

More information: A factsheet and reports from the 1st International Symposium on Fishing Vessel Energy Efficiency (E-Fishing 2010) will be available at www.frdc.com.au

THROTTLE CONTROL FOR FUEL SAVINGS

International researchers who are working to improve the fishing industry's fuel-efficiency are recommending a more prudent use of the throttle. More than 100 researchers involved in research on ways to save energy in fishing operations gathered in Vigo, Spain, earlier this year to hear the latest developments on vessel energy efficiency.

Thirty speakers from a dozen countries addressed topics ranging from energy audits and water flows around trawler hulls, to magnet motors and sky sails, at the 1st International Symposium on Fishing Vessel Energy Efficiency (E-Fishing).

The overarching message conveyed to delegates was that while there may be promising innovations on the horizon, for now the best fuel-saving device is also the oldest: a skipper's control of the throttle.

This advice took into account that many of the world's fishing fleets face higher costs and lower prices for their catch, along with more restrictions on where they can fish and how much they catch, and that consequently fewer new vessels are being built.

Conference speakers encouraged industry members to focus on how existing vessels can be made

more fuel-efficient, as well as looking to suitable designs for the next generation of boats.

Some presentations highlighted how restrictions on vessel length forced inefficiency on fishers. Length restrictions, familiar to Australian fishers, are used by management agencies in several countries to curb fishing effort.

In response to these regulatory developments, a marine surveyor from Promara Ltd in Ireland, Noel O'Regan, says parts of the UK use relatively short, fat, deep boats that "push half the ocean in front of them and drag the other half along behind".

He said freeing up length options, but retaining limits on carrying capacity to produce a longer, sleeker hull could reduce drag and deliver fuel savings.

Also attending the biannual event, Australian fisher and FRDC director Stuart Richey lamented the absence of fisheries managers at the conference.

"While fisheries managers may have felt they could not have contributed much input into a conference focused on engineering and gear technology," Stuart Richey said, "they certainly would have picked up a lot of information about how

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FRDC director Stuart Richey lamented the absence of fisheries managers at the conference.



Large European fishing vessels, such as the Scottish vessels shown on these pages measure their fuel use not in litres but in tonnes. Fuel economy is critical to maintaining profits.



(Left) The Spanish port of Vigo hosted the recent E-Fishing conference.

poor management helps create inefficiencies in a fishing fleet.”

The theme of fuel inefficiencies generated by vessel length limits was continued by naval architect Christian Knapp, who presented a paper prepared with Bob McGrath, his partner in McGrath-Knapp Naval Architects in Newfoundland.

Their team has begun a new project focused on improving the energy efficiency of the existing fishing fleet. Initially, they are mapping energy consumption

patterns of the fleet by collecting data from seven representative vessels, which have been fitted with fuel meters, weather stations and motion sensors.

Christian Knapp said the larger, longer-term challenge is to find ways to make machinery systems that are more energy efficient and not so dependent on fossil fuels. He said hybrid systems, fuel cells, wind power and solar energy are all technologies that need exploration and further development before any significant practical applications are likely. **F**

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Fuel-efficiency directions

- Regulations, both fishing and International Maritime Organisation (IMO), have led to a proliferation of short, fat boats that are highly inefficient. For example, one fishing vessel in Newfoundland is 60 feet (18.28 metres) long, 30 feet (9.14 metres) wide and 54 feet (16.46 metres) in height from the keel to wheelhouse roof.
- Major fuel savings of 15 per cent or more can be achieved by reducing speed by half a knot when free-running to fishing grounds.
- Fuel-monitoring gauges can be effective in demonstrating these savings to skippers and crew.
- Increasing hull length without substantially increasing tonnage lifts fuel efficiency.
- Improving sea-keeping through the use of passive anti-roll tanks, hydro-dynamic bilge keels or ‘batwings’ will reduce hull resistance and fuel usage.
- An audit of energy usage can be beneficial in highlighting inefficiencies.
- Vessels should be purpose-built for the job. For example, it is not fuel-efficient to convert a trawler to a long-liner.
- Change passive fishing gears where possible.
- Take-home message: “There is a need to try to educate the regulators”.
- Biofuels may be lower in cost, but not lower in consumption, and there are moral issues and possible conflicts with food production in pursuing this form of energy.
- Further development of the Skysails system may lead to a smaller package that is suitable for medium-sized fishing vessel.
- In summary, there is no magic solution for fuel efficiency on the horizon.