

# TABLE OF CONTENTS

<b>I. Current and Planned Floating Production Systems</b>	<b>12</b>
➤ Recent orders	13
➤ Recent deliveries	17
➤ What’s now being built	18
➤ Trend in order backlog	21
➤ Composition of order backlog	22
➤ Current fabrication and conversion activity	23
➤ Floater projects planned or under study	27
➤ Floating production database	33
<b>II. Recent Developments</b>	<b>39</b>
➤ Floater Prospects in the Appraisal Stage	39
◇ NEW Graff-1 (Namibia)	39
◇ NEW Alto de Cabo Frio (Brazil)	40
➤ Floater Prospects in the Planning Stage	40
◇ Bonga Southwest/Aparo (Nigeria)	40
◇ NEW Venus (Namibia)	41
◇ NEW Evans Shoal (Australia)	42
◇ Deep Waters Sergipe (SEAP II) (Brazil)	42
◇ NEW Tres Marias FPSO (Brazil)	42
◇ Saasken (Mexico)	43
◇ NEW Thessaloniki LNG (Greece)	43
◇ NEW Anambas (Indonesia)	44
➤ Floaters in the Bidding or Final Design Stage	44
◇ Blk 31 SE - PAJ (Angola)	44
◇ Deep Waters Sergipe (P-81) (Brazil)	44
◇ Bay du Nord (Newfoundland)	45
◇ Cedar LNG (Canada)	45
◇ North Platte (U.S.)	45
◇ NEW Argo (Greece)	46
◇ NEW Italian LNG (Italy)	46

◇ NEW Thrace INGS (Greece)	46
◇ NEW Avalon (U.K.)	47
◇ Cambo Hub (U.K.)	47
◇ German LNG (Three units) (Germany)	47
◇ NEW Paldiski LNG (Estonia)	48
◇ Rosebank (U.K.)	48
◇ Limbayong (Malaysia)	48
◇ Rossukon (Thailand)	49
◇ Wassana (Thailand)	49
➤ Projects Not Proceeding	49
◇ Buffalo Redevelopment (East Timor)	49
➤ New orders	50
◇ Hoegh Gannet FSRU (Brazil)	50
◇ Polvo FPSO (Brazil)	50
◇ Firenze FPSO (Cote d'Ivoire)	51
◇ NEW Fast LNG #1 MOPU (Congo)	51
◇ NEW Fast LNG #2 (Ex-Sevan Brasil & Ex-Sevan Driller) FLNG (US)	52
◇ Salamanca (ex-Independence Hub) SEMI (KC 642 / 736)	52
◇ NEW Forel FPSO (Indonesia)	53
◇ NEW Ish FSO (LNG) (Philippines)	53
◇ Ingenium MOPU (Thailand)	53
◇ NEW Hai Yang Shi You 122 FPSO (China)	54
◇ FSRU S-188 (The Netherlands)	54
➤ Systems on Order	55
◇ Energean Power FPSO (Israel)	55
◇ Etyfa Promitheas FSRU (Cyprus)	55
◇ One Guyana FPSO (Guyana)	56
◇ Petrojarl Varg FPSO (India)	56
➤ Systems Recently Completed	57
◇ FSRU Karmol LNGT Powership Asia (Brazil)	57

◇ Liza Unity FPSO (Guyana)	57
◇ Njord A SEMI & Njord Bravo FSO (Norway)	58
◇ Sagar Samrat MOPU (India)	58
➤ Existing Systems	59
◇ Kwame Nkrumah FPSO (Ghana)	59
◇ Cidade de Anchieta FPSO (Brazil)	59
◇ P 50 FPSO (Brazil)	59
◇ Yuum Kak Naab FPSO (Mexico)	60
◇ Aoka Mizu FPSO (U.K.)	60
◇ BW Joko Tole FPSO (Indonesia)	60
◇ Erawan 2 FSO (Thailand)	61
◇ Ruby II FPSO (Vietnam)	61
◇ Transgas Force & Transgas Power FSRU	61
➤ Available Systems	62
◇ Fluminense FPSO (Brazil)	62
◇ Hummingbird Spirit FPSO (U.K.)	62
◇ Petrojarl Foinaven FPSO (U.K.)	62
◇ Petrojarl Knarr FPSO (Norway)	63
◇ Northern Endeavor FPSO (Australia)	63
➤ Decommissioned Systems	64
◇ Cidade de Sao Vicente FPSO (Brazil)	64
◇ Orca SEMI (South Africa)	64
◇ Stybarrow Venture MV16 FPSO (Australia)	64
◇ Trinity Spirit FPSO (Nigeria)	65
◇ Umuroa FPSO (New Zealand)	65
◇ Veslefrikk B SEMI (Norway)	65
<b>III. Industry Activity &amp; Analysis</b>	<b>66</b>
◇ Oil Price & Cost Inflation	66
◇ Impact of Russian Invasion = LNG boom and Energy Security	68

◇ Redeployment Rush	70
◇ Implications of Keppel/Sembcorp Merger	72
◇ Most Likely Awards in Next 12 Months	73

## **Appendix I: Projects in Planning Pipeline 75**

◇ Africa	75
◇ Australia	92
◇ Brazil	98
◇ Canada	110
◇ Gulf of Mexico	112
◇ Mediterranean	120
◇ North Sea	123
◇ South America (excluding Brazil)	133
◇ Southeast Asia	137
◇ China	151
◇ Southwest Asia and Middle East	152

## **Appendix II: On Order FPS Units 155**

◇ BARGE 1 unit	156
◇ FPSO 30 units	157
◇ FLNG 4 units	173
◇ FSRU 5 units	175
◇ SEMI 6 units	178
◇ FSO 9 units (3 Oil, 6 LNG)	181
◇ MOPU 5 units	185
◇ Under Repair: 2 units	187

## **Appendix III: Installed and Available FPS Units 188**

◇ FPSO 162 units	188
◇ BARGE 9 units	207
◇ FLNG 5 units	208
◇ FSRU 36 units	209

◇ LNG REGAS 8 units	214
◇ SEMI 38 units	215
◇ SPAR 21 units	220
◇ TLP 27 units	223
◇ FSO 101 units (92 Oil, 9 LNG)	227
◇ MOPU 16 units	239
◇ Available Vessels: 36 units	242

**Appendix IV: Historical Installed FPS Units** **247**

## LIST OF ILLUSTRATIONS

➤ Fig 1. Total Units by FPS Type	12
➤ Fig 2. Total FPSOs by Status	12
➤ Fig 3. Available Units by Type and Year Idle	13
➤ Fig 4. Units Awarded by Quarter	14
➤ Fig 5. Units Awarded by Capex	14
➤ Fig 6. FPS Units Awarded	15
➤ Fig 7. FPS Awards in Relation to Oil Price	15
➤ Fig 8. Order Pace 2008-2022	16
➤ Fig 9. FPS Units Delivered since 2022	17
➤ Fig 10. FPS Units On Order by Hull Type	18
➤ Fig 11. FPS Units On Order by Contract Type (Lease/Own)	19
➤ Fig 12. Map of FPS Units on Order	20
➤ Fig 13. Order Backlog for FPS Units	21
➤ Fig 14. Orderbook by FPS Type	22
➤ Fig 15. Distribution of Units on Order by Yard	26
➤ Fig 16. Projects in Planning Pipeline by Region	27
➤ Fig 17. Projects in Planning Pipeline by Region-LNG&Non-LNG	28
➤ Fig 18. Deepwater and Ultra Deepwater Projects by Region	29
➤ Fig 19. Projects in Bidding and Final Design Stage by Region and Water Depth	30
➤ Fig 20. Projects in Planning Stage by Region and Water Depth	31
➤ Fig 21. Projects in Appraisal Stage by Region and Water Depth	32
➤ Fig 22. Map of FPS Units	34
➤ Fig 23. Table of Production and Storage Floaters by Type and Region	35
➤ Fig 24. FPSO by Status and Region	36
➤ Fig 25. FSO by Status and Region	36
➤ Fig 26. FSRU by Status and Region	37
➤ Fig 27. FLNG by Status and Region	37
➤ Fig 28. SEMI by Status and Region	38

➤ Fig 29. SPAR/TLP by Status and Region	38
➤ Fig 30. Comparison of Operating Cost, Capital Cost & Oil Price Indices	66
➤ Fig 31. Consolidation of offshore drilling players (2014-2021)	67
➤ Fig 32. Selected Energy Exports from Russia (2021)	69
➤ Fig 33. Europe’s Biggest Importers of Russian Oil	69
➤ Fig 34. Russia’s Gas Exports	69
➤ Fig 35. Available Units by Type & Year	71
➤ Fig 36. Likely Awards - FPSOs	73
➤ Fig 37. Likely Awards (Non-FPSOs)	74
➤ Fig 38. FPS Units On Order & Under Repair Summary	155