Onboard CO2 Capture

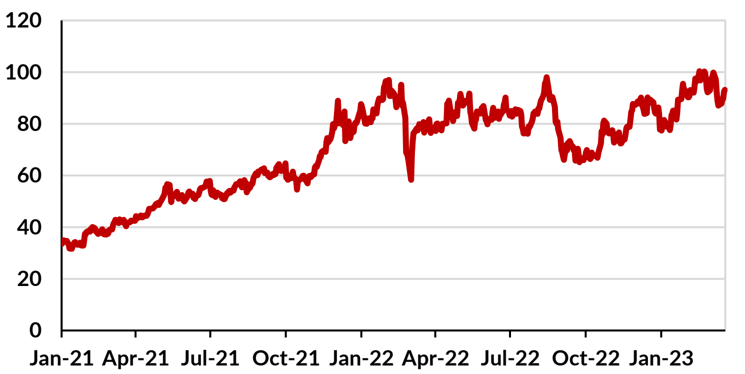
Weekly Tanker Market Report

Carbon capture and storage (CCS) is not a novel concept. Many of the early facilities were developed to be a direct source capture from power generation or gas processing plants with CO2 storage sites nearby (with first operations dating back to 1972!). There are currently over 20 commercial carbon capture and storage facilities worldwide, whilst many oil and gas companies are looking into developing new projects. Carbon capture is starting to make inroads in the shipping industry as well. Proposals related to onboard carbon capture were discussed during the IMO Marine Environment Protection Committee (MEPC) held in December 22 and will be further considered at MEPC 80 in July 23. The US government has also expressed a degree of support for the technology. In its 'US National Blueprint for Transport Decarbonization', onboard carbon capture systems are listed among 'promising fuels and technologies' for the industry.

The development of onboard carbon capture technologies is actively ongoing, with the focus on modifying existing onboard systems for carbon capture or developing and implementing new solutions. For example, Value Maritime has developed its onboard CO2 capture and storage solution and already installed its system on a dozen of vessels, including tonnage owned by well-known market players. More installations are in the pipeline. Wartsila recently announced its first order for its carbon capture and storage ready scrubber system, whilst there is an emerging list of other companies, who have developed and/or are developing their solutions.

According to the ABS classification society, the main technologies for CO2 separation include carbon capture using solvents, membranes and cryogenic separation. Ship characteristics such as size, weight, power limitations as well as operational patterns and space considerations are among key criteria which will dictate the type of carbon capture system. Not all of the CO2 can be captured, and the higher the capture rate, the higher the cost and energy involved.

European CO2 Price (€/tonnes)



As it is the case with any developing technology, there are challenges and obstacles to overcome while the economic benefits are yet to be fully understood. It could require significant additional capital and operating expenditure, but once the industry matures, the associated costs could potentially decline. There is also a lack of a unified international regulatory framework, whilst onboard carbon capture requires the development of supporting infrastructure: land-based storage, offloading and discharging facilities, transportation to end user. The ABS states that storing CO2 on board in tanks and offloading at port is a technical challenge that needs to be resolved, as current regulations and infrastructure are in the emerging stage.

Yet, the idea of onboard CO2 capture is certainly appealing. CO2 is already a commodity for sale, used in the food industry and in the oil and gas sector for enhanced oil recovery (EOR), whilst there is potential for further growth, transforming CO2 into renewable fuels, chemicals and building materials. Going forward, potentially we could see captured CO2 used as credits in the EU Emission Trading Scheme (ETS), whilst there is also potential for generating tax credits under the US 45Q Tax Credit system for sequestered carbon, although here specific criteria must be met. Finally, and most importantly for shipping, onboard carbon capture offers opportunity to reduce the industry's carbon footprint and to help to achieve the IMO's 2030 and 2050 environmental targets.

Crude Oil

Middle East

A more demanding week for VLCC Owners, where the lack of enquiry in the East and a softening feel in the West has dampened sentiment. Rates have come off, but Charterers have never really been able to push rates considerably lower. As we come to the close of the week, rates hold at around 270,000mt x ws 90 for the Far East and in the low ws 60's for Western destinations.

Suezmax enquiry in the AG has been minimal this week, which is putting some pressure on rates. There is still resistance from Owners for now but Charterers will be aiming for 140,000mt x ws 72.5. For cargoes heading East (despite a somewhat limited tonnage list looking to head in that direction), Owners may have to face the prospect of rates edging below 130,000mt x ws 152.5.

Owners will rest easy this weekend as the Aframax market took advantage of protests at French ports, tight tonnage lists and a steady flow of cargoes. AG/East started the week at ws 210, but after ships were plucked away for X-Med business, rates quickly reacted and we end the week at ws 220-225 levels. Owners will now look to maintain momentum into next week, although with little activity reported out of the AG, this may be a tall order, if France re-opens its ports.

West Africa

Minimal VLCC enquiry has not really helped its own direction here and, with the US Gulf markets looking weaker, this has ensured Charterers have pushed for sub last done. There is resistance, however, as Owners remain confident that the next run of enquiry isn't too far away, which will quickly restore confidence. Similar to where the AG market is, rates are around 260,000mt x ws 90 to the Far East.

Suezmax Owners in West Africa have had very little to get their teeth into this week, which has put downward pressure on rates. Charterers looking to fix off prompt dates are likely to face more resistance, but on natural dates they may look to achieve less than 130,000mt x ws 142.5 for UKCM. Those looking to send cargo East, aren't likely to face too much of a premium (if any), as there are ships keen to head in that direction.

Mediterranean

An explosion in rates occurred in the Med Aframax market this week. The catalyst this time has been uncertainly in French ports, as strike action has affected vessel turnarounds. The list has gradually been worn thin and has not been replenished on the back. With Charterers reaching forward, firm ships asked premiums. A replacement was booked from Ceyhan at ws 290, representing a 60 point jump. With this, other Charterers piled in, securing vessels at ws 290-300 levels. CPC loaders have not yet seen strong gains, with Suezmaxes willing to price cap at around ws 305 for now. By the close, a collection of failed fixtures dampened sentiment somewhat and a discount to ws 280 was seen; yet, with strikes ongoing, the going remains reasonably firm.

Enquiry remains rather slow for Suezmax stems out of CPC, but with some big numbers paid on Aframaxes in the Med, TD6 rates stand around 130,000mt x ws 185. There isn't a huge number of ships looking to head East at the moment and Owners will still be targeting last done levels of 7.25m for Med/East.

US Gulf/Latin America

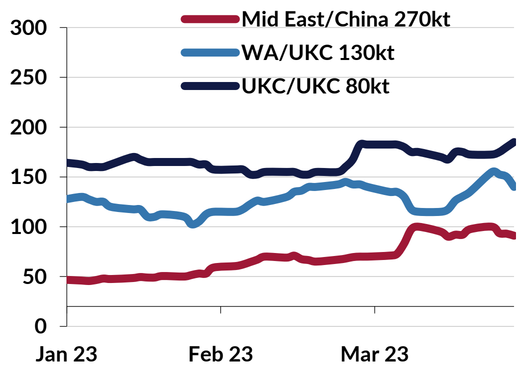
The slower tempo of VLCC enquiry this week has led to some discounting from last done. Yet, with the dependence of Eastern ballasters, rates remain respectable, and the hope will be that any recent blip should be quickly recoverable, once activity picks up. Rates currently stand around $11.75m for a long Eastern run. Aframax Owners are doing their best to maintain the status quo here, but some cracks are beginning to appear, as the slow flow of enquiry takes its toll. Short haul rates are now at around 70,000mt x ws 360, with approximately 100 ws points less for TA.

North Sea

This week has quietly grown in confidence, as it has progressed; yet, it has been somewhat overshadowed by surrounding markets. The list has stayed in the balance, allowing rates only to inch up. We see X-North Sea trading in the mid/high ws 180s. Sentiment is warm but further progress could be hampered, if the North's neighbours come under the cosh.

Crude Tanker Spot Rates

WS



*All rates displayed in graphs in terms of WS100 at the time

Clean Products

East

The LR2s have seen a steady and consistent level of activity this week and as such are pretty tight out to the 7-8 APR window. Charterers with early stems still to cover have the potential to be caught a little of guard here. West sits at the $4.7-4.8m levels and TC1 at the 75 x ws190 mark with both having the potential to push further.

After a pretty slow and uninspiring start to the week, the LR1s are starting to feel a little more exciting. Shorthaul remains very competitive (in some cases less that than MRs), which is a product of a heavy front end looking to kill time before the next window. TC5 is being talked up but as of yet untested and remains at 55x ws185 levels and West at the $3.65-3.75m mark.

MRs have had a very active week, and as the weekend approaches there is still plenty of enquiry in the market. With the list looking tight for the next 10 days and the Far East very active, the number of ships making the ballast to the AG is going to ease. Rates for West sit at the $2.6-2.7m mark and TC12 as 35 x ws 200-210 however, Owners are feeling confident for next week.

Mediterranean

What a week for the Handies plying their trade down in the Mediterranean as we see rates jump over 100 points for XMed. We began the week with XMed trading at the 30 x ws330 mark but with a dump of fresh cargoes into the market Monday/Tuesday rates soon began to rocket. At the time of writing, we see XMed rates sitting at the 30 x ws450 mark with Black Sea in need of a fresh positive test. The list remains tight for end/early dates and with bad weather incoming expect Owners to remain bullish come Monday morning.

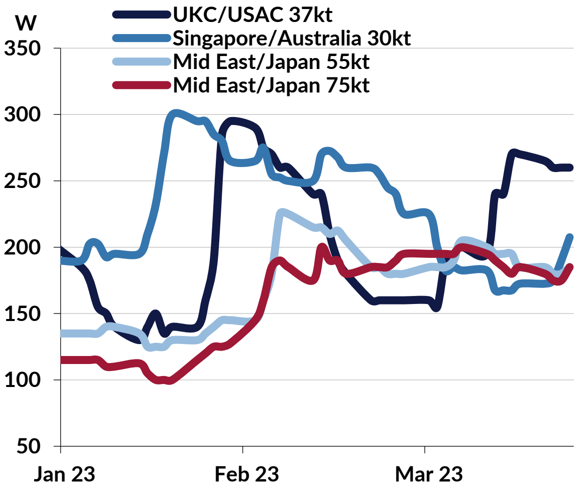
Finally, to the Med MR market where rates have been driven up off the back of a tight-front end and an influx of warranty-required cargoes. 37 x ws260 was the call for vanilla Med/TA at the start of the week but with a few tricky cargoes coming into play we saw ws280 achieved for Nap suitability leaving rates grade dependent. Since then, the Handy market has grown stronger leading to the MR's looking smaller and as a result the list has grown tighter. At the time of writing 37 x ws300 is on subs for Med/UKC Nap run so expect TA rates to creep up when next tested. Potential here if enquiry persists next week.

UK Continent

A mediocre week passes for all parties in the UKC MR sector as the much-anticipated further gains on Monday fell flat. With the US market not offering the hype it was predicted to do, a few more ballasters started to appear on our tonnage list and with slow market enquiry, some negative correction was foreseen. What has kept things moving though has been once again the Jet/Naphtha stems in the Med demanding a premium at 37 x ws280 as well as a spicy handy sector in both UKC and Med. After a few quiet deals cleared the top of our list we found ourselves with very limited options for Charterers in the next week ahead. With little WAF or South American activity seen either, we find TC2 settling around 37 x ws260 and any further prompt enquiry will certainly see some inflated ideas, but for now we hold stable here.

It has been a real positive week for Handies in the North. The booming Med sector driving sentiment partnered with a healthy amount of vessels being delayed in French ports due to strike action pushed XUKC freight up to 30 x ws325 by Friday. There has been good demand for ULSD trading XUKC which has kept the tonnage list turning over and with still uncertainty when the strikes will end, further gains could be likely come next week. Potential here.

Clean Product Tanker Spot Rates



*All rates displayed in graphs in terms of WS100 at the time

Dirty Products

Handy

In the Continent, we started the week seeing Owners succumb to negative sentiment and an inevitable correction which saw market levels drop to ws 287.5 off the back of little activity with Owners were for some form of stimulus to restart the region which never materialised. With tonnage building and itineraries continuing to firm throughout the, week sentiment has stayed firmly in the Charterer's favour. Although we close the week with a softer feel, one or 2 units at the top of the list have managed to find coverage. Going into week 13, expect more of the same as itineraries firm over the coming weekend, restocking lists.

Switching our attention to the Med, a similar pattern to last week occurred as enquiry surfaced throughout the first half of the week but at no real pace and as such, levels traded largely sideways throughout. The potential for delays in French ports could see one or two units rack up some waiting time however this action is yet to have any real impact across the market. Going into next week, with CPP trading upwards of ws 450, there will be fingers crossed as Owners look for an injection of pace in order to claw back recent drops in DPP levels.

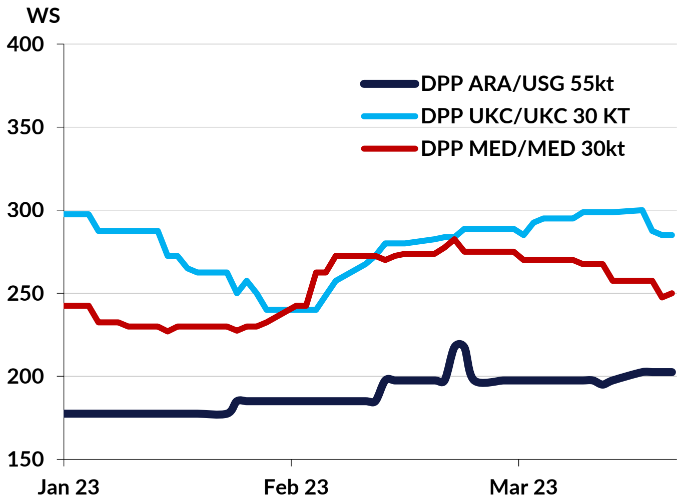
MR

In a change of pattern, marketed tonnage started to build in the North and West Med this week, showing more availability and enabling Charterers to create competition amongst Owners. An injection of full stem enquiry has been welcomed with open arms this week with activity on the Handies being drip fed into the region, offering little backstop for MR units. Tonnage in the North has now tightened off the back of this week's cargo volume and should all vessels get their subs, units in the next window are tight. In the Med, availability has been well balanced throughout the week with the majority of prompt candidates weighted towards the East Med where the foot has come off the pedal for premium runs. There is potential for levels to come under pressure come Monday should the top of the list not see too many questions.

Panamax

A sluggish and frustrating week for Owners with units to fix this side of the pond. Whilst the larger Afras firm in both regions for local and long haul runs, the smaller sized MRs and Handies have dropped off leaving the Panamaxes left wondering when and where the opportunity lies. With levels in the states now close to ws 400 there is potential to see more Owners commit to ballast that way instead of waiting for questions to surface here.

Dirty Product Tanker Spot Rates



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GIBSON SHIPBROKERS

Dirty Tanker Spot Market Developments - Spot Worldscale

			wk on wk change	Mar 23rd	Mar 16th	Last Month*	FFA Q1
TD3C	VLCC	AG-China	**-3**	90	94	65	66
TD20	Suezmax	WAF-UKC	**+15**	144	129	136	125
TD7	Aframax	N.Sea-UKC	**+10**	181	171	153	168

Dirty Tanker Spot Market Developments - $/day tce (a)

			wk on wk change	Mar 23rd	Mar 16th	Last Month*	FFA Q1
TD3C	VLCC	AG-China	**-6500**	86,250	92,750	49,500	51,750
TD20	Suezmax	WAF-UKC	**+9500**	71,500	62,000	66,000	58,750
TD7	Aframax	N.Sea-UKC	**+6750**	79,750	73,000	56,750	69,000

Clean Tanker Spot Market Developments - Spot Worldscale

			wk on wk change	Mar 23rd	Mar 16th	Last Month*	FFA Q1
TC1	LR2	AG-Japan	**-1**	181	183	194	
TC2	MR - west	UKC-USAC	**-8**	263	271	193	207
TC5	LR1	AG-Japan	**-14**	182	196	209	186
TC7	MR - east	Singapore-EC Aus	**+45**	213	168	277	235

Clean Tanker Spot Market Developments - $/day tce (a)

			wk on wk change	Mar 23rd	Mar 16th	Last Month*	FFA Q1
TC1	LR2	AG-Japan	**-1500**	50,000	51,500	54,750	
TC2	MR - west	UKC-USAC	**-2500**	41,000	43,500	24,750	28,250
TC5	LR1	AG-Japan	**-5000**	34,750	39,750	42,500	36,000
TC7	MR - east	Singapore-EC Aus	**+8250**	25,250	17,000	37,750	29,750

(a) based on round voyage economics at 'market' speed, non eco, non scrubber basis

Bunker Price - Rotterdam VLSFO	**+14**	538	524	553
Bunker Price - Fujairah VLSFO	**+17**	558	541	596
Bunker Price - Singapore VLSFO	**+27**	570	543	587
Bunker Price - Rotterdam LSMGO	**+45**	761	716	760

www.gibsons.co.uk

London
Audrey House
16-20 Ely Place
London EC1N 6SN

T +44 (0) 20 7667 1247
F +44 (0) 20 7430 1253
E research@eagibson.co.uk

Hong Kong
Room 1401, 14/F,
OfficePlus @Wan Chai,
303 Hennessy Road.
Wanchai. Hong Kong.

T (852) 2511 8919
F (852) 2511 8901

Singapore
2 Battery Road
09-01, Maybank Tower
Singapore 049907

T (65) 6590 0220
F (65) 6222 2705

Houston
770 South Post Oak Lane
Suite 610, Houston
TX77056 United States

Mumbai
B 1006, 10th Floor
Kohinoor Square
Plot No. 46, NC Kelkar Marg, OPP
Shivsena Bhavan, Dadar (W)
Mumbai - 400028
Maharahstra, India
T +9122-6110-0750