A plethora of wide ranging research and development projects currently underway should provide valuable social, economic and environmental benefits for the marine industry. David Tinsley sheds further light on the matter

Collaborative maritime research and technological development projects backed by the EU under the still extant Fifth Framework Programme and this year's emergent Sixth Framework provisions are characterised by scale and commercial relevance.

Both trends, that is to say, a growing emphasis on integrated, pan-industry endeavours, and a preoccupation with achieving tangible, practical results, have in turn stimulated greater interest in participation by industrial players and product users as well as by the universities and research organisations.

Although the grouping of projects into clusters and larger research initiatives was introduced for the first time under the Fifth Framework arrangements for research and technological development support, the follow-on programme has clearly given added dimension to collaboration.

Whereas the tendency in earlier years has been to undertake research and then stimulate industry to exploit the results, an approach based on concurrent research and innovation is anticipated with future, larger-scale integrated projects. This implies a more productive outcome, and more immediate results, from EU-sponsored R&D in the future.

While equipment makers, system suppliers, shipowners and yards can find EU or national funding for expensive research an attractive option, perceived benefits from such engagements have to be weighed against any downside to competitive efforts presented by cooperating with other partners and by the relatively long timescales that can be entailed in publicly-funded studies.

Innovative projects such as Fire-Exit utilise a combination of state-of-the-art testing facilities coupled with sophisticated computer modelling software

Ongoing ventures

The winds of change, though, are evident from the structure of the most recent enterprises, such as the Hercules integrated project, in which the EU was successful in attracting arch-rivals MAN B&W Diesel and Wärtsilä Corporation to lead the long-term programme. A huge bank of participants from throughout the industry in Europe has been enrolled into Hercules, tasked with raising the economic and environmental performance of marine diesel engines through new technological design initiatives (see feature on Emissions technology, pg 14 for further details).

Work on Hercules started in March this year, and another major undertaking due to be launched under the auspices of the Sixth Framework Programme is the Safedor project, aimed at enhancing ship safety through innovation and a risk-based approach. Besides its very large scale, ascription by all major sectors of the industry, four-year duration, and multiplicity of modules or 'work packages', Safedor's structural similarities with Hercules include pragmatic considerations relating to life-cycle operational issues.

Risk-based design, in which prevention and reduction of risk is embedded as a design objective alongside all other standard technical and performance parameters, offers freedom to the designer in identifying and choosing optimal solutions to meet safety targets.

However, it demands that safety be treated as a life-cycle issue, which in turn implies a focus on risk-based operation and the need for a risk-based regulatory framework. Safedor would address all three elements.

Crucial to risk-based design is the development of advanced tools to determine the risks involved, and to quanti-