

Floating Production What's New In April

Jim McCaul – IMAstudies

Current Inventory – 321 oil/gas floating production units are now in service, on order or available for reuse on another field. FPSOs account for 65% of the existing systems, 75% of systems on order. Production semis, barges, spars and TLPs comprise the balance.

Another 29 floating LNG processing systems are in service or on order. Liquefaction floaters account for 14%, regasification floaters 86%. No liquefaction floaters are yet in service – all 4 are on order. Several of the 12 active FSRUs are interim regasification units being used until the long term unit is delivered.

In addition, 102 floating storage units are in service, on order or available.

Number of Floating Production and Storage Units In Service, On Order or Available for Reuse

(As of 1 April 2014)

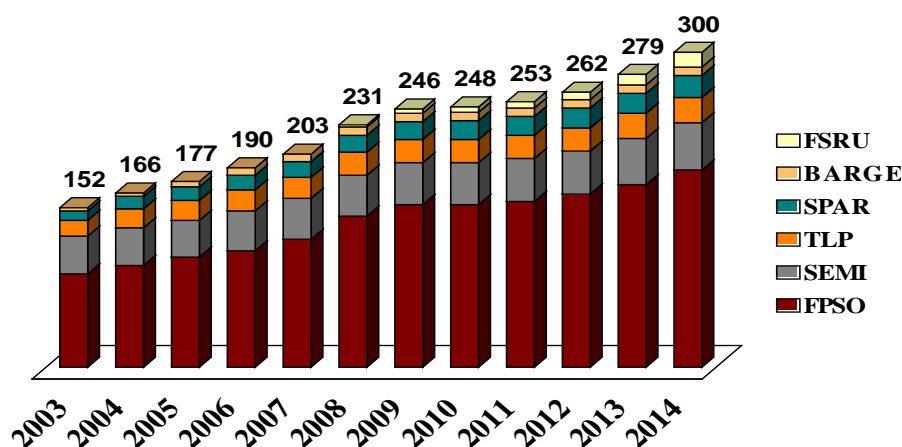
	<u>Total</u>	<u>Active</u>	<u>On Order</u>	<u>Available</u>
<u>Oil/Gas Production</u>				
FPSO	213	156	38	19
Production Barge	10	8	2	0
Production Semi	47	40	3	4
Production Spar	23	18	4	1
TLP	28	24	4	0
Total	321	246	51	24
<u>LNG Processing</u>				
FLNG	4	0	4	0
FSRU	25	13	12	0
<u>Storage Systems</u>				
FSO	102	92	9	1

Ten Year Growth Trend– The number of production floaters in service or available has increased 84% over the past ten years. At end-2003 there were 152 units. By end-2013 the total increased to 279 units. With scheduled deliveries this year, by end-2014 the inventory will grow another 8% to 300 units in service or available, assuming no units are scrapped.

Composition of the operating/available inventory has changed over the past decade. FPSOs accounted for 59% of the units in 2003. At end-2013 FPSOs were 62% of the total. This reflects the faster growth of FPSOs since 2003. FPSOs increased 96% over the ten year period. All other units grew 67%.

Ten Year Growth in Floating Production Systems

(No. of Units in Service or Available
As of End Each Year)



Ownership of Production Semis, Spars, TLPs and Barges – In our March “What’s New” we profiled ownership of FPSOs. Here we profile ownership of other types of production floaters.

Five field operators own ~50% of the 108 production semis, spars, TLPs and barges now in service or on order. Petrobras is the clear leader, with 16% ownership share of the inventory.

Top Owners of Production Semis, Spars, TLPs and Barges In Terms of Number of Units Owned

(As of 1 April 2014)

Owner	Type	In Service	On Order	Total	Composition
Petrobras	FO	17		17	16 Semis, 1 TLP
Statoil	FO	10	1	11	8 Semis, 1 Spar, 2 TLPs
Anadarko	FO	7	2	9	1 Semi, 8 Spars
Shell	FO	8	1	9	1 Semi, 1 Spar, 7 TLPs
Chevron	FO	6	1	7	2 Semi, 2 Spars, 2 TLPs, 1 Barge
Total	FO	3	2	5	2 TLPs, 3 Barges
BP	FO	4		4	3 Semis, 1 Spar
ENI	FO	2	1	3	2 TLPs, 1 Barge
ExxonMobil	FO	3		3	1 Spar, 2 TLPs
Hess	FO	2	1	3	3 TLPs
Murphy	FO	3		3	3 Spars
Plains E&P	FO	3		3	2 Spars, 1 TLP
BHP	FO	2		2	2 TLPs
ConocoPhillips	FO	2		2	2 TLPs
LLOG	FO	1	1	2	2 Semis
Petrofac	FO	1	1	2	2 Semis
Williams	MS	1	1	2	2 Spars
EPP	MS	2		2	1 Semi, 1 TLP

Legend: FO=Field Operator MS=Midstream Company
Note: One of Anadarko's Spars has stopped production. Some units are jointly owned.

Production unit preferences of various operators are indicated by the type units owned. Petrobras has almost entirely production semis. Anadarko has almost entirely spars. Shell has mostly TLPs. Statoil, Chevron and Total have a mixture of units.

Unlike FPSOs where leasing contractors own 48% of the units in service, all but a few of these other type production units are owned by field operators. The exceptions include several GOM production units owned by midstream companies, a few small production barges operated in Africa and a production semi in the GOM (*Thunder Hawk*) owned by SBM and supplied to Murphy under a production handling agreement.

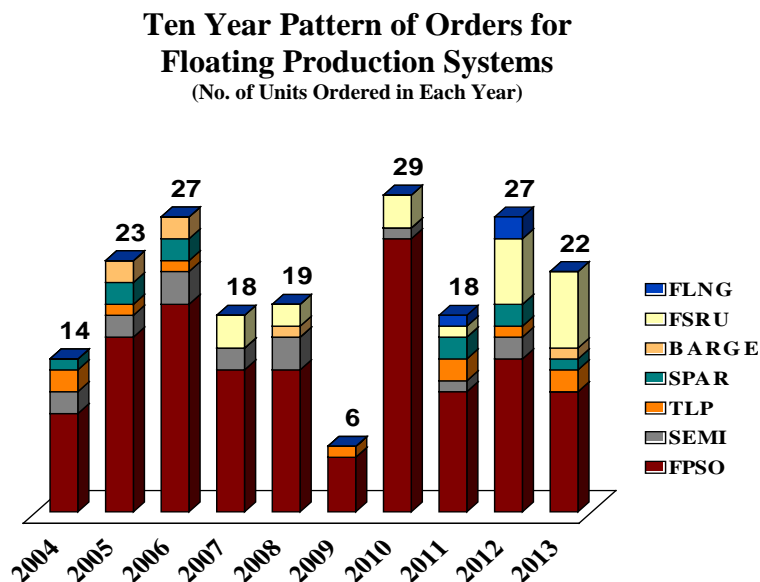
Also differing from FPSOs, 83 of the 108 units (77%) are built on new hulls. Only 25 were converted from existing hulls – 22 using drill rigs as the conversion hull. In contrast, 35% of FPSOs have been built on new hulls, 65% have used an existing tanker for conversion.

Another difference is the scarcity of redeployment in this group of production units. Compared to FPSOs, they are harder to relocate. Only three of the existing units (all semis) have been redeployed from a previous field. In contrast 24 FPSOs have been redeployed over the past ten years.

Production Floater Orders – 67 production floaters are currently on order. The figure includes 38 FPSOs, 13 other oil/gas production units and 16 LNG processing units. In the later are 4 floating liquefaction plants and 12 regasification terminals.

Two orders for FPSOs were placed in the last two days of March. ENI awarded Bumi Armada an EPC contract + lease for an FPSO to use offshore Angola. Contract value is \$2.9 billion. Premier awarded BWO an EPC contract + 7 year lease to supply an FPSO for the UK North Sea. Contract value is \$2.3 billion.

Orders for 203 production floaters have been placed over the past ten years – an average of just over 20 units per year. As indicated in the chart below there has been significant variation in number of orders during this time period.



The peak was in 2010 when 29 production floaters were ordered. Partially responsible for the 2010 spike was the deferral of orders resulting from the 2008/09 global financial collapse. In two other years (2006 & 2012) the ordering pace reached 27 units. The low point was in 2009 when the financial crisis shut down orders for 12 months.

Backlog of Planned Floater Projects – 242 floating production projects are in various stages of planning as of beginning April. Of these, 57% involve an FPSO, 15% another type oil/gas production floater, 23% liquefaction or regasification floater and 5% storage/offloading floater.

**Breakdown of Planned Projects by
Type Production System Required**
(As of 1 April 2014)

<u>Type System Required</u>	<u>Number of Projects</u>
FPSO	137
OTHER FPS	37
FLNG	31
FSRU	24
FSO	<u>13</u>
Total	242

Brazil, Africa and SE Asia are the major locations of floating production projects in the visible planning stage. We are tracking 50 projects in Africa, 50 in Brazil and 44 projects in SEA – 60% of the visible planned floating production projects worldwide.

**Breakdown of Planned Projects by
Location of Field**
(As of 1 April 2014)

<u>Project Location</u>	<u>Number of Projects</u>
Africa	50
Brazil	50
SE Asia	44
GOM	24
No. Europe	21
Aust/NZ	15
Medit	12
SW Asia	11
Other	<u>15</u>
Total	242

The composition of projects by region varies. Projects in Africa and Brazil mostly involve FPSOs, a significant portion of which are big units. In SEA there is a mixture of FPSO, FLNG, FSRU and FSO requirements. The GOM has a mixture of Semi, Spar and TLP projects on the US side, FPSO projects on the Mexican side and FLNG export terminal projects on the US GOM coast. In North Europe there are a mixture of FPSOs, a few Semi/TLP projects and several small projects that might use a production buoy. In Australia the projects are mostly FLNGs.

Near Term Outlook for Orders – Around 25% of the 242 projects in the planning stage are at an advanced stage of development. These projects have either entered the FEED phase, pre-qualification of floater contractors has been initiated or bidding/negotiation is in progress. Award of the production floater contract in these projects is likely within the next 2-3 years.

The remaining 75% of the planned projects are in an early stage of development. Contract awards are more likely in the 3+ year time frame.

A list of production floater contracts likely to be awarded over the next 12 months is available. Just email Jim McCaul at imaassoc@msn.com to request a copy.

Further Details – We have the capability to prepare detailed customized reports on all aspects of the floating production systems market. For further information, please contact Jim McCaul at imaassoc@msn.com or call 202 333 8501. We will be pleased to discuss how we might be of assistance.

Terms Used

FPSO – Floating Production, Storage and Offloading Vessel
FSO – Floating Storage and Offloading Vessel (no production plant)
FSRU – Floating LNG Storage and Regasification Unit
FLNG – Floating LNG Liquefaction Plant
Semi – Production Semisubmersible
TLP – Tension Leg Platform
SPAR – Production Spar (cylindrical shape)
FPS – Floating Production System (all types)
EWT – Extended Well Test
FEED – Front End Engineering and Design

About IMA

IMA provides market analysis, competitive benchmarking and business planning support in the maritime and offshore sectors. Over the past 40 years we have performed more than 350 business consulting assignments for 170+ clients in 40+ countries.

One of our specialties is analyzing requirements for floating production systems. IMA has published more than 50 reports since 1996 analyzing this business sector. We have also been engaged by numerous clients to assist in analyzing specific market opportunities in the floating production sector.

Please visit our website www.imastudies.com for more information about IMA.