

















## PROJECTS TRACK RECORD

CLIENT	PROJECT		COUNTRY	WATERDEPTH	DESCRIPTION OF PROJECT	TYPE	YEAR
BOUSTEAD / BSES	Royal Malaysian Navy		Malaysia	25 m	<ol style="list-style-type: none"> <li>Design of subsea component</li> <li>Offshore installation procedures</li> <li>Offshore Installation design and calculation</li> <li>Structural design of support &amp; lifting frames</li> <li>Technical Management of the project</li> <li>Supply of manpower for offshore installation</li> </ol>		2023
							2024
YOKOHAMA	Pertamina CALM Buoy		Indonesia	25 m	<ol style="list-style-type: none"> <li>Static &amp; Dynamic Analysis of subsea hoses</li> <li>Dynamic analysis of hoses in 100-10-1 yr. storms</li> </ol>		2023
SEAGULL GROUP / TECHNIPFCM	General		Singapore	~	<ol style="list-style-type: none"> <li>Structural design of support systems for subsea matt</li> </ol>		2023
LNG EASY	MFP		Malaysia	25 m	<ol style="list-style-type: none"> <li>Design of Mooring Buoys</li> <li>Mooring system design</li> <li>Design of Floating Platform</li> <li>Design of flexible hose system</li> <li>Design of Tripod</li> <li>General Naval Architecture</li> </ol>		2023
BLUESEAS	Shell CPRP-07		Brunei	25 m	<ol style="list-style-type: none"> <li>Design of ballast clamps for subsea 6" flowline</li> </ol>		2023
VENTURER TIMBERWORK	Cave Cay		Bahamas	25 m	<ol style="list-style-type: none"> <li>Survey &amp; review of existing materials and floats</li> <li>Review of structural design</li> <li>Stability analysis for Neptune floating suite</li> <li>Mooring analysis</li> <li>Hurricane system design</li> </ol>		2023
BW ENERGY / TUFF OFFSHORE	Maromba Field FPSO		Brazil	152 m	<ol style="list-style-type: none"> <li>Turret mooring system engineering.</li> <li>Mooring analysis</li> <li>Fatigue analysis</li> <li>Mooring design</li> <li>Field lay-out.</li> </ol>		2023
							









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CLIENT	PROJECT		COUNTRY	WATERDEPTH	DESCRIPTION OF PROJECT	TYPE	YEAR
UTS	General		Singapore	~	1. Design of SPHLM Platform		2023
YINSON	Maria de Quiteria FPSO	 YINSON HOLDINGS BERHAD (259147-A) YOUR PARTNER IN INTEGRATED OFFSHORE SERVICES	Brazil	1,300 m	1. Supply of Offshore Chain and subsea connectors through VICINAY MARINE		2023
BOSKALIS	FPSO Armada Sterling V		India	400 m	1. Design of Offshore installation hang off platform and incorporation into the Installation vessel for the subsea flexibles' installation.		2022
YINSON	ENAUTA FPSO	 YINSON HOLDINGS BERHAD (259147-A) YOUR PARTNER IN INTEGRATED OFFSHORE SERVICES	Brazil	1,500 m	1. Supply of Offshore Chain and subsea connectors through VICINAY MARINE		2022
BUREAU VERITAS	FPSO Armada Sterling V		Singapore / India	400 m	2. Independent review of the SPOG FPSO marine and oil and gas systems for sail away status and readiness from the yard 3. Independent review of the commissioning status of marine, vessel and process systems. 4. Independent review of classification Society status. 5. Independent review of the health Safety and Environment plans, HAZOP's, etc.		2022
BOSKALIS	Boko Tiamat		Singapore	~	1. Design review of crane boom support structure and FEA		2022
SEAGULL GROUP	Vessel refurbishment		Singapore	~	1. Piping design and lay-out 2. Piping isometrics 3. Piping drawings		2022
INDIAN NAVY / METS	Floating Dock		India	20 m	1. Engineering, analysis and procedures for the unmooring and relocation of the dock 2. Procedures adapted to the existing vessel spread 3. Towing of Floating dock 4. Relocation of Floating dock along the quay side 5. Offshore Construction Manager on-site for the offshore phase		2022

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BW ENERGY / TUFF OFFSHORE	Maromba Field FPSO	 BW ENERGY	Brazil	152 m	<ol style="list-style-type: none"> <li>Detailed mooring design, field lay-out</li> <li>Fatigue Analysis</li> <li>Offloading analysis</li> <li>Specifications for mooring system and offloading systems</li> </ol>		2022
		 TUFF					
LLOYDS REGISTER	CORAL FLNG	 Lloyd's Register	Mozambique	2,000 m	<ol style="list-style-type: none"> <li>Preparation of documentation for the operation of the FLNG</li> <li>HAZID &amp; Document review</li> </ol>		2022
EPCM ENGINEERS LIMITED	Barge	 EPCM engineers INSPIRATION . INNOVATION . INSIGHT	Nigeria	70 m	<ol style="list-style-type: none"> <li>Design review and FEA analysis of flare structure and flare bridge</li> <li>Pile design &amp; review</li> <li>Mooring system review</li> </ol>		2022
VESTIGO / VANTAGE	MAMPU-1 FPSO Nautica-Muar FSO	 VESTIGO Investigate, Seek, Explore	Malaysia	75 m	<ol style="list-style-type: none"> <li>Procedures, engineering &amp; analysis for mooring retrieval, mooring system installation and relocation of FPSO / FSO</li> <li>Procedures, engineering, analysis for riser retrieval &amp; hook-up at FPSO &amp; Platform</li> <li>Offshore Construction Manager offshore on-site</li> </ol>		2022
		 VANTAGE ENERGY GROUP					
ECA	Gen-Set	 ECA GROUP	Malaysia	~	<ol style="list-style-type: none"> <li>Client representative during the FAT</li> </ol>		2022
YOKOHAMA RUBBER CO	CALM Buoy Hoses	 YOKOHAMA	Japan	100 m	<ol style="list-style-type: none"> <li>CALM Buoy system hose design</li> <li>Complete Subsea Hose static &amp; dynamic analysis and design</li> <li>Subsea design of hose and ancillary equipment, buoys etc.</li> </ol>		2022






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ARAMCO / KAVIN ENGINEERING	Marjan Field		Saudi Arabia	55 m	<ol style="list-style-type: none"> <li>Detailed design of 3.4 km, 15 kV Subsea Power Cable with fibre optic and ancillary equipment, between two existing platform</li> <li>On-bottom stability, On-bottom walking assessment</li> <li>Route assessment and final route design</li> <li>Installation engineering, analysis, procedures &amp; requirements</li> <li>Bend stiffeners, J-tube, protection</li> <li>Specifications for the cable and its equipment</li> </ol>		2021 / 2022
							
ECA VANTAGE BSES	Subsea Equipment		Malaysia	25 m	<ol style="list-style-type: none"> <li>Design of installation frames (100 Mton)</li> <li>Engineering, design, analysis of subsea installation</li> <li>Engineering design and analysis of subsea cable installation (10 km)</li> </ol>		2021 / 2022
YOKOHAMA RUBBER CO	CALM Buoy Hoses		Indonesia	50 m	<ol style="list-style-type: none"> <li>CALM Buoy system hose design</li> <li>Subsea Hose static analysis</li> </ol>		2021
MOOREAST	Klang River Rubbish collector		Malaysia	10 m	<ol style="list-style-type: none"> <li>Mooring analysis of vessel</li> <li>Analysis of floating booms</li> <li>Review design suitability</li> <li>Installation requirements &amp; procedures</li> </ol>		2021
BWO / SEAGULL	FSRU		Singapore	NA	<ol style="list-style-type: none"> <li>Design and engineer of pump support system for LNG tanks</li> <li>Integration of support with existing tanks</li> </ol>		2021
SAIPEM	Barges		Thailand	20 m	<ol style="list-style-type: none"> <li>Engineering support for offshore installation</li> <li>Engineering, procedures, drawings, analysis</li> </ol>		2020
JAMES FISCHER / KRIS ENERGY	Apsara Field		Cambodia	80 m	<ol style="list-style-type: none"> <li>Supply of Offshore construction Manager and project engineer for offshore installation</li> <li>Design of riser and power cable hang-off balcony at the platform.</li> <li>Offshore installation of risers and Power cable</li> <li>OCM &amp; Engineers for the installation</li> </ol>		2020
YOKOHAMA RUBBER CO	CALM Buoy Hoses		Japan	100 m	<ol style="list-style-type: none"> <li>CALM Buoy system hose design</li> <li>Complete Subsea Hose dynamic analysis and design</li> <li>FSO</li> <li>Complete floating Hose analysis</li> </ol>		2020

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LNG EASY	MFP		Myanmar	10 m	<ol style="list-style-type: none"> <li>1. Mooring &amp; SURF Installation, hook-up, and commissioning engineering of an LNG Floating platform for the connection with an LNG Tanker as FSU</li> <li>2. Installation and commissioning Management</li> <li>3. Installation and commissioning manager of the MFP</li> </ol>		2020
NOC / TUFF	FSO & CALM Buoy		Qatar	70 m	<ol style="list-style-type: none"> <li>1. FEED STUDY level 2&amp;3 for the mooring systems and vessel conversion requirements for FSO and CALM Buoy system</li> <li>2. Chain stoppers and mooring system, specifications, RFQ</li> <li>3. Structural design and engineering for reinforcements on vessel</li> <li>4. Naval Architecture for conversion</li> <li>5. Mooring analysis</li> <li>6. Fatigue analysis</li> <li>7. Mooring system design</li> </ol>		2019
							
SOA / HYUNDAI (HOB)	CALM Buoy		Korea	34 m	<p>Review of life remaining in mooring chain.</p> <ol style="list-style-type: none"> <li>1. Review of chain thickness report</li> <li>2. Calculating and establishing the chain remain Life from a strength point of view</li> <li>3. Calculating and establishing the chain remain Life from a fatigue point of view</li> <li>4. Procedures for changing out chain segments</li> <li>5. Approval from Class Society for the change out proposed.</li> <li>6. Chain tensioning system engineering, analysis, procedures and drawings</li> <li>7. Offshore installation analysis and procedures</li> <li>8. Structural modifications design &amp; engineering</li> </ol>		2020
NOC / TUFF	FSO & CALM Buoy		Qatar	70 m	<ol style="list-style-type: none"> <li>1. FEED STUDY for mooring systems options</li> <li>2. Technical commercial review of solutions</li> <li>3. Design of mooring system , mooring analysis</li> </ol>		2020
YOKOHAMA RUBBER COMP.	MVS		Vietnam	90 m	<ol style="list-style-type: none"> <li>1. Dynamic analysis of offloading hose when free floating behind FPSO</li> <li>2. Dynamic analysis of offloading hose when looped back behind FPSO</li> <li>3. Dynamic analysis of offloading hose when used in Tandem FPSO – Shuttle tanker</li> <li>4. Loads from floating hose on full system.</li> </ol>		2020

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UTS / CORTEZ	Offshore Installation		Singapore	500 m	<ol style="list-style-type: none"> <li>Structural design and engineering of requirements and changes for the VLS system to be loaded on board the installation vessel, for the SURF installation of flowlines and risers</li> <li>Integration of new system with existing systems</li> </ol>		2020
NOC	FSO & CALM Buoy		Qatar	70 m	<ol style="list-style-type: none"> <li>FEED level 1 STUDY for the mooring systems and vessel conversion requirements</li> <li>Chain stoppers and mooring system</li> <li>Thruster and their requirements and analysis</li> <li>Structural reinforcements on vessel</li> <li>Naval Architecture for conversion</li> </ol>		2019
AMANIAGA	CALM Buoy		Malaysia	30 m	<ol style="list-style-type: none"> <li>Detailed Mooring Analysis, including Fatigue for CALM Buoy</li> <li>Review of requirements for upgrade of buoy.</li> <li>Procedures for installation</li> </ol>		2019
BLUESEAS ENERGY / EA TECHNIQUE	TST SEPAT - C		Malaysia	53 m	<ol style="list-style-type: none"> <li>Detailed Riser and flowline design</li> <li>Field lay-outs</li> <li>Fabrication of components</li> <li>Management of Riser / flowline system</li> </ol>		2019
T7GLOBAL / CHOC	FSO Puteri Cakerawala		Malaysia	55m	<ol style="list-style-type: none"> <li>Detailed design of offloading floating hose system.</li> <li>Dynamic analysis and resonance analysis of floating hose during offloading and during extreme conditions.</li> </ol>		2019
AMANIAGA	CALM Buoy		Malaysia	30 m	<ol style="list-style-type: none"> <li>Inspection of CALM Buoy prior to removal</li> <li>Engineering, stability, and dynamic analysis for Calm Buoy removal and Tow out.</li> <li>Decommissioning procedures</li> <li>Support personnel for the preparation of the Tow out</li> <li>Tow-out and delivery to quay side.</li> </ol>		2019







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MOPU HOLDINGS	Temporary Storage Tanker	 A Cepsa Company	Malaysia	60 m	<ol style="list-style-type: none"> <li>1. Reinstatement of Mooring System</li> <li>2. Complete analysis design checks and reviews for the mooring system</li> <li>3. Complete Installation procedures and on-going review</li> </ol>		2019
SOA / HYUNDAI (HOB)	CALM Buoy		Korea	34 m	<ol style="list-style-type: none"> <li>1. Hydrodynamic analysis of CALM Buoy</li> <li>2. Complete Mooring analysis, design and engineering, fatigue assessment etc.</li> <li>3. Riser analysis, design and engineering</li> <li>4. Detailed Installation Procedures</li> </ol>		2019
HESS EXPLORATION & PRODUCTION	FSO		Malaysia	56 m	<ol style="list-style-type: none"> <li>1. On going Technical and Marine Consultancy</li> </ol>		2019
LNG-EASY	FSRU-Barge		Singapore / Indonesia	25 m	<ol style="list-style-type: none"> <li>1. FEED for the development of a Regassification LNG Barge to be moored and to receive offloading LNG vessels, and transfer gas to power plants on-shore.</li> <li>2. Naval Architecture, Motion analysis, stability checks.</li> <li>3. Structural design of the barge.</li> </ol>		2018-2019
HESS EXPLORATION & PRODUCTION	FSO		Malaysia	56 m	<ol style="list-style-type: none"> <li>1. DEEPBLUE was appointed as the overall Technical and Managerial consultant for the engineering of the offshore installation.</li> <li>2. Multiple DB personnel were appointed as the overall HESS Transport &amp; Installation Management, in order to manage the different subcontractors from a technical and managerial point of view onshore and during the offshore campaign for the FSO, mooring and SURF Installation.</li> <li>3. Including flowline lay, mooring installation and hook-up, SAT diving etc.</li> </ol>		2018
CAFHI	Jet-fuel offloading terminal	CAFHI	Singapore	15 m	<ol style="list-style-type: none"> <li>1. Design and engineering of the mooring system for several size tankers for the offloading of cargo.</li> <li>2. Design and engineering of the Hose and SURF system for the offloading of the cargo at the terminal.</li> </ol>		2018

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HESS EXPLORATION & PRODUCTION	Temporary Storage Tanker		Malaysia	56 m	<ol style="list-style-type: none"> <li>Complete EPIC contract of the Temporary Storage Tanker.</li> <li>Design of the mooring system for a Temporary Storage Tanker (TST) for condensate storage.</li> <li>Design of the subsea flowline, riser and hose system for condensate transfer from Central Processing Platform (CPP) to the TST.</li> <li>Design of subsea support bases and gravity systems.</li> </ol>		
HESS EXPLORATION & PRODUCTION	Temporary Storage Tanker		Malaysia	56 m	<ol style="list-style-type: none"> <li>Upgrading of 6-point mooring system to 8-point mooring system to increase the operability.</li> <li>Structural modifications to install 2 chain stoppers and 1 QRH at the stern of the TST.</li> <li>Installation engineering for the tanker, mooring and SURF.</li> <li>Provision of all personnel for installation, management, Flowline installation management</li> <li>EPIC of the Offshore installation of the tanker, mooring system and SURF.</li> <li>Offshore TST changeout of 6-point moored tanker with a new 8-point moored tanker.</li> <li>Design engineering and offshore procedures for offloading of condensate.</li> </ol>		2017-2018
JMUS	Floating Dock Installation		India	25 m	<ol style="list-style-type: none"> <li>Installation engineering and procedures for mooring installation and hook up.</li> <li>Offshore installation of the mooring system.</li> <li>Offshore Personnel support during the installation.</li> </ol>		2017
ARDENT GLOBAL	Containership Salvage		New Caledonia	5 m	<ol style="list-style-type: none"> <li>Hydrodynamic analysis for the crane barge for the salvage of the grounded container ship.</li> <li>Motion and acceleration analysis for the crane barge</li> </ol>		2017
COMPASS ENERGY	Stability analysis – LNG vessel		Singapore	-	<ol style="list-style-type: none"> <li>Stability analysis for the LNG Fortune</li> <li>Stability analysis for the LNG Lucky</li> </ol>		2017
AMANIAGA	Offshore Installation		Malaysia	70 m	<ol style="list-style-type: none"> <li>Design of installation aids</li> <li>Structural FEA analysis and incorporation into vessel</li> <li>Full design drawings</li> </ol>		2017

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SPT OFFSHORE	Accommodation barge		Netherlands / Malaysia	73 m	<ol style="list-style-type: none"> <li>1. Field lay-out and mooring system design</li> <li>2. Mooring analysis and design for a construction support barge</li> <li>3. All engineering drawings for the design and installation</li> </ol>		2017
LNG LINK	FSRU		Indonesia	4 to 10 m	<ol style="list-style-type: none"> <li>1. FEED for Mooring system</li> <li>2. FEED for SURF and Hose system</li> <li>3. Budgets and project execution</li> </ol>		2017
OPTIMA ENERGY	Multi Buoy Mooring for LPG Offloading		Cameroon	20 m	<ol style="list-style-type: none"> <li>1. Feasibility and FEED study for the mooring of LPG Offloading System</li> <li>2. Preliminary costing for equipment and installation</li> </ol>		2017
OPTIMA ENERGY	Multi Buoy Mooring for LPG Offloading		Nigeria	8 m	<ol style="list-style-type: none"> <li>1. Feasibility and FEED study for the mooring of LPG Offloading System</li> <li>2. Preliminary costing for equipment and installation</li> </ol>		
ECA (FRANCE)	Subsea Design		Malaysia	20 m	<ol style="list-style-type: none"> <li>1. Design and engineering of subsea support system, templates, frames etc.</li> <li>2. Installation engineering and design of subsea templates.</li> <li>3. Procedures for Offshore installation of subsea templates.</li> <li>4. Offshore management and engineering support by DEEPBLUE personnel.</li> </ol>		2017
ANGLO EASTERN SHIPMANAGEMENT	Gas Concord		Singapore	120 m	<ol style="list-style-type: none"> <li>1. Decommissioning Support to Client at shipyard of an LPG Carrier.</li> <li>2. Perform stability review of the vessel.</li> <li>3. Perform lightship measurement and calculations.</li> <li>4. Obtain stability sail away approval from BV.</li> </ol>		2017
YINSON	FPSO		Singapore	300 m	<ol style="list-style-type: none"> <li>1. Review of mooring proposals performed by others</li> <li>2. Review of hydrodynamics performed by others</li> </ol>		2017
TUFF	FPSO		UAE	80 m	<ol style="list-style-type: none"> <li>1. OCM for the offshore mooring &amp; SURF Installation, FPSO Hook-up.</li> <li>2. Engineering and design of Offshore mooring, SURF installation &amp; Hook-up.</li> <li>3. Additional DEEPBLUE engineering personnel during Offshore installation.</li> </ol>		2016-2017







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WOODSIDE / SAPURA KENCANA	Balnaves RTM		Australia	140 m	<ol style="list-style-type: none"> <li>Detailed analysis and engineering of mooring system removal</li> <li>Detailed analysis and engineering of riser system removal</li> <li>Detailed analysis and engineering of Tower lowering from vertical to horizontal position</li> <li>Tow analysis and procedures of the RTM</li> <li>Structural review of the system during offshore de-commissioning.</li> <li>Analysis and simulation of ballasting and de-ballasting sequence offshore</li> <li>Offshore support engineering personnel</li> </ol>		2016
COASTAL ENERGY	Banang Field		Malaysia	70 m	<ol style="list-style-type: none"> <li>Engineering &amp; Detailed design of a temporary mooring system for the tanker</li> <li>Detailed installation procedures, analysis and drawings</li> <li>MWS approval</li> <li>Offshore Installation management and engineering execution by DEEPBLUE personnel</li> </ol>		2016
COASTAL ENERGY	Kappal Field		Malaysia	70 m	<ol style="list-style-type: none"> <li>Detailed design and engineering of removal of the mooring system</li> <li>Detailed de-installation procedures, analysis and drawings</li> <li>Offshore removal of Tanker</li> <li>MWS approval</li> <li>Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2016
CAFHI	Vessel Terminal	CAFHI	Singapore	15 m	<ol style="list-style-type: none"> <li>Mooring system design and analysis for loading vessel</li> <li>Mooring design and analysis for vessel along the quay side</li> <li>Naval Architectural review of the vessel with respect to the components and systems required for Mooring</li> <li>Drawings, analysis, procedures</li> <li>Installation procedures</li> </ol>		2016
EXON MOBILE / AMANIAGA	Mooring system Installation	 	PNG	15 m	<ol style="list-style-type: none"> <li>Detailed design and engineering of mooring system installation.</li> <li>Sea-fastening of all equipment.</li> <li>Detailed installation procedures, analysis and drawings.</li> <li>HAZID – SIMOPS.</li> <li>Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2016

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EXON MOBILE / AMANIAGA	Mooring system decommissioning		PNG	15 m	<ol style="list-style-type: none"> <li>Detailed design and engineering of mooring system decommissioning</li> <li>Sea-fastening of all equipment</li> <li>Detailed decommissioning procedures, analysis and drawings</li> <li>HAZID – SIMOPS</li> <li>Offshore Support personnel</li> </ol>		2016
							
MITSUI	Floating Windmill		Japan	70 m	<ol style="list-style-type: none"> <li>Detailed design Naval Architectural requirements</li> <li>Mooring and anchoring system</li> <li>Suction piles and drag anchors design</li> <li>Installation procedures and engineering review</li> <li>Cost estimation for mooring system and installation</li> </ol>		2016
ECA (FRANCE)	Jacket		Malaysia	20 m	<ol style="list-style-type: none"> <li>FEED Design and Engineering of Jacket</li> <li>Structural design and Jacket in place stress analysis</li> <li>Geotechnical design for jacket stability and strength</li> </ol>		2016
TUFF	FPSO		UAE	80 m	<p>EPIC for the following:</p> <ol style="list-style-type: none"> <li>Mooring system, anchors, winches</li> <li>Subsea, Risers and umbilical</li> <li>Detailed design of under deck strengthening for all non-process related topsides and marine equipment</li> <li>Design of riser &amp; Umbilical porches, floating hose porches</li> <li>General Naval Architecture</li> <li>Marine systems engineering and design</li> <li>Offshore Installation support, engineering and procedures</li> </ol>		2015-2016
DOLPHIN DRILLING/VIKING	Mooring Analysis		Indonesia	30 m	<p>Detailed design and Engineering:</p> <ol style="list-style-type: none"> <li>Mooring analysis of drill ship with Class / MWS approval</li> <li>Drawings of mooring system and field layout</li> <li>Installation specification for the mooring systems</li> </ol>		2015





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CONFIDENTIAL	FSO, subsea system and semi-submersible		India	60 m	Expert witness to the Arbitral Tribunal in Delhi, India for all technical matters comprising: <ol style="list-style-type: none"> <li>1. Mooring System</li> <li>2. Subsea System</li> <li>3. Offshore Installation</li> <li>4. Offshore Operations</li> <li>5. Emergency operations</li> <li>6. Analysis and simulations of System failure and vessel behaviour</li> <li>7. Preparation of Affidavits for the Arbitral Tribunal and representation in court</li> </ol>		2015
GLOCAL	Floating Windmill	 GLOCAL JAPAN INC.	Japan	70 m	<ol style="list-style-type: none"> <li>1. Detailed design Naval Architecture</li> <li>2. Hydrodynamics</li> <li>3. Mooring design and anchoring system</li> <li>4. Suction piles and drag anchors design</li> <li>5. Installation procedures and engineering review</li> <li>6. Cost estimation for mooring system and installation</li> </ol>		2015
ING – BANK	FPSO OSX-2 Decommissioning and lay-up	 ING BANK	Indonesia	15 m	<ol style="list-style-type: none"> <li>1. Decommissioning of the mooring system.</li> <li>2. Detailed mooring analysis for vessel lay-up</li> <li>3. Structural strength analysis of the FPSO and jetty bollards</li> <li>4. Offshore installation drawings</li> <li>5. Acted as owner representative</li> </ol>		2015
BUMI ARMADA	FSO Feasibility Studies	 BUMIARMADA	Myanmar	20 m	<ol style="list-style-type: none"> <li>1. Mooring analysis for spread moored system</li> <li>2. Offloading analysis of FSO and shuttle tanker</li> <li>3. Field layout and mooring drawings</li> <li>4. Comparative study of various mooring and offloading options</li> </ol>		2015







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BC PETROLEUM	EPV Balai Mutiara		Malaysia	70 m	<p>Engineering design and Consultant for the EPV Upgrade for SURF, mooring and installation:</p> <ol style="list-style-type: none"> <li>1. Field lay-out review and developmen</li> <li>2. Mooring analysis, mooring fatigue, tandem analysis</li> <li>3. Riser analysis</li> <li>4. Design and engineering of vessel structural modifications requirements for mooring, risers, and the offshore installation</li> <li>5. Specifications for mooring systems, components, vessel equipment, offloading hoses, winches and dependant structures and equipment</li> <li>6. Offshore installation analysis, procedures, methodology, requirements and specifications</li> <li>7. Review of Company produced engineering packages and detailed design</li> <li>8. Review of Company subcontractors work and proposals</li> <li>9. Marine warranty surveyor, review of 3rd party engineering</li> </ol>		2014 - 2015
COBALT /	Cameia		West Africa	2800 m	<p>SURF, Subsea mooring and installation detailed engineering for an FPSO comprising of:</p> <ol style="list-style-type: none"> <li>1. Field lay-out review and development</li> <li>2. Mooring analysis, mooring fatigue, tandem analysis, use of synthetic moorings for deep water</li> <li>3. Mooring analysis for turret and spread-moored</li> <li>4. Riser and umbilical analysis coupled analysis with mooring system, for the different options</li> <li>5. Design and engineering of vessel structural modifications requirements for mooring, risers, and the offshore installation</li> <li>6. Specifications for mooring systems, components, vessel equipment and dependant structures and equipment.</li> <li>7. Offshore Installation analysis, procedures, methodology, requirements and specifications</li> </ol>		2014
							

Offshore Installation	Supply of Chain, Connectors etc. / Equipment	Detailed Design & Engineering / FEED	Offshore renewables	Expert Witness - 3 <sup>rd</sup> Party Independent Review	Decommissioning
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FOS	KK-Field Accommodation		Malaysia	60 m	<p>Study for an accommodation barge:</p> <ol style="list-style-type: none"> <li>1. Field lay-out review and development of vessel positioning in proximity of platforms</li> <li>2. Mooring analysis, mooring fatigue, Specifications for mooring systems, components, vessel equipment and dependant structures and equipment</li> </ol>		2014
M3ENERGY	Perintis FPSO		Indonesia	30 m	<p>Mooring and installation detailed design &amp; engineering:</p> <ol style="list-style-type: none"> <li>1. Detailed Mooring analysis for vessel lay-up</li> <li>2. Specifications of mooring system</li> <li>3. Offshore Installation requirements</li> </ol>		2014
COASTAL ENERGY	Batang Field		Malaysia	70 m	<p>Mooring and Offshore installation detailed engineering and design and execution:</p> <ol style="list-style-type: none"> <li>1. Detailed design and engineering of mooring system</li> <li>2. Detailed design and engineering of Side-by-Side offloading, simulation of SBS</li> <li>3. Detailed installation procedures, analysis and drawings</li> <li>4. Offshore Installation</li> <li>5. Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2014
NAE – BUMI ARMADA	ETAN FPSO		Nigeria	1800 m	<p>FEED study for an FPSO comprising of:</p> <ol style="list-style-type: none"> <li>1. Field lay-out review and development</li> <li>2. Mooring analysis, mooring fatigue, tandem analysis, use of synthetic moorings for deep water</li> <li>3. Preliminary riser and umbilical analysis, coupled analysis with mooring system</li> <li>4. Design and engineering of vessel structural modifications requirements for mooring, risers, and the offshore installation</li> <li>5. Specifications for mooring systems, components, vessel equipment and dependant structures and equipment</li> </ol>		2014

Offshore Installation	Supply of Chain, Connectors etc. / Equipment	Detailed Design & Engineering / FEED	Offshore renewables	Expert Witness - 3 <sup>rd</sup> Party Independent Review	Decommissioning
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PETROBRAS – BUMI ARMADA	LIBRA FPSO		Brazil	2400 m	<p>FEED study for an FPSO comprising of:</p> <ol style="list-style-type: none"> <li>1. Field lay-out review and development</li> <li>2. Mooring analysis, mooring fatigue, tandem analysis, use of synthetic moorings for deep water</li> <li>3. Riser and umbilical analysis, coupled analysis with mooring system</li> <li>4. Design and engineering of vessel structural modifications requirements for mooring, risers, and the offshore installation.</li> <li>5. Specifications for mooring systems, components, vessel equipment and dependant structures and equipment</li> </ol>		2014
							
M3ENERGY	Perintis FPSO		Malaysia	20 m	<ol style="list-style-type: none"> <li>1. Detailed Mooring analysis for vessel lay-up</li> <li>2. Specifications of mooring system</li> <li>3. Offshore Installation requirements</li> </ol>		2014
BUMI ARMADA	Cluster 7 FPSO		India	150 m	<ol style="list-style-type: none"> <li>1. Technical consultant for the Offshore Installation of the C7-FPSO</li> <li>2. Providing management resources, Offshore Construction Manager, Technical support, Client representative, Marine Warranty Surveyor</li> <li>3. Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2014
PTTEP	Bongkot		Thailand	70 m	<ol style="list-style-type: none"> <li>1. Review of chain thickness report</li> <li>2. Calculating and establishing the chain remain Life from a strength point of view</li> <li>3. Calculating and establishing the chain remain Life from a fatigue point of view</li> <li>4. Procedures for changing out chain segments</li> <li>5. Approval from Class Society for the change out proposed</li> </ol>		2014
PTTEP	FSO-2		Thailand	80 m	<ol style="list-style-type: none"> <li>1. Review of the different alternatives for the condensate production without an FSO</li> <li>2. Review of production platform requirements</li> <li>3. Design and engineering of SPM CALM Buoy system</li> <li>4. Subsea flow assurance of the production from the different fields</li> </ol>		2014

Offshore Installation	Supply of Chain, Connectors etc. / Equipment	Detailed Design & Engineering / FEED	Offshore renewables	Expert Witness - 3 <sup>rd</sup> Party Independent Review	Decommissioning
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PTTEP	FSO-2		Thailand	80 m	<ol style="list-style-type: none"> <li>Offshore measurement and review of vessel status</li> <li>OPEX and CAPEX estimation of the life extension</li> <li>Developing different alternatives with respect to the possible scenarios for life extension</li> </ol>		2013 - 2014
ENI – BUMI ARMADA	OCTP FPSO		Ghana	900 m	<ol style="list-style-type: none"> <li>Field lay-out review and development.</li> <li>Mooring analysis, mooring fatigue, tandem analysis, use of synthetic moorings for deep water</li> <li>Preliminary riser and umbilical analysis, coupled analysis with mooring system</li> <li>Design and engineering of vessel structural modifications requirements for mooring, risers, and the offshore installation</li> <li>Specifications for mooring systems, components, vessel equipment and dependant structures and equipment</li> </ol>		2013 - 2014
TULLOW	KUDU FPU		Namibia	160 m	<ol style="list-style-type: none"> <li>Field lay-out review and development</li> <li>Mooring analysis, mooring fatigue, tandem analysis, use of synthetic moorings for deep water</li> <li>Preliminary riser and umbilical analysis, coupled analysis with mooring system</li> <li>Design and engineering of vessel structural modifications requirements for mooring, risers, and the offshore installation.</li> <li>Specifications for mooring systems, components, vessel equipment and dependant structures and equipment</li> </ol>		2013
PTTEP	FSO-2		Thailand	80 m	<ol style="list-style-type: none"> <li>Technical support to PTTEP with the change out of existing risers.</li> <li>Offshore Installation support personnel.</li> <li>Review of Installation Company procedures and engineering.</li> <li>Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2013
COASTAL ENERGY	Storage Tanker for Kapal Field		Malaysia	70 m	<ol style="list-style-type: none"> <li>Detailed design and engineering of mooring system</li> <li>Detailed design and engineering of Side-by-Side offloading, simulation of SBS</li> </ol>		2013

Offshore Installation	Supply of Chain, Connectors etc. / Equipment	Detailed Design & Engineering / FEED	Offshore renewables	Expert Witness - 3 <sup>rd</sup> Party Independent Review	Decommissioning
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PETRONAS – TECHNIP	Bukit Tua FPSO	 PETRONAS	Indonesia	70 m	<ol style="list-style-type: none"> <li>Supply of mooring and riser engineering personnel</li> <li>Mooring analysis, mooring fatigue analysis</li> <li>Riser analysis, riser design</li> <li>Design and engineering of mooring and riser systems on board the FPSO</li> <li>Design and engineering of Marine systems</li> <li>Design and engineering of the offshore installation for mooring and risers</li> <li>Preparation of Detailed Specifications for all mooring, risers, subsea and marine systems</li> </ol>		2012 - 2013		
		 TMH Technip MHB Hull Engineering							
WOODSIDE / APACHE	Balnaves	 woodside	Australia	135 m		<ol style="list-style-type: none"> <li>Design and engineering and simulation of Hydrodynamic behaviour of the RTM tower</li> <li>Simulation and analysis of RTM tower during tow, and installation.</li> <li>Design and simulation of the different mooring lines during installation, connection and operations</li> <li>Design and simulation of the different flexible risers during installation, connection and operations</li> </ol>		2012 - 2013	
		 Apache							
LUNDIN – BUREAU VERITAS	IKDAM FPSO	 BUREAU VERITAS	Malaysia	70 m			<ol style="list-style-type: none"> <li>Mooring analysis</li> <li>Field lay-out options review</li> <li>HSE and operational analysis of the concepts</li> <li>Commercial and Technical review of the concepts</li> </ol>		2012
PTTEP	FSO-3	 PTTEP	Thailand	70 m			<ol style="list-style-type: none"> <li>Feasibility study and pre-FEED for the development of a new FSO and integration with the existing field architecture.</li> <li>Mooring analysis and requirements for FSO, CALM buoy</li> <li>Flexible riser analysis</li> </ol>		2012
BUMI ARMADA NAVIGATION	UDANG Installation	 BUMIARMADA	Indonesia	150		<ol style="list-style-type: none"> <li>Mooring system installation</li> <li>FPSO hook-up</li> <li>Riser installation</li> <li>Installation commissioning</li> <li>Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2012	






Offshore Installation	Supply of Chain, Connectors etc. / Equipment	Detailed Design & Engineering / FEED	Offshore renewables	Expert Witness - 3 <sup>rd</sup> Party Independent Review	Decommissioning
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SSP OFFSHORE	SSP Floater & SCR's		USA	500 m	<ol style="list-style-type: none"> <li>Hydrodynamic analysis of SPAR &amp; Floater</li> <li>SCR analysis for SPAR &amp; Floater</li> </ol>		2012
BMT ASIA PACIFIC	LNG Terminal		PNG	50 m	<ol style="list-style-type: none"> <li>Hydrodynamic analysis of CALM buoy &amp; riser.</li> <li>Preliminary analysis of CALM system with risers and moorings and vessel</li> </ol>		2012
BWO	Brazilian FSO		Brazil	800 m	<ol style="list-style-type: none"> <li>Riser engineering &amp; analysis</li> <li>Subsea pipeline engineering and analysis</li> <li>PLEM design &amp; geo-tech analysis</li> <li>Offshore installation</li> </ol>		2011
ONGC	D-1 FPSO		India	150 m	<ol style="list-style-type: none"> <li>Riser systems and subsea</li> <li>Mooring system, offshore installation</li> <li>Naval architecture, hull, vessel, structural systems</li> <li>All marines systems on board the FPSO, marine engineering</li> </ol>		2011 - 2012
KCA DEUTAG	Tender Barge		Singapore	~	<ol style="list-style-type: none"> <li>Hydrodynamic analysis and stability engineering</li> <li>Crane upgrade &amp; structural engineering</li> <li>Naval architecture</li> </ol>		2011 - 2012
COASTAL ENERGY	Songkhla		Thailand	20 m	<ol style="list-style-type: none"> <li>Field lay-out, mooring design and analysis, SURF design and analysis, offshore installation.</li> <li>Hydrodynamic analysis of vessels</li> <li>Continuous EPIC support for the for the different. Songkhla FSOs</li> </ol>		2011 - 2012
BUMI ARMADA NAVIGATION	SEPAT FPSO		Malaysia	70 m	<ol style="list-style-type: none"> <li>Design and engineering, analysis and procedures for Offshore Installation of mooring and risers and FPSO.</li> <li>Provision of management personnel for the mooring installation, FSO hook-up SURF installation, and riser hook-up.</li> <li>Execution of the complete offshore Installation.</li> <li>Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2011
PTTEP	Bongkot FSO-2		Thailand	70 m	<ol style="list-style-type: none"> <li>Riser and hose analysis and engineering.</li> <li>Review and evaluation of tender documents.</li> <li>Offshore management and engineering support by DEEPBLUE personnel</li> </ol>		2011










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KEI – TJS	Sepanjang FSO		Indonesia	45 m	<ol style="list-style-type: none"> <li>Design and engineer of mooring system and riser system for the FSO</li> <li>Offshore installation engineering and provision of support personnel for the offshore phase</li> </ol>		2010 - 2011
ONGC-DPS	D-1 FPSO		India	150 m	<ol style="list-style-type: none"> <li>Mooring systems, riser systems, subsea components, offshore installation</li> <li>FSO structural, marine and naval architectural requirements.</li> <li>Preparation of technical specification and RFQs for the above in order to issue for BID to EPIC Contractor</li> </ol>		2010
CHEVRON – EDG	FSO Vietnam Block B Gas Project FEED Study		Vietnam	150 m	<ol style="list-style-type: none"> <li>Mooring systems, riser systems, subsea components, offshore installation</li> <li>FSO structural, marine and naval architectural requirements.</li> <li>All marine systems, IG, cargo, ballast, HVAC, LQ, ER, electrical, mechanical et</li> <li>Preparation of technical specification and RFQs for the above in order to issue for BID to EPIC Contractor</li> </ol>		2010
ONGC – DPS	D-1 FPSO FEED Study		India	150 m	<ol style="list-style-type: none"> <li>Mooring systems, riser systems, subsea components, field lay-out</li> <li>FSO structural, marine and naval architectural requirements</li> <li>Preliminary installation method statements</li> <li>Preparation of Technical Specification and RFQs for the above in order to issue for BID to EPIC Contractor</li> </ol>		2010
PETROFAC – DPS	FPSO FEED Study Cendor II		Malaysia	80 m	<ol style="list-style-type: none"> <li>Mooring systems, Riser Systems, Subsea components</li> <li>FSO structural, marine and Naval Architectural requirements</li> <li>All Marine systems, IG, Cargo, ballast, HVAC, LQ, ER, Electrical, mechanical etc</li> <li>Preparation of Technical Specification and RFQs for the above in order to issue for BID to EPIC Contractor</li> </ol>		2009 - 2010

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COASTAL ENERGY	Songkhla FSO		Thailand	20 m	<ol style="list-style-type: none"> <li>1. Design of new and review of existing system with respect to mooring, risers, offshore and subsea arrangement</li> <li>2. Mooring analysis and design</li> <li>3. Offloading analysis and design</li> <li>4. Riser analysis and design</li> <li>5. Hose analysis and design</li> <li>6. Vessel mooring requirements and Installation requirements</li> </ol>		2009 – 2010
GALOC PETROLEUM COMPANY	FPSO		Philippines	600 m	<ol style="list-style-type: none"> <li>1. Mooring system,</li> <li>2. Riser and SURF</li> <li>3. Offshore Installation</li> </ol>		2009 – 2010
MISTUBISHI OIL	Sepanjang FSO		Indonesia	45 m	Review on behalf of Client the detailed design of mooring and risers, review of subcontractors		2009
KANGEAN ENERGY INDONESIA	Temporary Sepanjang FSO		Indonesia	45 m	Design, delivery and installation of mooring system and support during operational phase		2009
QATAR PETROLEUM	BH & MM Field		Qatar	0 – 50 m	Feasibility study for the change out of umbilicals for 60+ platforms		2009
QATAR PETROLEUM	Halul Field		Qatar	0 – 50 m	Hydrodynamic engineering for electric cable		2009
HALLIN MARINE	SPEX – Malaysia		Philippines	500 m	Naval architectural support to the implementation of a hydraulic gangway on DP-2 vessel for offshore operations		2009
PROSAFE PRODUCTIONS	POLVO FPSO		Brazil	800 m	Offloading mooring analysis for moored FPSO POLVO		2008
PROSAFE PRODUCTIONS	ABO FPSO		Nigeria	600 m	Mooring analysis for the extension of the riser system and its installation		2008

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PVEP DAI HUNG	Dai Hung Phase 2		Vietnam	120 m	Estimation analysis and review of offshore installation EPIC contract		2008
LARSEN OIL & GAS	FPSO X		Singapore	200 m	Design responsibility for field lay-out riser configuration, subsea systems, mooring systems, and offshore works		2008
MODEC - JVPC	Turret FSO, Subsea Equipment		Vietnam	60 m	Offshore installation for detailed engineering & design FSO hook-up, PLEM, riser installation. Preparation of all procedures of the offshore installation		2007 – 2008

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