



## Sixth Generation Semi's: Design, Capabilities and Characteristics

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# Defining a 6<sup>th</sup> Generation Unit



- **There is no single agreed definition**
- **Most units marketed as 6<sup>th</sup> generation units were built in 2007 or later**
- **Units marketed as 6<sup>th</sup> generation do have similar characteristics**

# Principle Characteristics



- **Comparatively large**
- **Highly powered to support mud pumps, drawworks, topdrive(s), dual activity derricks, and dynamic positioning**
- **“Simpler” than earlier designs: Little or no cross-bracing**
- **Outfitted for 7,500+ water depth operations**

# Operations of 6<sup>th</sup> Generation Units



- **The 32 existing 6<sup>th</sup> generation units are currently operating in water depths ranging from  $\approx$ 460 to  $\approx$ 7650 feet**
- **At least 18 additional units are under construction**
- **Currently units are operating offshore of:**

<b>Australia</b>	<b>French Guiana</b>	<b>Norway</b>
<b>Brazil</b>	<b>Ghana</b>	<b>US (GoM)</b>
<b>China</b>	<b>Mexico</b>	<b>Viet Nam</b>

# Designs of 6<sup>th</sup> Generation Units



Several designs are being marketed as 6<sup>th</sup> generation units, these include:

Aker H-6e

ENSCO 8500

F&G EX-D

MSC DSS-51

F&G EX-D Millenium

MSC DSS-21

Frigstad D90

MSC DSS-38

Gusto MSC TDS 2500

Modified Bingo

GVA 7500

MOSS CS50 MKII

GVA 7500 enhanced

Sevan (cylindrical)

# Scarabeo 9 comparison



Attribute	F&G EX-D Millennium (typical)	Aker H-6e	Scarabeo 9
Operational Displacement	46,500 tons	56,900 tons	52,932 tons
Variable Deck Load – operational	8,000 tons	7,000 tons	8,100 tons
Main power	50,560 HP	56,528 HP	61,770 HP
Fuel capacity	3,380 cu m		4,049 cu m
Dynamic positioning	DP-2+ or DP-3 (per owner) 8 thrusters	DP-3 8 thrusters	DP-3 8 thrusters
Mooring	4 double drum winches with 8 fairleads for connection to pre-set moorings	4 double drum winches with 8 fairleads for connection to pre-set moorings	4 double drum winches with 8 fairleads for connection to pre-set moorings
Rig	1,250 st 51,400 ft setback	Dual rig 1,000 st 33,000 ft setback	Dual rig 1,000 st 50,000 ft setback
Riser	7,500 or 10,000 ft – 21 inch	10,000 ft – 21 inch	10,000 ft – 21 inch
BOP	Per owner specification Most are: 18 <sup>3</sup> / <sub>4</sub> “ x 10,000 or 15,000 psi 5 or 6 cavity	2 - 18 <sup>3</sup> / <sub>4</sub> “ x 10,000 psi annular, 5 - 18 <sup>3</sup> / <sub>4</sub> “ x 10,000 psi ram	2 - 18 <sup>3</sup> / <sub>4</sub> x 10,000 psi annular 5 - 18 <sup>3</sup> / <sub>4</sub> x 10,000 psi ram
Accommodations	180 persons	160 persons	200 persons

# Conclusion



- **6<sup>th</sup> Generation units are proven designs for deepwater operations**
- **Scarabeo 9 design is generally typical of other 6<sup>th</sup> generation units**