Corporate Profile
MODEC is a leading offshore oil & gas production services provider for over 50 years.

MODEC has been providing competitive floating solutions for the offshore oil and gas industry and has been recognized as a leading specialist for floating oil and gas production systems, including FPSOs, FSUs, TLPs, and Production Semisubmarines, for over 50 years.
Our mission is "To produce oil and gas steadily and safely, 24 hours a day, 365 days a year, under harsh environmental offshore conditions that are subject to sudden and frequent changes." To achieve this, we require an extremely high level of skill and expertise. In the offshore oil and gas industry, where successful track records are of utmost importance, we have been providing various technologies and solutions which are highly valued by oil companies around the world. In 2018, we marked the 50th anniversary of our foundation. In the future, MODEC will continue providing our clients with economical floating production solutions using the latest technologies as well as our experience gained over the last 50 years of designing and operating such systems. MODEC will continue to rise to the challenges of meeting the requirements of the offshore oil and gas industry.

The global energy demand will continue to grow, oil demand will increase steadily and the use of natural gas, a major clean energy source, will continue to gain strong momentum. We will optimize our business portfolio while pioneering new business areas, especially in offshore wind power utilization and seabed mineral resources harvesting, with the objective of contributing to the creation of a brighter future for our world.

President & Chief Executive Officer
Yuki Koyama
MODEC performs EPCI activities for FPSOs and other floating oil and gas production facilities. Further, by owning and operating its own floating production facilities, MODEC provides oil companies around the world with comprehensive and competitive solutions for oil and gas production services.

On average, MODEC gains about 3 years of EPCI knowledge and more than 20 years of O&M end ownership experience for each facility which it owns and operates. The knowledge and data accumulated over these successful projects as well as the operating history provide valuable feedback for future EPCI projects. Further advancing MODEC’s engineering and project execution processes.
EVOlUtiOn

1968 ➤ 2018

50 years ago, in 1968, MODEC started out as a specialized marine contractor for vessels and equipment for the offshore oil and gas industry. When the offshore oil and gas industry itself was in its infancy, MODEC has led the industry for half a century, and has evolved into a leading and dependable partner for oil companies for particularly challenging offshore oil and gas production projects such as for ultra-deep water and harsh environments.
**Track Record**

- **1968**
  - FPSO Kakap Natuna
  - FPSO Anoa Natuna
  - FPSO Nanhai Sheng Kai
  - FPSO Nanhai Sheng Li
  - FPSO Whakaaropai

- **1978**
  - Derrick Barges
  - Remotely Operated Vehicles
  - Single Point Mooring Systems with SOFEC

- **1986**
  - Field: Lufeng 13-1, China
    - Water Depth: 141 m
    - Gross Capacity: 880,000 bbls
    - Gas Production: 25,000 bopd inlet
    - Client: JHN Oil Operating Company
    - Contract: EPCI
    - Start Date: October 1993

- **1996**
  - Field: Liuhua 11-1, China
    - Water Depth: 305 m
    - Gross Capacity: 650,000 bbls
    - Gas Production: 65,000 bopd
    - Client: Amoco Orient Petroleum Company
    - Contract: EPC
    - Start Date: March 1996

- **1988**
  - Field: Maui B, New Zealand
    - Water Depth: 110 m
    - Gross Capacity: 750,000 bbls
    - Gas Production: 31,000 bopd
    - Client: Shell Todd Oil Services Ltd.
    - Contract: EPCI
    - Start Date: October 1996

- **1990**
  - Field: Anoa field, Indonesia
    - Water Depth: 88 m
    - Gross Capacity: 760,000 bbls
    - Gas Production: 25,000 bopd
    - Client: Marathon Petroleum Indonesia Ltd.
    - Contract: EPCI + Bare Boat Charter
    - Start Date: April 1986

- **1993**
  - Field: Lufeng 13-1, China
    - Water Depth: 141 m
    - Gross Capacity: 880,000 bbls
    - Gas Production: 25,000 bopd inlet
    - Client: JHN Oil Operating Company
    - Contract: EPCI
    - Start Date: October 1993

- **1996**
  - Field: Liuhua 11-1, China
    - Water Depth: 305 m
    - Gross Capacity: 650,000 bbls
    - Gas Production: 65,000 bopd
    - Client: Amoco Orient Petroleum Company
    - Contract: EPC
    - Start Date: March 1996

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    - Contract: EPCI
    - Start Date: October 1993

In its 50-year history, MDECE’s first growth stage involved the design and construction of various vessels and equipment for the offshore oil and gas industry such as jack-up drilling rigs, semi-submersible drilling units, derrick lay barge and ocean going supply boats. Based on this early work, MDECE initially gained experience mostly in the exploration area of the business. In 1985, MDECE successfully gained entry into the floating production area of the offshore oil and gas industry with its first FPSO for Marathon Oil in Indonesia. With its extensive and robust track record, MDECE offers full turnkey solutions for floating oil and gas production systems to clients around the world, either on a turnkey or key basis.
**2009**
- **FPSO Song Doc Pride MV21**: In Operation
  - ** Shenzi TLP **
  - ** FPSO Guanume Nkronah MV22 **
- **FPSO Cidade de Niterói MV18**: Delivered
  - ** FPSO Pyrenees Venture **
- **FPSO Cidade de Santos MV20**: Planned for 2021
  - ** FPSO PSVM **
- **FPSO Cidade de São Paulo MV22**: Planned for 2021
  - ** FPSO Barca **

**2010**
- **FPSO Cidade de Niterói MV18**: Planned for 2021
  - ** FPSO Cidade de Niterói MV18 **
- **FPSO Cidade de Angola des Beira MV12**: Planned for 2021
  - ** FPSO Barca **
- **FPSO PSVM**: Planned for 2021
  - ** FPSO PSVM **

**2013**
- **FPSO Cidade de São Paulo MV22**: Planned for 2021
  - ** FPSO Barca **
- **OSX-3 FPSO**: Planned for 2021
  - ** FPSO Barca **

**2016**
- **FPSO Cidade de Ilheus MV26**: Planned for 2021
  - ** FPSO Cidade de Ilheus MV26 **
- **FPSO Cidade do Canaã dos Carajás MV28**: Planned for 2021
  - ** FPSO Cidade do Canaã dos Carajás MV28 **

**2018**
- **FPSO Caracol MV30**: Planned for 2021
  - ** FPSO Caracol MV30 **

**2021**
- **Eni Mexico Area 1 FPSO**: Planned for 2021
  - ** FPSO Caracol MV30 **
- **FPSO Guanabara MV21**: Planned for 2021
  - ** FPSO Barca **

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**Track Record**

- **2008**
  - ** FPSO Barca **
  - ** FPSO Guanume Nkronah MV22 **
  - ** FPSO Cidade de Santos MV20 **

- **2009**
  - ** FPSO Song Doc Pride MV21 **
  - ** FPSO Guanume Nkronah MV22 **

- **2010**
  - ** FPSO Cidade de Niterói MV18 **
  - ** FPSO Cidade de Angola des Beira MV12 **
  - ** FPSO PSVM **

- **2013**
  - ** FPSO Barca **

- **2016**
  - ** FPSO Cidade de Ilheus MV26 **
  - ** FPSO Cidade do Canaã dos Carajás MV28 **

- **2018**
  - ** FPSO Caracol MV30 **
  - ** FPSO Guanabara MV21 **

- **2021**
  - ** Eni Mexico Area 1 FPSO **

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**Fields**

- **Shenzi Field**, Vietnam
- **Song Doc field**, Vietnam
- **Song Doc field**, Vietnam
- **Sapinhoá (formerly Guara) field**, Brazil
- **Jubilee field**, Ghana
- **Jubilee field**, Ghana

**Oil Produces**

- **30,000 bopd**
- **55 m**
- **124 mmscfd**
- **1,400 m**
- **60 mmscfd**
- **96,000 bopd**
- **100 mmscfd**
- **100,000 bopd**
- **160 mmscfd**
- **120,000 bopd**
- **700,000 bbls**
- **1,500 m**
- **600,000 bbls**
- **1,100 m**
- **1,600,000 bbls**
- **50 m**
- **1,600,000 bbls**
- **1,200 m**

**Fields, Angola**

- **Plutão, Saturno, Vênus and Marte (PSVM) fields**, Angola

**Fields, Brazil**

- **Lula (formerly Tupi) field**, Brazil
- **Sapinhoá (formerly Guara) field**, Brazil
- **Maari field**, New Zealand
- **Iracema Norte (formerly Cernambi Norte) field**, Brazil
- **Iracema Norte (formerly Cernambi Norte) field**, Brazil
- **Lapa (formerly Carioca) field**, Brazil
- **Iracema Norte (formerly Cernambi Norte) field**, Brazil

**Fields, USA - Gulf of Mexico**

- **Shenzi field**, USA - Gulf of Mexico
- **Tupi field**, USA - Gulf of Mexico

**Fields, Ghana**

- **Jubilee field**, Ghana
- **Jubilee field**, Ghana

**Fields, Mexico**

- **Shenzi TLP**

**Fields, New Zealand**

- **Maari field**, New Zealand

**Fields, Brazil**

- **Sapinhoá (formerly Guara) field**, Brazil

**Fields, Ghana**

- **Jubilee field**, Ghana

**Fields, Angola**

- **Plutão, Saturno, Vênus and Marte (PSVM) fields**, Angola

**Fields, Brazil**

- **Lula (formerly Tupi) field**, Brazil
- **Sapinhoá (formerly Guara) field**, Brazil

**Fields, Ghana**

- **Jubilee field**, Ghana

**Fields, Angola**

- **Plutão, Saturno, Vênus and Marte (PSVM) fields**, Angola
Extensive Experience

Robust EPCI Track Record

46 Completed Projects

Extensive Experience in O&M

220+ Cumulative Years

Since its first FPSO contract in 1985, MODEC has rapidly become one of the key players in the FPSO industry. Twenty years ago, in 1998, MODEC started providing O&M services with its first chartered FPSO, MODEC Venture 1, that is when its current business model as an offshore oil and gas production services provider was established. MODEC has expanded its product range to include TLPs with its first unit delivered in 2001. MODEC has an enviable EPCI track record as well as a great charter and operations track record. To date, MODEC has delivered 46 floating production systems and accumulated over 220 years of O&M experience with over 20 of these units.
Floating Production, Storage and Offloading vessel / Floating Storage and Offloading vessel

Ship-shaped FPSOs and FSOs systems have become the primary production method for many offshore oil and gas producing regions around the world. Currently there are approximately 180 FPSOs and 100 FSOs in operation worldwide.MODEC delivered 28 of these FPSOs, and 11 of the FSOs, and currently exists 11 FPSOs and 9 FSOs and operates 18 units. An FPSO is a floating production system that receives fluids from a subsea reservoir through risers, which are then separated on the FPSO topside into crude oil, natural gas, water, and impurities. Crude oil is stored in the storage tanks of the FPSO and then offloaded into shuttle tankers that take it to refineries or for further refining elsewhere. FPSOs and FSOs are moored to the seabed via a variety of mooring systems, the selection of which is determined by the prevailing environmental design conditions. They are suitable for a wide range of water depths, environmental conditions, and can be designed with the capability of staying on location for continuous operations for 30 years or longer. For hurricane, typhoon and cyclone prone areas, decommissionable mooring systems can be provided.

Advantages of FPSOs / FSOs are

- Increased production efficiency
- Improved reliability through fewer mechanical leaks
- Abandonment costs are much lower than for fixed platforms
- Accommodable up to 70 mines and submarines
- Equipped for water injection back into the reservoir for pressure maintenance
- Equipped for gas export, gas lift or gas rejection into the reservoir
As offshore oil and gas development projects increased in scale and move into deeper and deeper waters, FPSOs have also increased in size and complexity to meet these ever-changing needs. With accumulated knowledge from many different FPSO projects, MODEC has gained very valuable experience. In summary, MODEC has led the FPSO industry for several decades, and the evolution continues.
TLP

Tension Leg Platform

TLPs are compliant structures that are connected to the seabed with mast- runs which provide stability and the tension created by the buoyancy of the host structure. TLPs are well suited for oil and gas production, supporting dry trees and/or wet trees in deep water under severe weather conditions because they reject waver motion which allows for the use of surface wellhead and or steel Connubia trees (SCB).

Other features of TLPs include:
- Support for drilling operations without full process plant
- Support minimal drilling facilities with a Tender Aisle Drilling (TAD) module
- Support SCRs in shallow and deep water in severe environments
- Use a wind/Heath cyclone in conjunction with an FPSO for processing and storage
- Use an adding and production systems and communicates an FPSO for storage
- Cost-effective solution for “small” to “intermediate” peak loads and wellhead applications

Currently 28 TLPs are in operation worldwide of the sort with MDIEC having delivered more than 20% of the market share including:
- 2 West African TLPs
- 2 full process TLPs with drilling facilities
- 2 West tree TLPs

Production Semi-Submersible

Production Semi-submersible are floating platforms for both oil and production in ultra-deep water depths. They are high efficiency semi-submersible moored to the seabed using tension leg systems (TLS) under severe environmental conditions. MDIEC has developed a Semi SubmergedWhilst Support (SWS) Pontoon Riser compatible (SCR) System that has been in conjunction with a deep draft, optimum the stability and performance which meet the favorable SCR performance. Semi-submersible provides a larger and stable platform. Moreover, the semi-submersible has been designed for the UK Continental Shelf (UKCS) for deep and ultra-deep water applications, to help reduce cost and construct a reliable and long-life platform that gives the user of energy and conventional marine technology to the height.
Gas Solutions

MODEC considers Natural Gas a major clean energy source of the future and plans to participate in this market by providing in-house developed Gas FPSO, FLNG and FSRWP® solutions to its clients either on an EPC or less basis. These internally developed solutions make extensive use of MODEC’s wide-ranging benchmarking data, knowledge and lessons learned over the last 35 years of designing, building and operating Floating Production Systems such as FPSOs, FSOGs and TLPS.

FLNG

Floating LNG Production Systems.

FLNGs are “Floating production factories” where natural gas from subsea reservoirs is converted into liquefied natural gas (LNG). By combining the proven FLNG concept with MODEC’s extensive experience and knowledge, MODEC has developed a cost-effective and energy-saving technology to provide a solution for the current market needs. The MODEC FLNG solutions feature high efficiency, low operating costs, and low environmental impact. They are suitable for subsea fields with high condensate content and high temperature.

Floating Storage, Regasification, Water and Power

MODEC developed FSRWP® (Floating Storage, Regasification, Water and Power) solutions to help clients provide their consumers with reliable water and dependable electricity using clean natural gas as a fuel source either in the form of LNG or domestic liquified gas. Systems can be tailored to meet the customer’s specific requirements.

The FSRWP® concept can be customized to meet the specific requirements of the project, including the size of the facility, the type of equipment, and the location of the installation. The concept is easy to scale up or down, making it suitable for a wide range of applications.

*FSRWP®, FSR-Power and FSR Water are registered trademarks of MODEC, Inc.
Our lives ~ our oceans ~ our future

With 50-year experience extracting the ocean’s enormous, yet hidden potentials, MODEC will continue moving the world forward, toward a future of bountiful energy.
<table>
<thead>
<tr>
<th>MODEC, Inc.</th>
<th>Corporate Headquarters</th>
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<tbody>
<tr>
<td>Tokyo Stock Exchange: 6269</td>
<td>Nihonbashi Maruzen Tokyu Building, 3-10, Nihonbashi 2-chome, Chuo-ku, Tokyo 103-0027, Japan</td>
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<th>USA</th>
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| MODEC International, Inc. | MODEC Management Services Pte. Ltd. 
MODEC Offshore Production Systems (Singapore) Pte. Ltd. |

Brazil
MODEC Serviços de Petróleo do Brasil Ltda.

March 2019
The information contained in this brochure is true and accurate at the time of publication; however, it may be subject to change without prior notice.