



## Corporate Profile







***MODEC : 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, FSOs, TLPs, and Production Semisubmersibles, for over 50 years.





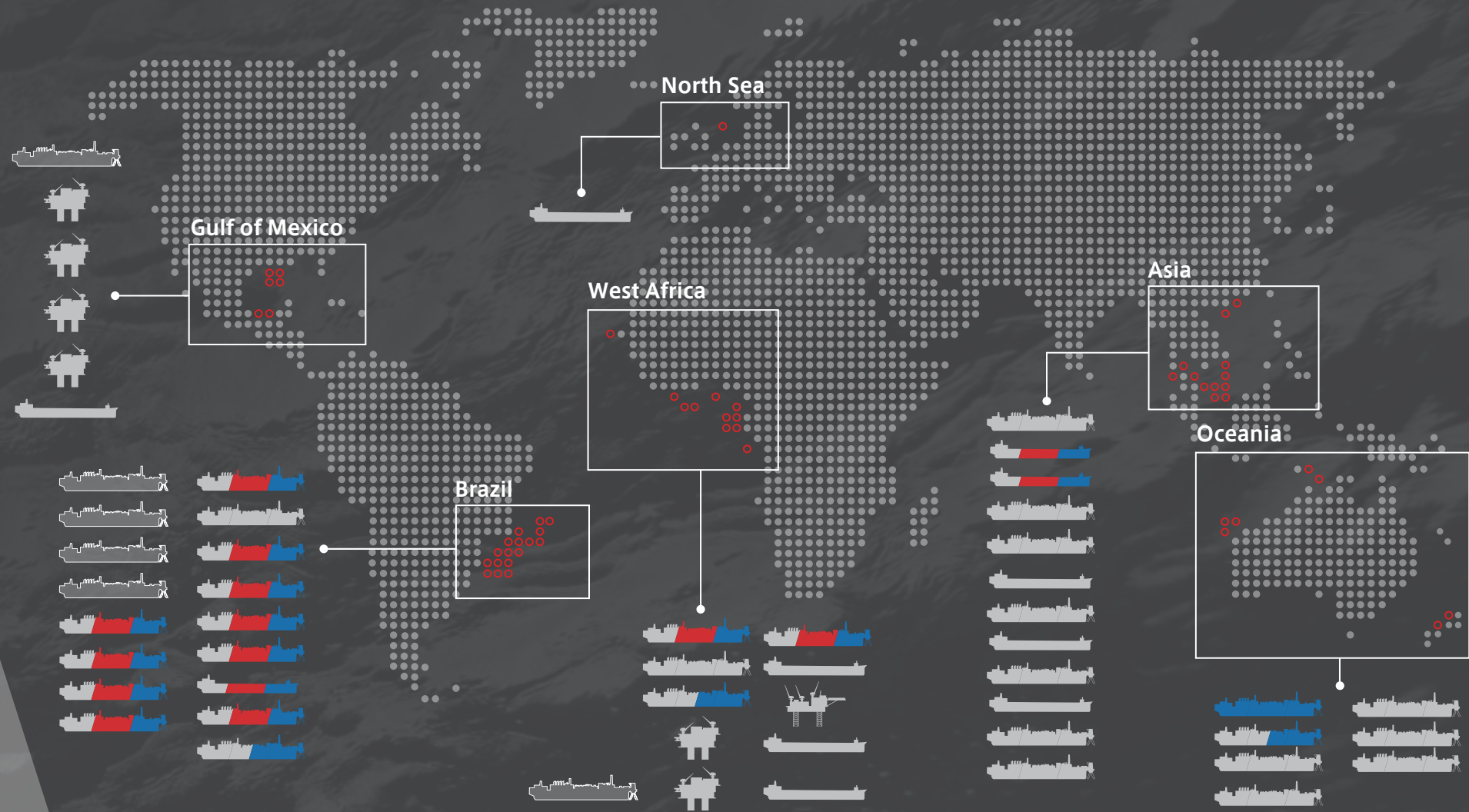
Our mission is “To produce oil and gas steadily and safely, 24 hours a day, 365 days a year, under harsh environmental offshore conditions that are subject to sudden and frequent changes.” To achieve this, we require an extremely high level of skill and expertise. In the offshore oil and gas industry, 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 founding. 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.

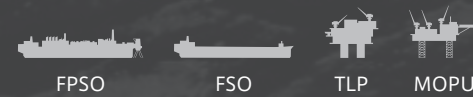
President & Chief Executive Officer  
Takeshi Kanamori



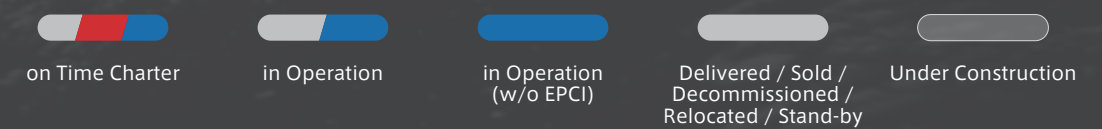
# Project Locations



## Unit Type



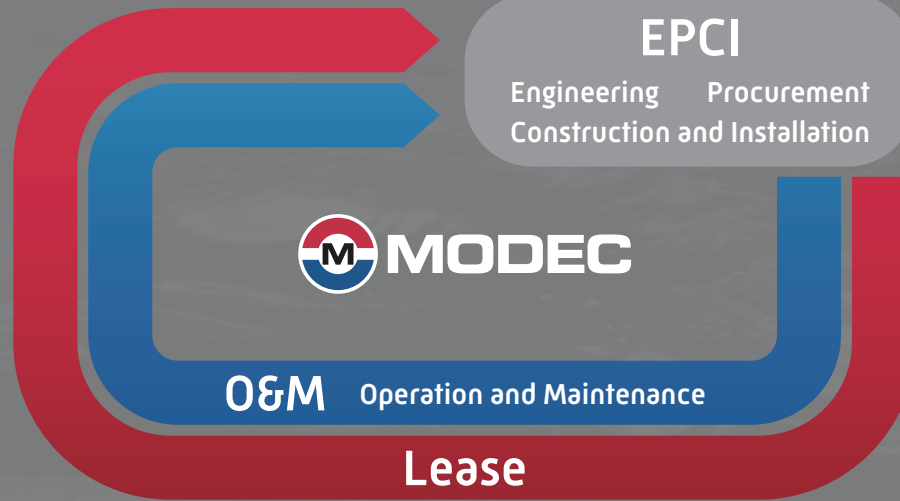
## Status



EPCI

O&M

Lease



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 and 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

Over 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 still in its early years. 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

Track Record

Derrick Barges

Remotely Operated Vehicles

Single Point Mooring Systems with SOFEC

## 1986 FPSO Kakap Natuna



**Field :** Kakap KH, Indonesia  
**Water Depth :** 88 m  
**Storage Capacity :** 760,000 bbls  
**Oil Production :** 25,000 bopd  
**Gas Production :** 25 mmscf

**Client :** Marathon Petroleum Indonesia Ltd.  
**Contract :** EPCI + Bare Boat Charter  
 (Ownership was transferred to the client)  
**First Oil :** April 1986  
**Current Status :** Sold

The FPSO Kakap Natuna that achieved its first oil production in 1986, and is still in operation off the coast of Indonesia.

In its 50 year history, MODEC'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 barges and ocean going supply boats. Based on this early work, MODEC initially gained experience mostly in the exploration area of the business.

In 1985, MODEC 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 this extensive and robust track record, MODEC offers full turnkey solutions for floating oil and gas production systems to clients round the world, either on a sale or lease basis.

1968

1978

1988



Drilling Vessels



Jack-Up Drilling Rigs



Oil Recovery Vessels

## 1990

### FPSO Anoa Natuna



**Field :** Anoa field, Indonesia  
**Water Depth :** 77 m  
**Storage Capacity :** 550,000 bbls  
**Oil Production :** 32,000 bopd  
**Gas Production :** 5.4 mmscf  
**Client :** Amoseas Indonesia Inc.  
**Contract :** EPCI + Time Charter (Ownership was transferred to the client)  
**First Oil :** April 1990  
**Current Status :** Sold

## 1993

### FSO Nanhai Sheng Kai



**Field :** Lufeng 13-1 field, China  
**Water Depth :** 141 m  
**Storage Capacity :** 880,000 bbls  
**Oil Handling :** 25,000 bopd inlet  
**Client :** JHN Oil Operating Company  
**Contract :** EPCI  
**First Oil :** October 1993  
**Current Status :** Delivered

## 1996

### FPSO Nanhai Sheng Li



**Field :** Liuhua 11-1 field, China  
**Water Depth :** 305 m  
**Storage Capacity :** 650,000 bbls  
**Oil Production :** 65,000 bopd  
**Gas Production :** 5 mmscf  
**Client :** Amoco Orient Petroleum Company  
**Contract :** EPC  
**First Oil :** March 1996  
**Current Status :** Delivered

## 1996

### FPSO Whakaaropai



**Field :** Maui B field, New Zealand  
**Water Depth :** 110 m  
**Storage Capacity :** 750,000 bbls  
**Oil Production :** 31,000 bopd  
**Gas Production :** 27 mmscf  
**Client :** Shell Todd Oil Services Ltd.  
**Contract :** EPCI  
**First Oil :** October 1996  
**Current Status :** Decommissioned



1997

**Escravos LPG FSO**



**Field :** Escravos field, Nigeria  
**Water Depth :** 42 m  
**Storage Capacity :** 54,000 m<sup>3</sup>  
**Tanker Size :** 37,100 dwt  
32°C Loading  
-39°C Storage  
**Client :** Chevron Nigeria Ltd.  
**Contract :** EPCI  
**First Gas :** July 1997  
**Current Status :** Delivered

1998

**FSO Madiela & Tchatamba MOPU**



**Field :** Tchatamba Marine-1 field, Gabon  
**Water Depth :** 55 m  
**Storage Capacity :** 760,000 bbls  
**Oil Production :** 40,000 bopd  
**Gas Production :** 5 mmscfd  
**Client :** Marathon Petroleum Gabon LLC  
**Contract :** EPCI+Bare Boat Charter(Ownership was transferred to the client)  
**First Oil :** January 1998  
**Current Status :** FSO - Decommissioned  
NAV DECK MOPU - Sold

1999

**FPSO Buffalo Venture**



**Field :** Buffalo field, Australia  
**Water Depth :** 255 m  
**Storage Capacity :** 800,000 bbls  
**Oil Production :** 40,000 bopd  
**Gas Production :** 8 mmscfd  
**Client :** Nexen Inc. (Transferred from BHP Petroleum Pty. Ltd.)  
**Contract :** EPCI+Time Charter  
**First Oil :** December 1999  
**Current Status :** Decommissioned

2001

**Prince TLP**



**Field :** Prince field, USA - Gulf of Mexico  
**Water Depth :** 454 m  
**Oil Production :** 50,000 bopd  
**Gas Production :** 80 mmscfd  
**Client :** El Paso Energy Partners  
**Contract :** EPCI  
**First Oil :** September 2001  
**Current Status :** Delivered

2002

**FPSO Ruby Princess**



**Field :** Ruby field, Vietnam  
**Water Depth :** 50 m  
**Storage Capacity :** 850,000 bbls  
**Oil Production :** 30,000 bopd  
**Client :** Petroleum Technical Services Company (PTSC)  
**Contract :** O&M  
**O&M started :** October 2002  
**Current Status :** Decommissioned

2003

**FPSO Fluminense**



**Field :** Bijupirã and Salema fields, Brazil  
**Water Depth :** 740 m  
**Storage Capacity :** 1,300,000 bbls  
**Oil Production :** 81,000 bopd  
**Gas Production :** 75 mmscfd  
**Client :** Shell Brasil Petróleo Ltda.  
**Contract :** EPCI+O&M  
**First Oil :** August 2003  
**Current Status :** In Operation (MODEC operates)

2003

**FPSO Cuulong MV9**



**Field :** Su Tu Den field, Vietnam  
**Water Depth :** 48 m  
**Storage Capacity :** 1,000,000 bbls  
**Oil Production :** 65,000 bopd  
**Gas Production :** 2-3 mmscfd  
**Client :** Cuulong Joint Operating Company (CLJOC)  
**Contract :** EPCI + Time Charter(Ownership was transferred to the client)  
**First Oil :** October 2003  
**Current Status :** Sold

2005

**FPSO MODEC Venture 11**



**Field :** Mutineer-Exeter field, Australia  
**Water Depth :** 156 m  
**Storage Capacity :** 930,000 bbls  
**Oil Production :** 100,000 bopd  
**Gas Production :** 2-3 mmscfd  
**Client :** Santos Ltd.  
**Contract :** EPCI+Time Charter  
**First Oil :** March 2005  
**Current Status :** Stand-by (MODEC owns)

2005

**FPSO Baobab Ivoirien MV10**



**Field :** Baobab field, Côte d'Ivoire  
**Water Depth :** 970 m  
**Storage Capacity :** 2,000,000 bbls  
**Oil Production :** 70,000 bopd  
**Gas Production :** 75 mmscfd  
**Client :** CNR International S.A.R.L.  
**Contract :** EPCI + Time Charter  
**First Oil :** August 2005  
**Current Status :** In Operation (MODEC owns and operates)

2006

**Okume/Ebano TLP**



**Field :** Okume/Ebano Fields, Equatorial Guinea  
**Water Depth :** 500 m  
**Oil Production :** 25,000 bopd  
**Gas Production :** 30 mmscfd  
**Client :** HESS Corporation  
**Contract :** EPC  
**First Oil :** December 2006  
**Current Status :** Delivered

2007

**FPSO Cidade do Rio de Janeiro MV14**



**Field :** Espadarte Sul field, Brazil  
**Water Depth :** 1,350 m  
**Storage Capacity :** 1,600,000 bbls  
**Oil Production :** 100,000 bopd  
**Gas Production :** 87 mmscfd  
**Client :** Petróleo Brasileiro S.A. (Petrobras)  
**Contract :** EPCI+Time Charter  
**First Oil :** January 2007  
**Current Status :** Decommissioned

2008

**FSO Rang Dong MV17**



**Field :** Rang Dong field, Vietnam  
**Water Depth :** 60 m  
**Storage Capacity :** 350,000 bbls  
**Oil Handling :** 60,000 bopd inlet  
**Client :** Japan Vietnam Petroleum Company Ltd. (JVPC)  
**Contract :** EPCI+Time Charter  
**First Oil :** November 2008  
**Current Status :** In Operation (MODEC owns and operates)

2008

**FPSO Song Doc Pride MV19**



**Field :** Song Doc field, Vietnam  
**Water Depth :** 55 m  
**Storage Capacity :** 360,000 bbls  
**Oil Production :** 30,000 bopd  
**Client :** Petrovietnam Exploration Production Corporation Ltd.(Transferred from Truong Son Joint Operating Company (TSJOC))  
**Contract :** EPCI+Time Charter  
**First Oil :** November 2008  
**Current Status :** Sold

2009

**Shenzi TLP**



**Field :** Shenzi field, USA - Gulf of Mexico  
**Water Depth :** 1,333 m  
**Oil Production :** 100,000 bopd  
**Gas Production :** 100 mmscfd  
**Client :** BHP Billiton Petroleum  
**Contract :** EPC  
**First Oil :** March 2009  
**Current Status :** Delivered

1998

1998

**FPSO MODEC Venture 1**



**Field :** Elang / Kakatua / Kakatua North fields, JPDA(Joint Petroleum Development Area) - Australia/East Timor  
**Water Depth :** 90 m  
**Storage Capacity :** 750,000 bbls  
**Oil Production :** 32,500 bopd  
**Gas Production :** 6 mmscfd  
**Client :** ConocoPhillips Petroleum(03-12)Phy. Ltd. (Transferred from BHP Petroleum Pty. Ltd.)  
**Contract :** EPCI+Time Charter  
**First Oil :** August 1998  
**Current Status :** Decommissioned

1998

**FSO Ta'Kuntah**



**Field :** Cantarell field, Mexico - Gulf of Mexico  
**Water Depth :** 75 m  
**Storage Capacity :** 2,300,000 bbls  
**Oil Handling :** 800,000 bopd inlet  
**Client :** PEMEX Exploracion y Production  
**Contract :** EPCI+Time Charter  
**First Oil :** August 1998  
**Current Status :** Sold

2000

**FSO Vietsovpetro 01**



**Field :** White Tiger field, Vietnam  
**Water Depth :** 47 m  
**Storage Capacity :** 1,000,000 bbls  
**Oil Handling :** 100,000 bopd inlet  
**Client :** Petrovietnam Trading Company  
**Contract :** EPC  
**First Oil :** October 2000  
**Current Status :** Delivered

2001

**FPSO MV8 Langsa Venture**



**Field :** Langsa field, Indonesia  
**Water Depth :** 100 m  
**Storage Capacity :** 270,000 bbls  
**Oil Production :** 15,000 bopd  
**Client :** Blue Sky Langsa Ltd. (Transferred from MEDCO MOECO Langsa Ltd.)  
**Contract :** EPCI + Time Charter(Ownership was transferred to the client)  
**First Oil :** November 2001  
**Current Status :** Sold

2003

**FSO Pathumabaha**



**Field :** Bongkot field, Thailand  
**Water Depth :** 78 m  
**Storage Capacity :** 400,000 bbls  
**Oil Handling :** 25,000 bopd inlet  
**Client :** PTT Exploration and Production Public Company Ltd.  
**Contract :** EPCI  
**First Oil :** January 2003  
**Current Status :** Delivered

2003

**FSO Kome Kribi 1**



**Field :** Bolobo/Miandoum/Kome fields, Cameroon  
**Water Depth :** 34 m  
**Storage Capacity :** 2,300,000 bbls  
**Oil Handling :** 225,000 bopd inlet  
**Client :** Cameroon Oil Transportation Company (COTCO)  
**Contract :** EPCI  
**First Oil :** September 2003  
**Current Status :** Delivered

2004

**Marco Polo TLP**



**Field :** Marco Polo field, USA - Gulf of Mexico  
**Water Depth :** 1,311 m  
**Oil Production :** 120,000 bopd  
**Gas Production :** 400 mmscfd  
**Client :** Anadarko Petroleum Corp.  
**Contract :** EPC  
**First Oil :** July 2004  
**Current Status :** Delivered

2005

**FPSO JasmineVenture MV7 (ex-FPSO Buffalo Venture)**



**Field :** Jasmine field, Thailand  
**Water Depth :** 60 m  
**Storage Capacity :** 800,000 bbls  
**Oil Production :** 20,000 bopd  
**Gas Production :** 8 mmscfd  
**Client :** PEARL Energy Pte Ltd.  
**Contract :** Bare Boat Charter+O&M(Ownership was transferred to the client)  
**First Oil :** June 2005  
**Current Status :** Sold

2006

**FSO Rong Doi MV12**



**Field :** Rong Doi / Rong Doi Tay Fields, Vietnam  
**Water Depth :** 85 m  
**Storage Capacity :** 300,000 bbls  
**Oil Handling :** 18,000 bopd inlet  
**Client :** Korea National Oil Corporation (KNOC)  
**Contract :** EPCI+Time Charter  
**First Oil :** November 2006  
**Current Status :** In Operation (MODEC owns and operates)

2006

**Oveng TLP**



**Field :** Oveng field, Equatorial Guinea  
**Water Depth :** 280 m  
**Oil Production :** 25,000 bopd  
**Gas Production :** 30 mmscfd  
**Client :** HESS Corporation  
**Contract :** EPC  
**First Oil :** December 2006  
**Current Status :** Delivered

2007

**FSO Cidade de Macaé MV15**



**Field :** Marlim Sul, Roncador and Marlim Leste fields, Brazil  
**Water Depth :** 95 m  
**Storage Capacity :** 2,150,000 bbls  
**Oil Handling :** 818,000 bopd inlet  
**Client :** Petróleo Brasileiro S.A. (Petrobras)  
**Contract :** EPCI+Time Charter  
**First oil :** November 2007  
**Current Status :** In Operation (MODEC owns and operates)

2007

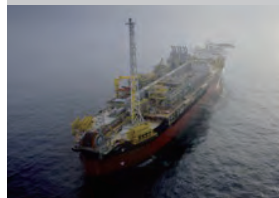
**FPSO Shybarrow Venture MV16**



**Field :** Shybarrow field, Australia  
**Water Depth :** 825 m  
**Storage Capacity :** 900,000 bbls  
**Oil Production :** 80,000 bopd  
**Gas Production :** 45 mmscfd  
**Client :** BHP Billiton Petroleum  
**Contract :** EPC+Time Charter  
**First Oil :** November 2007  
**Current Status :** Stand-by (MODEC owns)

2009

**FPSO Cidade de Niterói MV18**



**Field :** Marlim Leste field, Brazil  
**Water Depth :** 1,400 m  
**Storage Capacity :** 1,600,000 bbls  
**Oil Production :** 100,000 bopd  
**Gas Production :** 124 mmscfd  
**Client :** Petróleo Brasileiro S.A. (Petrobras)  
**Contract :** EPCI+Time Charter  
**First Oil :** February 2009  
**Current Status :** In Operation (MODEC owns and operates)

2010

**FPSO Pyrenees Venture**



**Field :** Pyrenees field, Australia  
**Water Depth :** 200 m  
**Storage Capacity :** 850,000 bbls  
**Oil Production :** 96,000 bopd  
**Gas Production :** 60 mmscfd  
**Client :** BHP Billiton Petroleum  
**Contract :** EPC+O&M  
**First Oil :** February 2010  
**Current Status :** In Operation (MODEC operates)



2010

**FPSO Cidade de Santos MV20**

**Field** : Urugua/Tambau fields, Brazil  
**Water Depth** : 1,300 m  
**Storage Capacity** : 700,000 bbls  
**Oil Production** : 35,000 bopd  
**Gas Production** : 350 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras)  
**Contract** : EPCI+Time Charter  
**First Oil** : July 2010  
**Current Status** : In Operation  
 (MODEC owns and operates)

2010

**FPSO Kwame Nkrumah MV21**

**Field** : Jubilee field, Ghana  
**Water Depth** : 1,100 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 120,000 bopd  
**Gas Production** : 160 mmscfd  
**Client** : Tullow Ghana Ltd.  
**Contract** : EPC + Time Charter (Ownership was transferred to the client)  
**First Oil** : December 2010  
**Current Status** : In Operation (MODEC operates)

2013

**FPSO Cidade de São Paulo MV23**

**Field** : Sapinhoá (formerly Guara) field, Brazil  
**Water Depth** : 2,118 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 120,000 bopd  
**Gas Production** : 180 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras) & its partners  
**Contract** : EPC+Time Charter and  
**First Oil** : January 2013  
**Current Status** : In Operation  
 (MODEC owns and operates)

2013

**OSX-3 FPSO**

**Field** : Waikiki, Pero and Inga fields, Brazil  
**Water Depth** : 110 m  
**Storage Capacity** : 1,300,000 bbls  
**Oil Production** : 100,000 bopd  
**Client** : OSX 3 Leasing B.V.  
**Contract** : EPCI  
**First Oil** : December 2013  
**Current Status** : Delivered

2015

**FPSO Cidude de Itaguaí MV26**

**Field** : Iracema Norte (formerly Cernambi Norte) field, Brazil  
**Water Depth** : 2,240 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 150,000 bopd  
**Gas Production** : 280 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras) & its partners  
**Contract** : EPCI+Time Charter  
**First Oil** : July 2015  
**Current Status** : In Operation  
 (MODEC owns and operates)

2016

**FPSO Cidade de Caraguatatuba MV27**

**Field** : Lapa (formerly Carioca) field, Brazil  
**Water Depth** : 2,126 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 100,000 bopd  
**Gas Production** : 177 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras) & its partners  
**Contract** : EPCI+Time Charter  
**First Oil** : December 2016  
**Current Status** : In Operation  
 (MODEC owns and operates)

2018

**FPSO Cidade de Campos dos Goytacazes MV29**

**Field** : Tartaruga Verde and Tartaruga Mestiça fields, Brazil  
**Water Depth** : 765 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 150,000 bopd  
**Gas Production** : 176 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras)  
**Contract** : EPCI+Time Charter  
**First Oil** : June 2018  
**Current Status** : In Operation  
 (MODEC owns and operates)

2021

**FPSO Carioca MV30**

**Field** : Sépia field, Brazil  
**Water Depth** : 2,200 m  
**Storage Capacity** : 1,400,000 bbls  
**Oil Production** : 180,000 bopd  
**Gas Production** : 212 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras)  
**Contract** : EPCI + Time Charter  
**First Oil** : August 2021  
**Current Status** : In Operation  
 (MODEC owns and operates)

2022

**FPSO MIAMTE MV34**

**Field** : Área 1 field, Mexico  
**Water Depth** : 32 m  
**Storage Capacity** : 700,000 bbls  
**Oil Production** : 90,000 bopd  
**Gas Production** : 75 mmscfd  
**Client** : Eni Mexico S. de R.L. de C.V.  
**Contract** : EPCI + Time Charter  
**First Oil** : Planned for 2022  
**Current Status** : Under Construction  
 (MODEC will own and operate)

2023

**FPSO Anita Garibaldi MV33**

**Field** : Marlim field, Brazil  
**Water Depth** : 670 m  
**Storage Capacity** : 1,000,000 bbls  
**Oil Production** : 80,000 bopd  
**Gas Production** : 248 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras)  
**Contract** : EPCI + Time Charter  
**First Oil** : Planned for 2023  
**Current Status** : Under Construction  
 (MODEC will own and operate)

2024

**Equinor Bacalhau FPSO**

**Field** : Bacalhau (formerly Carcarã) field, Brazil  
**Water Depth** : 2,050 m  
**Storage Capacity** : 2,000,000 bbls  
**Oil Production** : 220,000 bopd  
**Gas Production** : 530 mmscfd  
**Client** : Equinor Brasil Energia Ltda  
**Contract** : EPCI + O&M  
**First Oil** : Planned for 2024  
**Current Status** : Under Construction  
 (MODEC will operate)

2010

2010

**FPSO Cidade de Angra dos Reis MV22**

**Field** : Lula (formerly Tupi) field, Brazil  
**Water Depth** : 2,149 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 100,000 bopd  
**Gas Production** : 150 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras)  
**Contract** : EPCI+Time Charter  
**First Oil** : October 2010  
**Current Status** : In Operation  
 (MODEC owns and operates)

2012

**FPSO PSVM**

**Field** : Plutão, Saturno, Vênus and Marte (PSVM) fields, Angola  
**Water Depth** : 1,800 - 2,000 m  
**Storage Capacity** : 2,000,000 bbls  
**Oil Production** : 157,000 bopd  
**Gas Production** : 245 mmscfd  
**Client** : BP Exploration (Angola) Limited  
**Contract** : EPCI  
**First Oil** : December 2012  
**Current Status** : Delivered

2013

**FPSO Rarua**

**Field** : Māori field, New Zealand  
**Water Depth** : 50 m  
**Storage Capacity** : 600,000 bbls  
**Oil Production** : 45,000 bopd  
**Gas Production** : 35 mmscfd  
**Client** : OMV New Zealand Limited  
**Contract** : O&M  
**O&M started** : March 2013  
**Current Status** : In Operation (MODEC operates)

2014

**FPSO Cidade de Mangaratiba MV24**

**Field** : Iracema Sul (formerly Cernambi Sul) field, Brazil  
**Water Depth** : 2,200 m  
**Storage Capacity** : 1,600,000 bbls  
**Oil Production** : 150,000 bopd  
**Gas Production** : 280 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras) & its partners  
**Contract** : EPC+Time Charter  
**First Oil** : October 2014  
**Current Status** : In Operation  
 (MODEC owns and operates)

2016

**FPSO Prof. John Evans Atta Mills**

**Field** : Tweneboa, Enyenra and Ntomme (TEN) fields, Ghana  
**Water Depth** : 1,500 m  
**Storage Capacity** : 1,700,000 bbls  
**Oil Production** : 80,000 bopd  
**Gas Production** : 180 mmscfd  
**Client** : Tullow Ghana Ltd.  
**Contract** : EPCI + Time Charter  
**First Oil** : August 2016  
**Current Status** : In Operation  
 (MODEC owns and operates)

2018

**Stampede TLP**

**Field** : Stampede field, USA - Gulf of Mexico  
**Water Depth** : 1,067 m  
**Oil Production** : 80,000 bopd  
**Client** : Hess Corporation & its partners  
**Contract** : EPCM + Commissioning  
**First Oil** : January 2018  
**Current Status** : Delivered

2019

**FSO Ailsa**

**Field** : Culzean field, UK - North Sea  
**Water Depth** : 90 m  
**Storage Capacity** : 430,000 bbls  
**Oil Handling** : 25,000 bopd inlet  
**Client** : Maersk Oil North Sea UK Limited  
**Contract** : EPC  
**Delivery to Client** : June 2018  
**First Oil** : Planned for the 2nd quarter of 2019  
**Current Status** : Delivered

2022

**FPSO Guanabara MV31**

**Field** : Mero (formerly Libra) field, Brazil  
**Water Depth** : 2,100 m  
**Storage Capacity** : 1,400,000 bbls  
**Oil Production** : 180,000 bopd  
**Gas Production** : 424 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras) & its partners  
**Contract** : EPCI + Time Charter  
**First Oil** : Planned for 2022  
**Current Status** : Under Construction  
 (MODEC will own and operate)

2022

**FPSO Almirante Barroso MV32**

**Field** : Búzios field, Brazil  
**Water Depth** : 1,900 m  
**Storage Capacity** : 1,400,000 bbls  
**Oil Production** : 150,000 bopd  
**Gas Production** : 212 mmscfd  
**Client** : Petróleo Brasileiro S.A. (Petrobras)  
**Contract** : EPCI + Time Charter  
**First Oil** : Planned for 2022  
**Current Status** : Under Construction  
 (MODEC will own and operate)

2023

**Woodside Sangomar FPSO**

**Field** : Sangomar field, Senegal  
**Water Depth** : 780 m  
**Storage Capacity** : 1,300,000 bbls  
**Oil Production** : 100,000 bopd  
**Gas Production** : 130 mmscfd  
**Client** : Woodside Energy  
**Contract** : Purchase Contract + O&M  
**First Oil** : Planned for 2023  
**Current Status** : Under Construction  
 (MODEC will operate)



# Extensive Experience



## Robust EPCI Track Record

47 Completed Projects

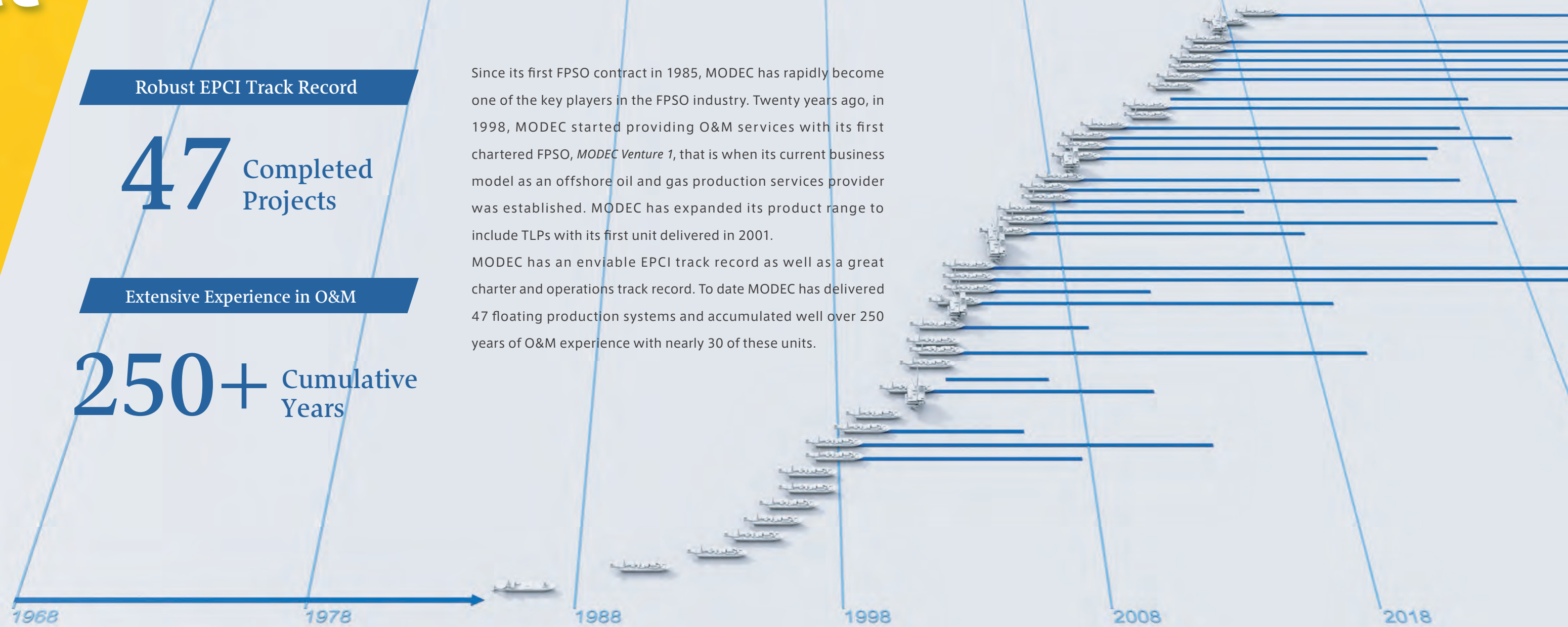
## Extensive Experience in O&M

250+ 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 47 floating production systems and accumulated well over 250 years of O&M experience with nearly 30 of these units.

## Extensive Experience





# FPSO / FSO

## Floating Production, Storage and Offloading vessel / Floating Storage and Offloading vessel

Ship shaped FPSO and FSO 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 owns 13 FPSOs and 3 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 markets or for further refining onshore.

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 20 years or longer. For hurricane, typhoon and cyclone prone areas disconnectable mooring systems can be provided.

## Advantages of FPSOs / FSOs are

- Reduced upfront investment
- Retained value since they can be relocated to other fields
- Abandonment costs are much lower than for fixed platforms
- Accommodate up to 70 risers and umbilicals
- Equipped for water injection back into the reservoir for pressure maintenance
- Equipped for gas export, gas lift or gas reinjection into the reservoir



# 1986

Oil Production:  
**25,000** bopd  
Water Depth:  
**88** m

# 1996

Oil Production:  
**31,000** bopd  
Water Depth:  
**110** m

# 2005

Oil Production:  
**70,000** bopd  
Water Depth:  
**970** m

# 2012

Oil Production:  
**150,000** bopd  
Water Depth:  
**2,000** m

# 2021

Oil Production:  
**180,000** bopd  
Water Depth:  
**2,200** m

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 steel tendons which provide stability by the tension created by the buoyancy of the hull structure. TLPs are well-suited for oil and gas production, supporting dry trees and/or wet trees in deep-water under severe oceanic conditions because they restrict vertical motion which allows for the use of surface wellheads and/or Steel Catenary Risers (SCRs).

Other features of TLPs include:

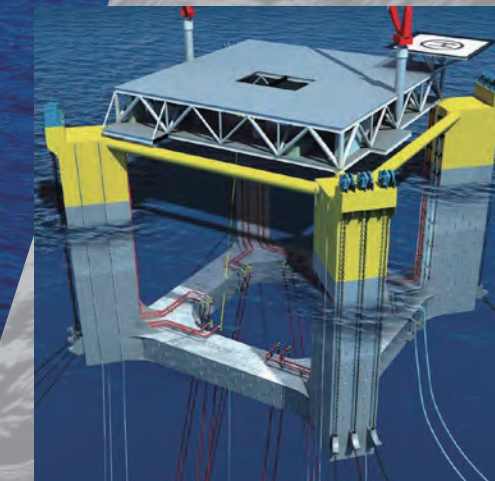
- Support full drilling rig with or without full process plant
- Support minimal drilling facilities with a Tender Assist Drilling (TAD) Vessel
- Support SCRs in shallow and deep water in severe environments
- Use as a wellhead system in conjunction with an FPSO for processing and storage
- Use as a drilling and production system and connected to an FSO for storage
- Cost effective solution for "small" to "intermediate" payloads and wellhead applications

Currently 28 TLPs are in operation worldwide of the world with MODEC having delivered more than 20% of the market share including:

- 2 Wellhead TLPs
- 2 Full process TLPs with drilling facilities
- 2 Wet tree TLPs



# Production Semi-Submersible



Production Semi-submersibles are floating platforms for oil and gas production and are primarily suited for deep water developments with wet trees using Steel Catenary Risers (SCRs) under severe environmental conditions.

MODEC has developed a Semi-Submersible design named Central Pontoon Semi-submersible (CP Semi). The unique hull shape in combination with a deep draft, optimizes the stability of the platform and minimizes the vertical motion for favorable SCR performance, robustness and reliability.

MODEC has also developed a Dry Tree CP Semi (DTCP Semi) for deep and ultra-deep water depth applications. The resulting lateral offsets and vertical motions allow the use of proven and conventional riser tensioner technology to be deployed.

Other key features of the CP Semi include:

- Use of SCRs for oil and gas production in deep and ultra-deep water depths
- Efficient for supporting large topsides
- Efficient for supporting large number of risers
- Cost efficient solution for deep to ultra-deep field developments
- Proven performance thru extensive wave model test for wet and dry tree applications



# 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 EPCI or lease 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, FSOs and TLPs.

## FLNG

### Floating LNG Production Systems

FLNGs are floating production facilities where natural gas from subsea reservoirs is converted into liquid hydrocarbons, i.e. Liquefied Natural Gas (LNG) by cooling it to minus 162° Celsius to form a more practical means for storage and transportation. MODEC has completed multiple FEED (Front End Engineering Design) studies for actual FLNG projects, and is ready to undertake such projects on an EPCI or lease basis. MODEC has multiple FLNG designs available to handle either dry or wet gas, and can provide extensive gas pretreatment facilities if so required. MODEC's FLNG solutions are based on both converted hulls or new built hulls. A site specific type of mooring system is selected depending on the prevailing environmental conditions and water depth.



## FSRWP®

### Floating Storage, Regasification, Water and Power

MODEC developed Floating Water and Power solutions to help its clients to provide their constituents with potable water and dependable electricity using clean natural gas as a fuel source either in the form of LNG or domestic natural gas. Typically, LNG storage and regasification, power generation and sea-water desalination are constructed and operated as separate projects. The FSRWP® uniquely combines these into one floating facility, thereby reducing construction time and cost, and achieving efficiencies through joint operation. The FSRWP® therefore produces power and water with a greater efficiency and at a cheaper cost than conventional onshore plants. Onboard the FSRWP®, electricity is generated by a Combined Cycle Gas Power Plant thereby achieving a very high thermal efficiency of approximately 50%. The turbine models and configurations are selected specifically to operate in a marine environment, thereby ensuring a reliable power supply for 30 years or more. Alongside the power generation, the sea-water desalination facilities can be installed on the same vessel. MODEC uses modular reverse osmosis (SWRO) technology, which treats sea-water to World Health Organization quality standards, ready for domestic or industrial use. Additionally, the FSRWP® can send regasified LNG to third party consumers onshore via a subsea gas pipeline.



FSR-Power®: 160 MW



FSR-Power®: 840 MW



FSR-Water®: 200,000 m³/day

\* 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.





[www.modec.com](http://www.modec.com)

## **MODEC, Inc.**

Tokyo Stock Exchange: 6269

## **Corporate Headquarters**

Nihonbashi Maruzen Tokyu Building, 3-10, Nihonbashi 2-chome,  
Chuo-ku, Tokyo 103-0027, Japan

## **USA**

MODEC International, Inc.

## **Singapore**

MODEC Management Services Pte. Ltd.  
MODEC Offshore Production Systems (Singapore) Pte. Ltd.

## **Brazil**

MODEC Serviços de Petróleo do Brasil Ltda.

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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.

