Ship Energy Efficiency and Maritime Decarbonisation: SEEMP, CII Rating and Fleet Carbon Plans

15 – 19 November 2027
Barcelona - Eixample district four-star



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Introduction:

Ship energy efficiency now decides whether a vessel keeps its trading options: a falling CII rating, an attained EEXI above the required value or weak fuel consumption records can trigger corrective action plans, charterer pushback and carbon costs that land on the wrong party. This Core Concept course trains technical, fleet energy, chartering and sustainability staff to apply the IMO energy efficiency framework, verify consumption data, rank technical and operational measures, judge alternative fuel readiness and allocate carbon costs in charter parties. Each participant builds a SEEMP and CII Improvement Plan for a case vessel.

Course Objectives:

- Calculate attained EEXI and annual CII for a vessel and interpret the A to E rating against the required value and reduction factor
- Maintain a SEEMP with its energy efficiency management plan, fuel oil consumption data collection plan and operational carbon intensity plan
- Verify noon reports, bunker delivery notes and tank soundings as evidence for Data Collection System reporting
- Rank hull, propeller, energy saving device and engine power limitation retrofits by fuel saving, cost and off-hire time
- Apply speed, routing, trim and just-in-time arrival measures and agree carbon cost allocation clauses with charterers
- Build a fleet decarbonisation plan that sequences efficiency measures and alternative fuel readiness vessel by vessel

Target Audience:

- Technical managers and superintendents responsible for hull, machinery and retrofit decisions on owned or managed vessels
- Fleet energy and vessel performance staff who monitor fuel consumption, speed-power curves and carbon intensity
- Ship management staff who hold SEEMP, Statement of Compliance and survey records for a fleet
- Chartering and commercial staff who negotiate speed, consumption and carbon cost terms with owners or charterers
- Sustainability and ESG staff who report fleet emissions and set decarbonisation targets for shipping companies

Course Outline:

Day 1: Maritime Decarbonisation Drivers and Vessel Carbon Baseline

- IMO Greenhouse Gas Strategy Levels of Ambition and What They Mean for Fleet Planning
- Tank-to-Wake Versus Well-to-Wake Emissions Accounting for Ship Fuels
- Fuel Consumption Breakdown: Main Engine, Auxiliary Engines and Boilers by Operating Mode
- Carbon Price Exposure Mapping Across Owner, Manager and Charterer
- Vessel Carbon Baseline Worksheet Using a Year of Voyage Data

Day 2: EEDI, EEXI, CII Rating and SEEMP Requirements

- EEDI Reference Lines and Design Efficiency for Newbuild Specifications
- Attained Versus Required EEXI Calculation for an Existing Vessel
- CII Formula, Annual Reduction Factor and A to E Rating Boundaries
- SEEMP Part I, Part II and Part III Structure and Approval Records
- Plan of Corrective Actions for D and E Rated Ships and the Statement of Compliance

Day 3: Consumption Data Verification, Technical Retrofits and Engine Power Limitation

- IMO Data Collection System Records: Noon Reports, Bunker Delivery Notes and Tank Soundings
- Speed-Power Curve Analysis to Detect Hull and Propeller Fouling
- Hull Coating Selection and In-Water Cleaning Interval Planning
- Propeller Polishing, Retrofit Blades and Energy Saving Devices: Ducts, Fins and Air Lubrication
- Engine Power Limitation and Shaft Power Limitation Set-Up, Override Logging and Power Reserve

Day 4: Operational Measures, Alternative Fuels and Charter Party Carbon Clauses

- Slow Steaming and Speed Optimisation Against Schedule and Freight Earnings
- Weather Routing, Dynamic Trim Optimisation and Just-in-Time Port Arrival
- Alternative Fuel Comparison: LNG, Methanol, Ammonia and Biofuel Blends by Readiness and Risk
- Regional Emissions Trading and Fuel Intensity Schemes at Overview: Voyage Scope and Surrender Duties
- Charter Party Clauses for CII Cooperation, Speed Instructions and Emissions Allowance Cost Recovery

Day 5: Modelling Build: SEEMP and CII Improvement Plan for a Case Vessel

- Case Vessel Data Pack: Voyage Log, Consumption Records and Current CII Rating
- CII Projection Model Over the Next Rating Periods With and Without Measures
- Marginal Abatement Cost Ranking of Retrofit and Operational Options
- Fleet Decarbonisation Roadmap Linking Dry-Dock Windows, Fuel Choices and Charter Terms
- SEEMP and CII Improvement Plan Presentation to a Technical and Commercial Review Panel

Skills You Will Gain:

- Carbon Intensity Rating Analysis
- EEXI Compliance Assessment
- Fuel Consumption Data Verification
- Hull and Propeller Performance Monitoring
- Retrofit Business Case Appraisal
- Voyage Speed and Routing Optimisation
- Alternative Fuel Readiness Screening
- Charter Party Carbon Cost Allocation

Why Attend This Course:

- Return with a SEEMP and CII Improvement Plan built on real voyage and consumption data for a case vessel
- Challenge a retrofit proposal or a speed instruction with numbers on fuel saved, rating effect and cost per tonne of carbon
- Speak the same language as charterers, class surveyors and sustainability teams when carbon costs and ratings are negotiated
- Compare efficiency practice with technical and commercial staff from tanker, bulk, container, gas and offshore fleets

Conclusion:

Cutting a ship's carbon intensity depends on reliable consumption data, the right mix of technical and operational measures and charter terms that let those measures run. The course moves from decarbonisation drivers and a vessel carbon baseline, through EEDI, EEXI, CII and SEEMP requirements, to data verification, hull, propeller and power limitation retrofits, then to speed, routing, alternative fuels, regional schemes and charter party carbon clauses. The final day builds a SEEMP and CII Improvement Plan for a case vessel.