

**SKILLS FRAMEWORK FOR MARINE AND OFFSHORE  
TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT**

<b>TSC Category</b>	Research and Development					
<b>TSC</b>	Green Ship Design					
<b>TSC Description</b>	Formulate quantitative environmental models, product designs and waste reduction plans in order to drive clean energy and/or green shipping initiatives					
<b>TSC Proficiency Description</b>	<b>Level 1</b>	<b>Level 2</b>	<b>Level 3</b>	<b>Level 4</b>	<b>Level 5</b>	<b>Level 6</b>
		<b>MAR-RND-2002-1.1</b>	<b>MAR-RND-3002-1.1</b>	<b>MAR-RND-4002-1.1</b>	<b>MAR-RND-5002-1.1</b>	<b>MAR-RND-6002-1.1</b>
		Collate energy consumption, waste generation, emissions and other relevant data impacting clean energy and/or green shipping initiatives	Construct environmental models from data analyses	Develop organisation's clean energy and/or green shipping initiatives in design processes	Formulate organisation's clean energy and/or green shipping initiatives	Establish the organisation's clean energy and/or green shipping strategies and values
<b>Knowledge</b>		<ul style="list-style-type: none"> <li>• Concepts related to green shipping</li> <li>• Types of marine waste</li> <li>• Types of emissions generated through manufacturing processes</li> <li>• Types and characteristics of marine fuels</li> <li>• Emissions, waste generation, and other elements impacting the environment</li> <li>• Methods and tools for environmental data collection</li> </ul>	<ul style="list-style-type: none"> <li>• Legislative clean energy codes, regulations and guidelines</li> <li>• Principles of equipment drawings</li> <li>• Principles of naval architecture calculations</li> <li>• Principles of structural and arrangement drawings</li> <li>• Methods to minimise marine waste and emissions</li> <li>• Methods of conducting environmental modelling</li> <li>• Organisation's products and processes</li> <li>• Basic features of machinery used for propulsion, power generation and manufacturing</li> <li>• Manufacturing workflow processes</li> <li>• Environmental modelling</li> </ul>	<ul style="list-style-type: none"> <li>• Site management operating procedures</li> <li>• Techniques to control emissions, maximise efficiency and minimising waste</li> </ul>	<ul style="list-style-type: none"> <li>• Methods of minimising marine waste and emissions impacting the environment</li> <li>• Best practices and trends in clean energy and/or green shipping</li> <li>• Methods of monitoring new and innovative clean energy technologies related to ships, rigs and conversions</li> </ul>	<ul style="list-style-type: none"> <li>• Organisation's vision, mission and values</li> <li>• Methods of establishing clean energy initiatives</li> <li>• Principles of change management</li> <li>• Methods of ensuring long-term sustainability of new processes</li> </ul>

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<p><b>Abilities</b></p>		<ul style="list-style-type: none"> <li>• Measure waste, emissions and other elements impacting the environment</li> <li>• Collate research information relevant to green shipping</li> </ul>	<ul style="list-style-type: none"> <li>• Analyse energy consumption, waste generation, emissions and other relevant data impacting clean energy and/or green shipping initiatives</li> <li>• Evaluate environmental models for green initiative opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Measure impact of green initiatives on the environment</li> <li>• Incorporate 'green shipping' considerations in design plans</li> <li>• Coordinate implementation of green initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Analyse changes in methodologies and design features for green initiatives</li> <li>• Establish cross-department collaborations on green initiatives</li> <li>• Evaluate effectiveness of green initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Formulate clean energy initiatives aligned to the vision, mission and values of the organisation</li> <li>• Drive innovation in areas aligned to reducing the negative environmental impact of products and processes</li> <li>• Oversee environmental modelling procedures</li> </ul>
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