
- Field: Sanha
- Date first gas: 21 Apr 2005
- Max. throughput: 37,370 bbls LPG/d
- 1st new-build LPG FPSO in the world
- Ownership transferred to IOC in 2013

FPSO Mondo
- Size: 273,000 DWT
- Storage capacity: 2,140,000 bbls
- Water depth: 728 m
- Field: Mondo
- Date first oil: 1 Jan 2008
- Max. throughput: 100,000 bbl/d

FPSO Saxi Batuque
- Size: 311,000 DWT
- Storage capacity: 2,431,000 bbls
- Water depth: 720 m
- Fields: Saxi & Batuque
- Date first oil: 1 Jul 2008
- Max. throughput: 105,000 bbl/d

N’Goma FPSO
- Size: 255,900 DWT
- Storage capacity: 1,507,395 bbls
- Water depth: 1,320 m
- Field: Block 15/06
- Date first oil: 28 Nov 2014
- Max. throughput: 100,000 bbl/d
- 1st relocation within Angola
- 1st Development in Block 15/06
<table>
<thead>
<tr>
<th>Client</th>
<th>Project</th>
<th>Total Weight</th>
<th>Delivery Date</th>
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<tbody>
<tr>
<td>SBM/ CABGOC</td>
<td>• Construction of 2 Shallow Water Calm Buoys for the MTOE Project</td>
<td>500 metric tons</td>
<td>Q2 2009</td>
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<td></td>
<td>HMC/BP</td>
<td>1,700 tons</td>
<td>Q4 2010</td>
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<td></td>
<td>• Fabrication of 26 Mudmats</td>
<td>2,900 metric tons</td>
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<td></td>
<td>• Integration of FTAs</td>
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<td></td>
<td>• Fabrication of Ballast Blocks</td>
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<td></td>
<td>Technip/BP</td>
<td>91 metric tons</td>
<td>Q1 2011</td>
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<td>• Fabrication of Initiation Pile (75t)</td>
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<td></td>
<td>• 10&quot;, 6&quot; Gas Injection Spools (16t)</td>
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<td></td>
<td>OPS, Angola</td>
<td>75 metric tons</td>
<td>Q2 2011</td>
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<td></td>
<td>• Fabrication of FPSO Boarding Ladder</td>
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<td>DSME/Total</td>
<td>7,700 metric tons</td>
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<td>• Protectors</td>
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<td></td>
<td>• Water Treatment Module (M122)</td>
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<td>• 17 Suction Anchor Piles</td>
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<td>SBM/ENI</td>
<td>1,359 metric tons</td>
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<td>• 9 Suction Anchors Piles</td>
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<td>• Sulfate Reduction Package Module (M08)</td>
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<td>• Hot Oil Pump Module (M18)</td>
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<td></td>
<td>CABGOC</td>
<td>6,400 metric tons</td>
<td>Q4 2014</td>
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<tr>
<td></td>
<td>• Fabrication, load out and sea-fastening of 2 WHP Topsides</td>
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Long Term Vision

A Commitment to Local Training

An expanding pool of skilled local labour is essential to maximise domestic Angolan content. With our extensive global experience, SBM understands the need to develop a strong and committed local workforce. Through OPS, we have addressed this issue by developing a structured training programme to provide specialized skills, safety training and offshore practical skills to a new generation of employees to operate our Angolan fleet.

A training structure was established in 2003 and a significant number of Angolan personnel has undertaken specialised courses to support our fleet operations. The courses cover such positions as Maintenance and Production Technicians, Marine Engineers and Deck Operators. An essential part of the programme is the “on-the-job” offshore courses held on existing Sonasing offshore installations. The students are being trained both to increase the Angolan content of our existing fleet operations, and to provide fully trained personnel for future projects.

Education and Training Facilities

Offshore survival training, including helicopter crash landing survival training and fire fighting procedures for our staff, is carried out for OPS at ESSA’s EITC facility in Cacuaco, Angola. Further courses are operated in India, the UK and South Africa.

Transformation of Port Amboim

Since 2008, the town of Port Amboim has transformed dramatically, with the catalyst for all this change being the development of PAENAL Shipyard. The yard has acted as a hub in attracting other businesses and support services, and has thereby breathed new life into the region. Along with the lives of the direct PAENAL employees having been improved greatly, their entire families, and the local businesses live to the rhythm of PAENAL, with the yard setting the pace. Its positive impact on the local community is physically demonstrated by the presence of new buildings for businesses, shops, hotels and restaurants.

The importance of the Soba, the traditional community leaders, cannot be underestimated and at every step, PAENAL sought their input in how best to integrate the yard into the district. Being employed at the yard has meant that local workers can stay with their families rather than face migration to other regions in search of work. In turn, the money they earn is reinvested in the community. The energy radiated by the yard’s team reflects a motivated workforce fully aware of the positive turnaround in their personal prospects and the exceptional chance they have to foster future growth for their region. Their skilled workmanship results in world-class products, successful load-outs, fabrication of projects on time, within budget and with an outstanding HSSE performance.

Dra Josina Magalhaes, President of Sonangol Holding, notes “PAENAL, with Sonangol, SBM and DSME investment, allows worldwide oil and gas players to fulfill their local content demands, ensuring that Angola’s industry and Angolans in general benefit from the growth taking place in the country. PAENAL yard makes a difference in terms of local construction, yard capabilities, increasing the confidence of the different players in the sector, and in the country’s potential investment opportunities.”
The Future Generation

Concern and awareness of the needs of the local community of Port Amboim is of great importance to the management at PAENAL. When it was brought to their attention that the local school was in severe disrepair and unsafe for children, they immediately reacted and committed to building from scratch a brand new school with educational facilities.

Rallying support from a number of partner companies, PAENAL has built a school that will accommodate 350 local children. They will benefit from an enhanced education thanks to additional resources provided such as the facility’s computer room allowing IT classes and a school library. The school will ensure that the children obtain the appropriate skills required for their future aspirations. Once completed, the school will be presented to the Kwanza Sul administration in time for classes to begin in September 2014.

The project has the participation of the following companies: PAENAL (Sponsor), Heerema (Library), Chevron (prefab building with part-funding by PAENAL), Conduril (civil works), PIC (furniture for the class rooms), Sodexo (computer room, computers, desks), SPIE (water pumps, tanks, desks, blackboards), CG Africa (football pitch and basketball court) and MOVEX (construction of the building at a significant discount).

As the town of Porto Amboim continues to prosper, more families will arrive in the area to avail of the employment opportunities and the need for properly equipped and safe schools will increase. PAENAL plans to fund other schools in the future as part of its dedicated CSR strategy.

Lar Nossa Senhora das Dores

Lubango Social Project

A chance introduction with Sister Bernadete Ngueve in 2006 led SBM Offshore Angola management on the road to a long-term relationship and commitment to an orphanage project.

The sister’s heart-warming story, which sadly begins on the streets of Lubango where she rescued several homeless children, touched the hearts of the SBM Offshore Angola company directors. The result was a significant financial and people investment for an orphanage to be built on land in the Huíla province that the Archdiocese of Lubango had donated.

The change from the temporary, unsafe and cramped conditions to a purpose-built facility has had a hugely positive impact on the lives of the girls who range from toddlers to young adults. In addition, the scale of the project - larger than originally hoped for by Sister Bernardete - has meant that there is accommodation for 120 children and four Sisters as well as tutors for the school, which was also built on the site. There are plans to expand the school buildings to allow 500 children from the neighbouring villages to attend as well as to provide IT and English language training.

Nine individual houses stand side by side around an outdoor area and a common canteen for all to eat together, contributing to the village feeling of the orphanage and encouraging a nurturing camaraderie. The girls learn to become independent while assisting in chores such as preparing meals, which are often made from crops and vegetables cultivated on the orphanage’s land.

SBM is committed to investing further for more facilities. A new 250m² building for a medical clinic is completed, and the ambitious next step is to furnish and staff it, and buy the necessary medical equipment and medicine to allow local people access to its services.

From humble beginnings the orphanage has been transformed. The girls are leading healthy and happy lives and are being given an education that will allow them to secure employment as confident, independent young adults.

To date SBM Offshore has contributed $1.8 million to develop the project and will continue to invest in its daily upkeep. There are plans for other orphanages to be built and managed in the future under the wing of SBM-OPS.
April 2015

The sole intention of this brochure is to share general information

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