

SOLAR SAILOR

Robert Dane, chief executive of Australia's Solar Sailor, might be forgiven for being bullish when we spoke in October. He had just closed orders to sell four ferry boats – powered by clean energy collected from sun and wind by his patented solar sails, masts of photovoltaic cells – to Hong Kong. He was designing another vessel for the 2010 World Expo in Shanghai. And he was in “very positive” discussions with China's COSCO, the world's second-largest integrated shipping company, for a clean-tech tanker and a bulk carrier as prototypes for other vessels.

The first two ships would be retrofits, using clean energy to

power ‘house loads’ – lights, refrigeration and so on – and as auxiliary power to diesel engines. “If the ship is doing 18 knots and we put up the solar sails [the masts can be laid down on deck], the vessel can cut the revs back to 15 knots and still steam at 18 knots. That doesn't sound like a lot, but the difference between an engine doing 18 knots and one doing 15 knots is a fuel saving between 25 and 40 per cent.” That's an economy that opens doors.

With ‘new builds’, ships that rely entirely on clean tech, the key will be batteries stowed as ballast. “We need a 1,000 per cent increase in battery power to banish

fossil fuels,” says Dane. Ultracapacitors might solve this. He argues that solar sails will be standard in a generation, as economies of scale dramatically lower the cost of photovoltaic cells. “Zhengrong Shi, the chief executive of Suntech Power [one of the world's top solar players] aims to reduce the cost of panels a third by 2012.”

One of the interesting things about Solar Sailor is that ferries usually operate inshore. Emissions from Sydney's ferry fleet [Solar Sailor operates a 100-passenger charter vessel on the city's harbour] pump up national carbon dioxide totals, which Australia must reduce as a Kyoto Protocol signatory.

Besides curbing emissions, hybrid ferries can help kick-start the adoption of clean tech by the shipping world.

As Sydney contemplates buying a new ferry fleet – about 40 vessels – Dane argues his technology would work well on the inner harbour runs, while also shaving fuel costs and reducing the system's carbon footprint. “I've just been to a ferry conference in Hong Kong,” he says. “Everyone was going, ‘Of course, we can go back to wind power. And use solar.’ With modern materials and technology, you don't need a crew to set the sails. Just push a button and let a computer do it. It's a new age.”