Energy efficiency technologies can increase a vessel’s marketability, enabling it to garner higher charter rates. Ardmore Shipping Corporation, a publicly listed company that owns and operates 28 product and chemical tankers, representing 970,507 total DWT, applied a series of efficiency technologies to its tanker vessels. It is now recouping the investment through the higher charter rate it is able to charge for more cost-effective ships.

Since 2010, Ardmore has built a strong reputation for optimizing design and operational energy efficiency. One reason for this reputation is that Ardmore has greatly improved the energy efficiency of its fleet by installing state-of-the-art technologies and energy management systems onto both new-build and existing vessels.

**OPPORTUNITY**

Ardmore found it could gain a competitive advantage from systematically optimizing the energy efficiency of its fleet. These efforts have made its vessels more marketable in the time charter market—a market with normally little financial incentive for owners to upgrade their vessels because the charterers pay for fuel. However, as Ardmore’s vessels are now more efficient, they are less expensive to operate, making them more attractive to charterers. At the time, Ardmore was also considering taking its vessels into the spot market where it would operate the vessels and pay for the fuel. It was therefore doubly in the company’s interest to optimize efficiency.

**SOLUTION**

While Ardmore applied energy efficiency solutions to both its new-build and existing vessels, Carbon War Room focuses this profile on its existing vessels. Although all ships have some type of equipment on board enabling owners to monitor a vessel’s fuel consumption, the records are often infrequent...
and unreliable. For this reason, Ardmore stressed that the first step in its retrofit process was to ensure all its vessels had continuous monitoring equipment consisting of flow meters, dynamic anemometers, and motion reference units. It selected SkySails’ V-PER Vessel Performance Manager, which monitors, documents, analyses, and optimizes energy consumption both reliably and in real time. Ardmore not only installed this technology, but also consciously ensured that the crew—not only the captain but also other officers—was well trained in how to use the system, as the technology is only as effective as the person operating it.

With the continuous monitoring systems in place, Ardmore then applied various high performance antifouling paints from International Paint and Jotun and installed MOL Techno-Trade Ltd.’s propeller boss cap fins (Figure 1). The company installed the propeller boss cap fins while the vessels were in operation, as their installation took less than 24 hours, and thus could be done in-water. The antifouling paint, however, was applied during the vessels’ regular dry-dock period, which did not need to be extended for this purpose (See top image on previous page).

Ardmore financed the retrofits through its cash flow, as the upfront investment was manageably low, especially given the swift repayment period expected from the technologies. Although oil prices will impact fuel savings and payback times, changes in oil prices tend to even out over the life of the investment. Ardmore’s banks have responded very positively to its efficiency upgrade agenda.

RESULTS

To date, Ardmore is satisfied with the performance gains seen through the application of propeller boss cap fins and high performance antifouling paints. Further, the continuous monitoring equipment will enable the crew to continually improve the operational energy efficiency.

By optimizing the energy efficiency of its vessels, Ardmore ensures that their vessels are more tradeable and therefore more profitable. This maximises its cash flow, enabling Ardmore to more effectively service the bank loan originally taken out on the vessels. As the vessels are collateral for the banks against debt, it is important to them to see Ardmore taking such steps to ensure the quality of the collateral.

Figure 1: Application of propeller boss cap fin

About Carbon War Room

Carbon War Room (CWR) was founded in 2009 as a global nonprofit by Sir Richard Branson and a group of like-minded entrepreneurs. It intervenes in markets to accelerate the adoption of business solutions that reduce carbon emissions at gigaton scale and advance the low-carbon economy. CWR merged with Rocky Mountain Institute (RMI) in 2014 and now operates as an RMI business unit. The combined organization engages businesses, communities, institutions, and entrepreneurs to transform global energy use to create a clean, prosperous, and secure future. The combined organization has offices in Basalt and Boulder, Colorado; New York City; Washington, D.C.; and Beijing.

About Ardmore Shipping Limited

Ardmore Shipping Corporation owns and operates product and chemical tankers in worldwide trade. Ardmore has developed into a first-class organization dedicated to the very best operating practices, customer service, and operational efficiency—enabled by a solid financial foundation to support well-timed growth and the agility to seize new opportunities.

GET INVOLVED

Shipping Efficiency drives the shipping industry toward a profitable, low-carbon future by addressing the market barriers to the adoption of energy efficiency solutions.

Learn more: www.shippingefficiency.org or www.rmi.org/shipping or contact us at shippingop@carbonwarroom.com