



HR Wallingford
Working with water

LNG marine terminals

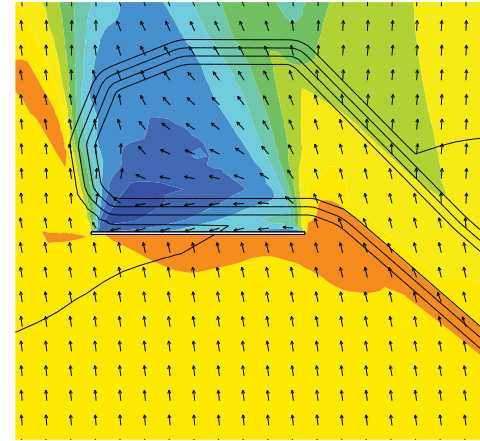
Concept development and design



LNG marine terminals

HR Wallingford has a world-wide reputation for technical excellence and expertise associated with all major aspects of the planning, design, optimisation and performance validation of LNG terminals. We provide expert services during concept development, FEED and EPC phases.

Our clients include owners, operators, contractors and consultants, as well as regulators and other national organisations.



Site selection

- > Evaluate of the siting alternatives from a marine perspective
- > Reconnaissance surveys

Marine site investigation

Measure waves, currents, winds, bathymetry, suspended material, water levels combined to assess baseline conditions.

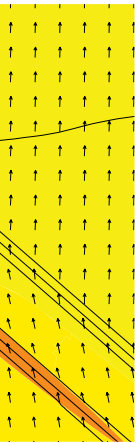
Environmental design criteria

Provide design data using 'state of the art' computer models to predict both operational and extreme conditions, such as wind speed, wave height, currents, fluvial flow and rainfall.

Marine terminal design

Assess and design marine terminals with specific focus on issues such as terminal layout, navigation, breakwater requirements, dredged channels and trestle design.

Specialist design tools unique to HR Wallingford include computer and physical hydraulic modelling, real-time navigation simulation and full hydrodynamic ship mooring models.



Seawater system hydraulic design

Assess and design seawater hydraulic systems associated with cooling water and other industrial uses with specific focus on intake and outfall design, dispersion and recirculation, closed pipe systems and pumping stations. Our design tools include computational fluid dynamic (CFD) methods and physical modelling.

Site protection

Assess and design asset protection measures to manage project risks such as coastal erosion, storm damage, sedimentation and other environmental impacts such as tsunamis.

Terminal operations

Operation and efficiency of a marine terminal can be modelled using LNGSim, a module of our bespoke port/terminal operations simulation suite, PortOps. The system can be modified to meet detailed client requirements and can examine the full supply chain to optimise issues such as storage requirements, shipping schedules, fleet and facility requirements.

Navigation

We are a world-leader in the evaluation of ship navigation and manoeuvring, especially using navigation simulation for design, feasibility and detailed design assessment, along with subsequent training/familiarisation. Coupled with our hydraulic assessment capability, we can evaluate a wide range of navigation related issues and carry out navigation related risk assessments.

Forecasting

Our systems provide a valuable decision support tool for construction and operation. The services cover a range of parameters including metocean conditions (wind, wave, current and water level) and vessel response (ship mooring and underkeel clearance).





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Cover image courtesy Egyptian LNG

HR Wallingford is an independent engineering and environmental hydraulics organisation. We deliver practical solutions to the complex water-related challenges faced by our international clients. A dynamic research programme underpins all that we do and keeps us at the leading edge. Our unique mix of know-how, assets and facilities includes state of the art physical modelling laboratories, a full range of numerical modelling tools and, above all, enthusiastic people with world-renowned skills and expertise.

