

MARKET COMMENTARY

Atlantic basin: Spot cif NWE down

The spot price of industrial wood pellets for deliveries to northwest Europe (NWE) saw weekly losses, as the market continues to be well supplied and end user inventories near full capacity weighed.

The 90-days industrial wood pellet price fell by \$8.08/t to \$181.22/t cif NWE on Wednesday.

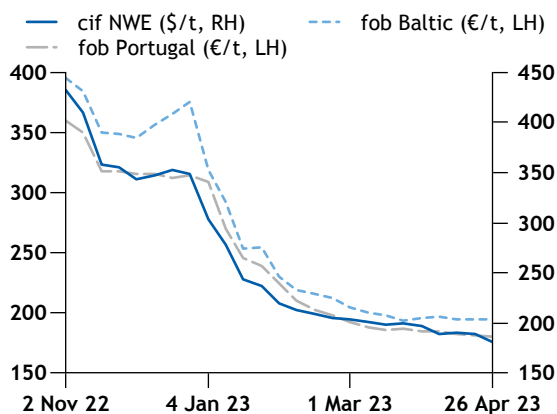
A handy-sized vessel for prompt delivery into Europe traded below this week's Argus spot cif NWE assessment. Discussions were ongoing for other volumes, with at least a couple of more spot cargoes thought to be available.

Buying ideas remain at a discount to offers, most participants said, adding though that utilities' willingness to offer back to the market continued to weigh on the spot prices. Some traders in Scandinavia were sitting on large inventories and could be motivated to offer pellets in the spot market in the coming weeks, a participant said. Two offers were heard at \$170/t and \$180/t cif NWE, but no bids were confirmed matching them. And a bid was heard at \$185/t cif NWE in the week, with no matching offers.

On the power market, the UK's pellet-fired generation fell to 1.4GW from 2GW on an hourly average in the week to 25 April, as planned outage started at Drax's 645MW unit 2 and Czech-Slovak utility EPH's contracts-for-difference CfD supported Lynemouth plant generated less.

The first of two major outages planned this year at UK utility Drax Group's wood pellet-fired units began on 20

Argus industrial wood pellet index



EUROPEAN INDUSTRIAL WOOD PELLETS

	Week index		Month index		
	Price	±	Apr	Mar	Feb
cif NWE \$/t	181.22	-8.08	187.28	199.70	210.95
fob Baltic €/t	193.97	+0.05	194.64	198.02	219.18
fob Portugal €/t	180.46	-0.45	182.04	187.43	208.65

Wood pellets - within 90 days (spot)		Price	±
cif NWE \$/MWh		38.38	-1.71
fob Baltic €/MWh		41.08	+0.01
fob Portugal €/MWh		38.22	-0.09

Wood pellets - forward prices			
	Bid	Ask	±
cif NWE \$/t			
2Q23	176.25	182.25	-9.25
3Q23	182.00	188.00	-5.00
4Q23	222.00	228.00	-5.00
1Q24	227.00	233.00	nc
2024	217.00	223.00	nc
2025	222.00	228.00	nc
2026	212.00	218.00	nc
fob Baltic €/t			
2Q23	190.50	196.50	-0.50
3Q23	194.00	200.00	nc
4Q23	217.00	223.00	nc
1Q24	222.00	228.00	nc
2024	215.00	221.00	nc
2025	207.00	213.00	nc
2026	202.00	208.00	nc
fob Portugal €/t			
2Q23	177.00	183.00	-1.00
3Q23	182.00	188.00	nc
4Q23	202.00	208.00	nc
1Q24	212.00	218.00	nc
2024	205.00	211.00	nc
2025	197.00	203.00	nc
2026	192.00	198.00	nc

Contents

Atlantic basin industrial wood pellets	1
European wood chips	3
European premium wood pellets	4
Asian industrial wood pellets and PKS	5
Wood pellet freight rates	6
Break-even generation costs	7
Weather	8
Market news	9

April, at unit 2, scheduled to end on 10 July. The similarly sized unit 4 is due to be offline on 20 July-15 October. And a new maintenance was filed for Lynemouth's 133MW unit 2 on 19 April-18 July this week on Remit, along with an outage at RWE's co-fired 790MW Eemshaven B unit in the Netherlands scheduled during 18 August-29 September. The latter plant can feed up to 30pc of its capacity from pellets.

Overnight temperatures in London were forecast to be 0.3°C above seasonal norms at 12.9°C for the next 14 days, and 0.2°C below with norms at 13.6°C for the next 45 days. In Paris, these were expected 0.5°C above norms at 11.3°C for the next 14 days, and at 12.8°C in the next 45 days. In Amsterdam, at 1.4°C below norms at 10.7°C and 0.3°C below norms at 12.9°C over the respective periods.

Further out, discussions – most of which followed the Argus Biomass conference held in London on 18-20 April – were ongoing for deliveries in winter 2023-24 season and for all of 2024.

Talks for winter deliveries were expected to be finalized in the coming couple of weeks. There was some hesitation from suppliers reported over RED II certification of pellets. Implementation of EU's amended renewable energy directive (RED) II for utilities started from 1 January, after an 18-month grace period that ended in December 2022.

Prices for winter deliveries were yet to surface. The bid-offer range stood at \$220-240/t cif NWE for this period in the week prior to 19 April, but the downside in spot prices this week also affected price ideas on the forward curve.

In the Baltics, the spot 90-days pellets price stayed broadly flat on the week at €193.97/t fob Baltic, as spot trading activity was limited.

Most producers' ideas stood at high premiums over bids, with the best offers heard in the €205-210/t fob Baltic range. A coaster was heard traded around €195/t fob Baltic last week, although this could not be confirmed with the counterparties. Production costs in the Baltics remain high, although raw material prices were expected to drop later in the summer, in anticipation of slower pellet production and weaker demand from competing sectors which may weigh on price ideas from forest managers.

Elsewhere, the fob Portugal spot price fell by €0.45/t on the week to €180.46/t fob Portugal.

Industrial producers in Portugal were heard to be working to long term contracts rather than offering material to the spot market. Sawmilling activity continued to slow

NORTH AMERICAN INDUSTRIAL WOOD PELLETS

US fob export price (industrial wood pellets)						\$/t
Origin	Delivery period	Mid	Bid	Ask	±	
fob southeast US	Spot		156.72	159.72	-8.71	
fob southwest Canada	Spot		142.47	145.47	-5.71	
fob northeast US	Spot	159.20			-8.10	

US fob export price (industrial wood pellets)						\$/MWh
Origin	Delivery period	Mid	Bid	Ask	±	
fob southeast US	Spot		33.19	33.82	-1.85	
fob southwest Canada	Spot		30.17	30.81	-1.21	
fob northeast US	Spot	33.71			-1.72	

Wood pellets - forward prices					\$/t
	Mid	Bid	Ask	±	
fob southeast US					
2Q23		154.75	157.75	-9.75	
3Q23		160.50	163.50	-10.50	
4Q23		200.50	203.50	+4.50	
1Q24		205.50	208.50	+4.50	
2024		195.50	198.50	-0.50	
2025		200.50	203.50	-0.50	
2026		190.50	193.50	-0.50	
fob southwest Canada					
2Q23		140.50	143.50	-6.75	
3Q23		146.25	149.25	-7.50	
4Q23		186.25	189.25	+7.50	
1Q24		191.25	194.25	+7.50	
2024		181.25	184.25	+2.50	
2025		186.25	189.25	+2.50	
2026		176.25	179.25	+2.50	
fob northeast US					
2Q23	157.25			-9.25	
3Q23	163.00			-5.00	
4Q23	203.00			-5.00	
1Q24	208.00			nc	
2024	198.00			nc	
2025	203.00			nc	
2026	193.00			nc	

down due to lower consumer demand, and traditional pine residues continued to be replaced by eucalyptus – over a structural trend – and other feedstock sources, a participant said.

But there was strong interest for ENplus A1-grade bulk Portuguese pellets, with the bid-offer spread for deliveries in May-September heard at €225-245/t fob Portugal in the week.

European wood chips: Spot drops

The 90-days spot price for industrial wood chip deliveries to northwest Europe (NWE) dropped on the week to €10.85/GJ, as more volumes were being offered in the market over improved raw material availability.

Firm talks for 5,000t of wood chips were heard around €12/GJ cif Finland, although no trade was confirmed concluding in the week.

Spot buying interest was heard muted elsewhere in the market owing to high stocks at end user sites.

Some price ideas were heard around €10-10.50/GJ for deliveries to Denmark, but no trades could be confirmed in this range in the week.

This is at a discount to the price ideas for deliveries to Finland, owing to larger geographical distances for the latter from the Baltics. And Danish ports are typically larger and can receive larger vessels from Europe and overseas, which gives Danish buyers more leverage to achieve lower delivered prices, a participant said.

On the supply side, offers were heard in a wide range of €7-8.50/GJ fob Baltic, although some sellers' ideas stood higher.

Buying interest remained in Sweden, although some companies that typically use chips were heard enquiring about wood pellets, provided that wood chips had become harder to source and continue to hold a premium over pellets when adjusted for energy content.

Sweden is expected to import more volumes than usual for the 2023-24 heating season as the local forestry company announced it would cut felling by 30pc this year owing to over-cutting in 2022. Although the impact on the bioenergy sector may be limited, as most of the local wood is destined for the pulp and paper industry and other industries.

Raw material supply in the Baltics was heard to be sufficient, but forest owners may stop harvesting if wood chip prices drop further along the curve making it less economical to produce, participants said. At least one forest owner in the Baltics was heard to have dropped starting prices at latest tenders from €55/m³ to €46/m³, to provide more incentive for buyers, but these were still around €10/m³ above where the energy sector would be willing to buy.

Elsewhere, in Spain, raw material availability was heard stable. And offers were heard fob Mediterranean in a range of €6-8/GJ.

At least one supplier is expected to conclude deals for the next heating season over the next two weeks. While some concern was heard over Baltic suppliers overselling to the export market ahead of the 2023-24 heating season, which could lead to tightness in feedstock and an uptick in spot prices.

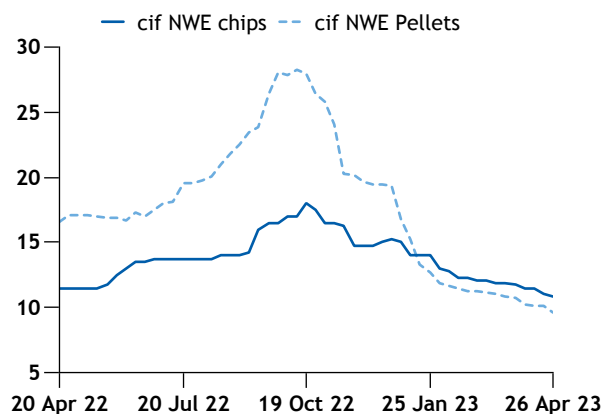
INDUSTRIAL WOOD CHIPS

NWE wood chips - within 90 days (spot)					€/GJ
	Week index		Month index		
	Price	±	Apr	Mar	Feb
cif NWE	10.85	-0.15	11.21	11.93	12.56

Wood chips cif NWE - forward prices				€/GJ
	Bid	Ask	±	
2Q23	9.85	11.85	-0.15	
3Q23	10.00	12.00	nc	
4Q23	11.00	14.00	-0.50	
1Q24	11.00	14.00	-0.75	
2024	10.00	12.00	nc	
2025	9.75	11.75	nc	
2026	9.50	11.50	nc	

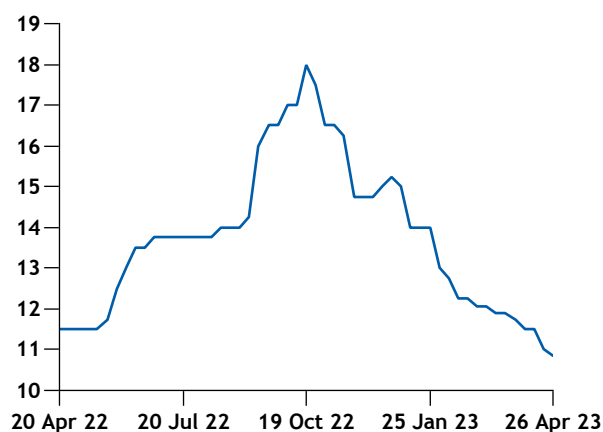
Spot wood chips vs pellets cif NWE

€/GJ



Spot wood chips, cif NEW

€/GJ



Overnight temperatures in Oslo, Norway, were forecast to average 3.1 °C in the next two weeks, or around 2.1 °C below seasonal norms. And, in the 45 days to 8 June, average minimum temperatures were expected to be 7 °C, or 0.1 °C below the 10-year average for the period, Speedwell Weather data show.

European premium: Spot extends gains

The 45-day spot price for EN plus-certified A1-grade pellets delivered to northern Italy increased on the week, as falling temperatures in some parts of Europe and higher pre-season demand supported spot prices.

Bagged and bulk premium pellet prices increased to €305/t and €260/t, delivered northern Italy, respectively, on Wednesday.

The range of spot price ideas for deliveries in northern Italy widened from a week earlier in the seven days to Wednesday, with outliers as high as €340-50/t but with most falling in the €280-320/t range. Further price increases of between €10-20/t were expected for each month in May and June, with producers reporting strong pre-season buying interest.

Prices for summer deliveries typically see a discount of around 10pc compared with the average for the heating season. But the trends seems to have reversed this year, as talks for pre-season volumes started earlier than anticipated, with participants putting this down to lower-than-usual stocks. And end users keen to avoid having open positions or paying higher prices later in the year.

Temperatures in northern Europe – primarily in the Nordics and Baltics – holding below 10-year averages bolstered heating demand. Overnight temperatures in Oslo, Norway, were expected to average 2.1°C below norms at 3.1°C in the coming two weeks, and in the 45 days to early June these are expected to fall in line with long term averages, to around 7°C.

By contrast, milder weather in Italy could not offset the upside from higher stocking demand. Average overnight temperatures in Milan, Italy, were forecast 9.7°C in the two weeks from Wednesday, or around 0.9°C above the long-term average for the period. These were forecast to increase to an average of 11°C in the following month, 0.5°C above seasonal norms, Speedwell Weather data show.

Elsewhere, it was heard that demand for bulk premium pellet deliveries was increasing in the Baltics and that offers from the region were high. Trucking rates between the Baltics and Italy stood in line with norms at around €1.1/km, a participant said. And shipping rates between the two were heard to be in the €35-40/t range in previous weeks.

Lower demand for sawn timber in the Baltics continued to leave less raw material available for pellet production, a trend echoed in Portugal, where a switch from traditional pine residues to the use of eucalyptus was ongoing as a slowdown in demand for consumer products continued, a participant said.

Buying interest in Portugal for bulk EN Plus A1 pellets for delivery in May to September was heard at €225-245/t.

Argus Cif NWE monthly figures		\$/t
Balance of April		178.00
May		179.75
June		180.00
July		185.00

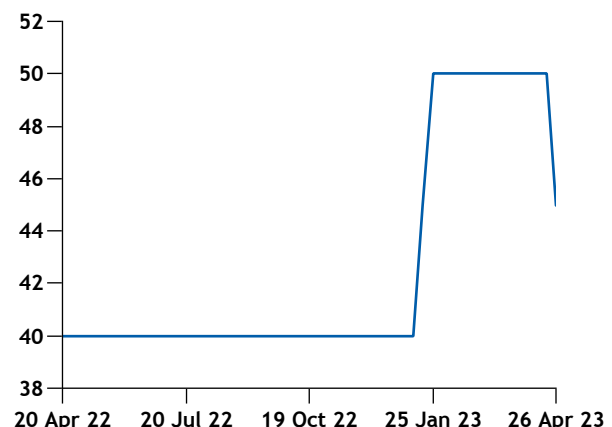
The figures above are an average survey result value for each month contained in the 90-day spot period. They are shown for indicative purposes, to better illustrate the composition of the market-survey component of the spot cif NWE index. The spot index value can be found on page 1 of the report.

EUROPEAN PREMIUM WOOD PELLETS

Wood pellets - within 45 days (spot)					€/t
Delivered northern Italy	Mid	Low	High		±
Bulk	260.00	245.00	275.00		+15.00
Bagged	305.00	290.00	320.00		+10.00

Premium wood pellets				€/t
Delivered northern Italy	Month index			
	Apr	Mar	Feb	
Bulk	246.25	231.50	271.25	
Bagged	295.00	281.50	321.25	

Italian premium prices: bagged vs bulk €/t



Argus successfully completes annual losco assurance review

Argus has completed the 11th external assurance review of its price benchmarks covering crude oil, oil products, LPG, chemicals, thermal and coking coal, natural gas, biofuels, biomass, metals, fertilizers and agricultural markets. The review was carried out by professional services firm PwC. Annual independent, external reviews of oil benchmarks are required by international regulatory group losco's Principles for Oil Price Reporting Agencies, and losco encourages extension of the reviews to non-oil benchmarks. For more information and to download the review visit our website <https://www.argusmedia.com/en/about-us/governance-compliance>

Asian industrial: Pellet prices continue descent

The 90-day spot price for Vietnamese wood pellets to both South Korea and Japan fell on the week as a result of prolonged lacklustre demand.

The spot fob Vietnam to South Korea price fell \$3.50/t on the week to \$105/t, while the cfr Gwangyang price fell \$2.70/t. The spot fob Vietnam to Japan fit price fell \$2.72/t on the week to \$142.75/t.

South Korea and Japan’s demand remain relatively weak, particularly following outages at some Korean utilities last month, and Japan relying on sufficient term imports from North American suppliers.

South Korea may see a pickup in demand after independent power producer (IPP) Hanwha Energy awarded a tender to buy 40,000t of May-June-loading cargoes which closed last week at about \$105-110/t on a cfr Gwangyang basis, while IPP SGC Energy has issued a tender seeking a maximum of 50,000t of late May-early June-loading cargoes which closes this week.

The country’s renewable energy credit (REC) value – which typically supports independent power generators’ wood pellet demand when firm – fell to 69,900 won/REC (\$52.28/REC) on Tuesday, down from W75,500/REC a week earlier, Korea Power Exchange data show. This was still 31pc higher compared with the April 2022 average of W53,463/REC. Korea imposed a system marginal power price (SMP) cap for April at W164.52/kWh for inland South Korean power, excluding Jeju, which is 23pc below the March 2023 average. The SMP is the unit price at which IPPs sell to state-controlled utility Kepco.

That said, a pickup in demand may not fully translate into significantly firmer prices, participants said, as pellet feedstock costs have also fallen significantly on China’s slower-than-expected economic growth and could offset the upside.

Elsewhere, some Japanese customers were heard to be receiving Vietnamese pellets instead of North American supplies, which could be because an excess of Vietnamese shipments has been booked when European pellet prices hit record highs last year, a few participants suggested, although this could not be immediately confirmed. In the spot freight market, rates were seen recovering, mostly driven by owners thinking that prices had bottomed out, rather than by fundamentals, a participant said.

In the palm kernel shells (PKS) market, the fob east coast Sumatra spot price remained broadly stable on the week, while the fob Peninsular Malaysia price continued upwards.

The 90-day dob east coast Sumatra spot price inched down \$0.12/t on the week to \$132.70/t, while the fob

ASIAN INDUSTRIAL WOOD PELLETS

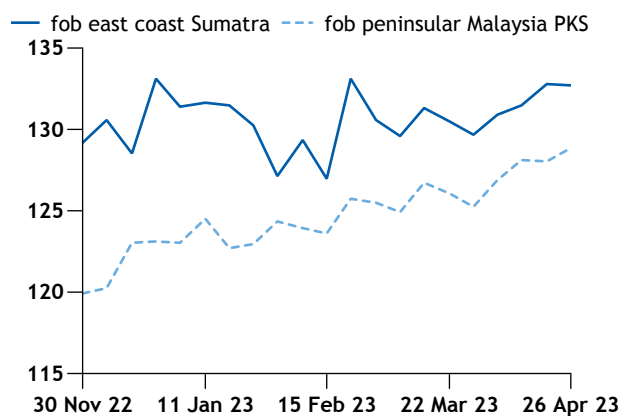
Wood pellets - 90 days (spot)	Week index		Month index		
	Price	±	Apr	Mar	Feb
	fob Vietnam to S Korea	105.00	-3.50	115.84	146.68
fob Vietnam to Japan FIT	142.75	-2.72	147.61	167.61	184.07
cfr Gwangyang	114.05	-2.70	125.80	162.14	175.99

ASIAN PALM KERNEL SHELLS

Palm kernel shell (spot)	Week index		Month index		
	Price	±	Apr	Mar	Feb
	fob east coast Sumatra	132.70	-0.12	131.98	130.32
fob peninsular Malaysia	128.85	+0.85	127.98	125.68	124.40

PKS spot prices

\$/t



Peninsular Malaysia price rose \$0.85/t to \$128.85/t.

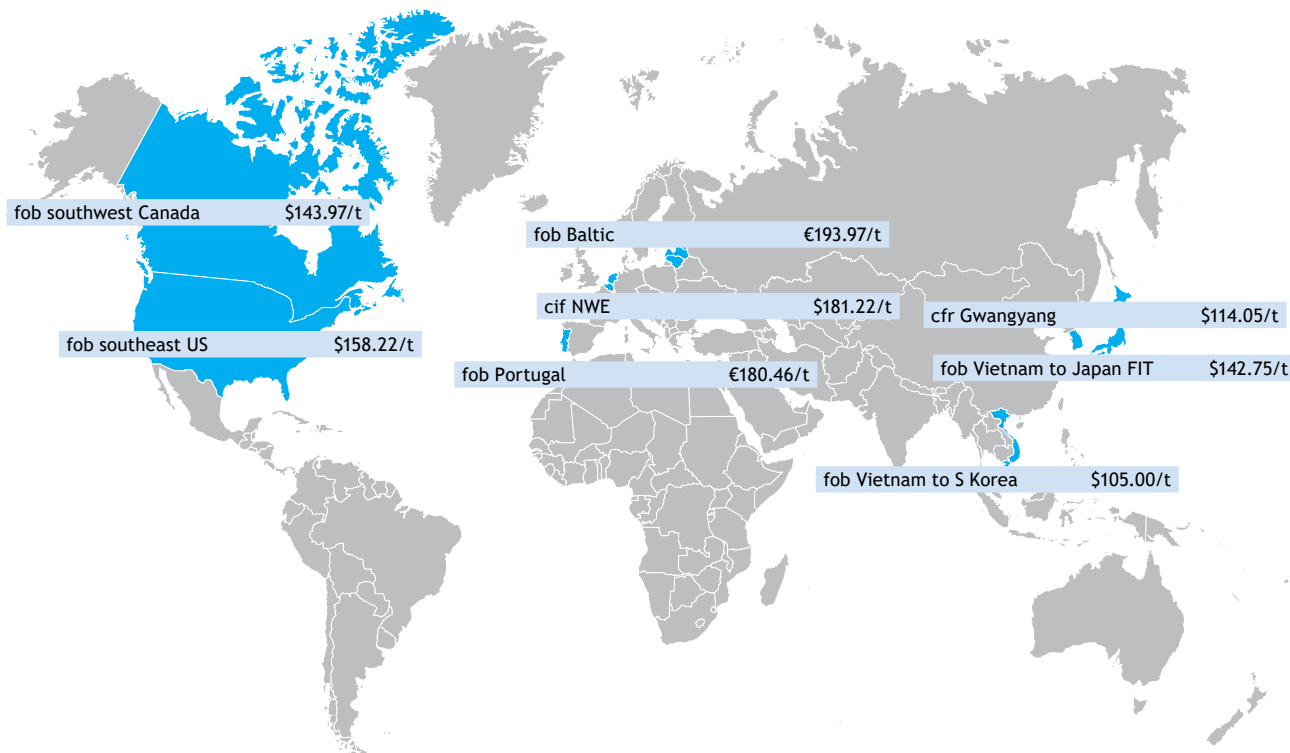
Participants observed a relatively quieter market this week as Indonesia and Malaysia’s Eid holiday and Japan’s upcoming Golden Week has resulted in a lull period.

PKS Japanese refiner Eneos’ 75MW Muroran biomass unit was understood to be scheduled for annual maintenance from May-June.

The low and high harvest season will be more difficult to gauge this year owing to high fertilizer costs and labour shortages last year, which might affect individual plantations differently, a participant said.

Elsewhere, a cargo of PKS was heard to have been shipped out of the east coast of Sumatra towards Portugal, with a participant attributing the demand to a requirement to burn agricultural waste, although this could not be immediately confirmed.

INDUSTRIAL WOOD PELLET SPOT PRICES AT A GLANCE



COMPETING FUELS

Argus competing fuel assessments			
	Units	Delivery	Price
Europe			
Gasoil heating oil French cif NWE	\$/t	prompt	723.250
Natural gas NBP	€/MWh	May	36.3045
US			
Fuel oil 1% New York Harbor	\$/bl	prompt	74.730
Natural gas Nymex	\$/mnBtu	May	2.273
European Emissions			
CO2 EU ETS	€/t	2024	86.700

WOOD PELLET FREIGHT RATES

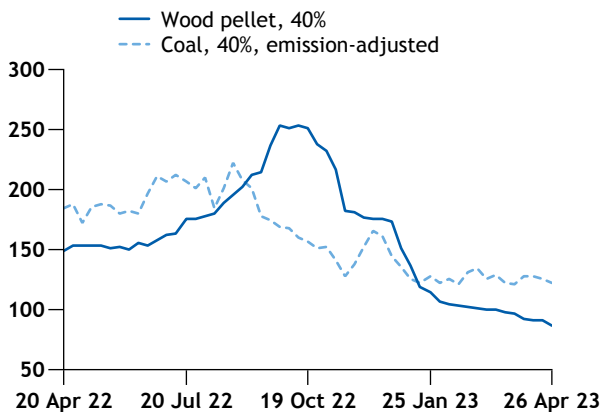
Argus wood pellet freight indications, spot cargo				
Route	Tonnage	Units	Rate	±
Aveiro-ARA	3500	€/t	23.500	-1.500
Aveiro-Copenhagen	3500	€/t	28.500	-1.000
Aveiro-Hull (UK)	3500	€/t	25.500	-1.000
Riga-ARA	5000	€/t	20.000	-0.500
Riga-Copenhagen	5000	€/t	15.500	-0.500
Riga-Stockholm	5000	€/t	14.500	-0.500
St Petersburg-ARA	3500	€/t	na	nc
St Petersburg-Copenhagen	3500	€/t	na	nc
St Petersburg-Stockholm	3500	€/t	na	nc
Mobile-ARA	25000	\$/t	27.000	-0.500
Mobile-ARA	45000	\$/t	20.500	-3.000
Savannah-ARA	25000	\$/t	23.000	nc
Savannah-ARA	45000	\$/t	18.000	-2.500
Vancouver-ARA	45000	\$/t	37.250	-2.750

BREAK-EVEN GENERATION COSTS

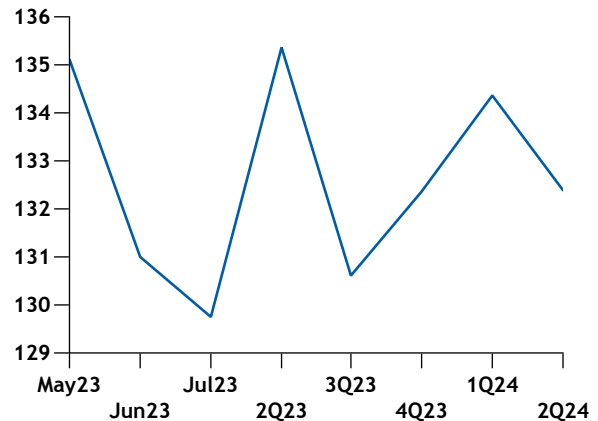
cif NWE wood pellet break-even				cif ARA coal break-even			
26 Apr		Spot	3Q23	Week average		Spot	3Q23
Pellet cost \$/t		181.22	179.250				
Plant efficiency	Unit	Break Even		Plant efficiency	Unit	Break Even	
36%	\$/MWh	106.61	108.83	36%	\$/MWh	150.49	145.56
	€/MWh	96.51	98.53		€/MWh	136.24	131.78
38%	\$/MWh	101.00	103.11	38%	\$/MWh	142.57	137.90
	€/MWh	91.43	93.34		€/MWh	129.07	124.84
40%	\$/MWh	95.95	97.95	40%	\$/MWh	135.44	131.01
	€/MWh	86.86	88.67		€/MWh	122.62	118.60
41%	\$/MWh	93.61	95.56	41%	\$/MWh	132.14	127.81
	€/MWh	84.74	86.51		€/MWh	119.63	115.71

*Breakeven generation costs represent the calculated costs of generating power with wood pellets and/or coal based on Argus assessed spot prices. For a plant to break even, the combined price of power and subsidy amount (if applicable) would need to be equal to the calculated breakeven generation cost.

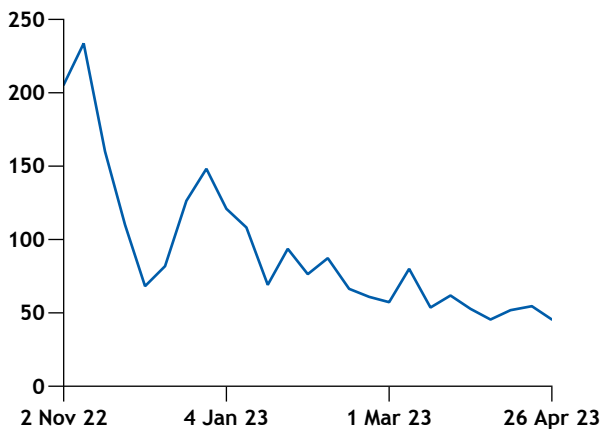
Break-even generation cost, cif NWE spot €/MWh



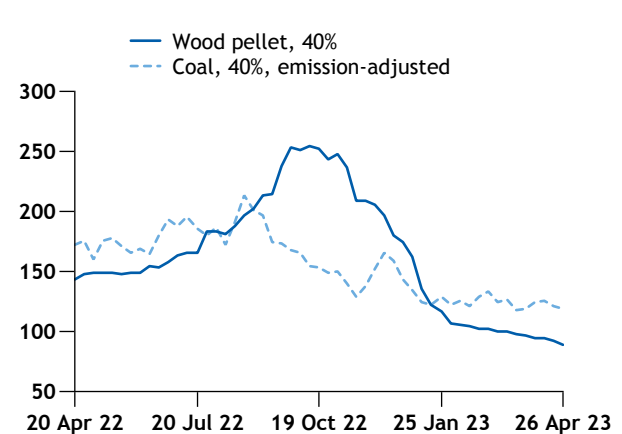
cif ARA coal swaps forward curve \$/t



Wood pellet, cif NWE spot premium to coal, cif ARA \$/t



Break-even generation cost, cif NWE front quarter €/MWh



WEATHER

European weather - Departure from normal temperatures												°C
Location	27 Apr		28 Apr		29 Apr		30 Apr		1 May		Precipitation (mm)	
	Avg	± normal*	Avg	± normal*	Avg	± normal*	Avg	± normal*	Avg	± normal*	5-day	15-day
UK – London Heathrow	11.1	-1.0	14.9	2.7	14.0	1.7	13.6	1.2	13.3	0.8	10.0	25.8
Norway – Bergen Florida	7.0	-2.2	7.0	-2.3	7.5	-1.9	6.7	-2.8	8.1	-1.5	21.9	46.7
Norway – Oslo Blindern	6.1	-3.1	5.8	-3.6	6.4	-3.1	6.6	-3.1	6.9	-3.0	4.2	17.3
France – Paris Orly	13.1	0.0	16.6	3.4	14.4	1.1	14.4	1.0	13.7	0.2	10.6	28.9
The Netherlands – Amsterdam Schiphol	7.9	-3.9	11.2	-0.7	11.2	-0.8	11.1	-1.0	11.0	-1.1	8.7	23.5
Germany – Essen	8.2	-4.0	12.1	-0.2	12.2	-0.2	11.7	-0.8	11.7	-0.9	11.9	29.1
Germany – Berlin Tempelhof	6.4	-6.0	8.1	-4.5	11.3	-1.4	10.6	-2.2	10.9	-2.0	5.3	19.0
Italy – Milano Malpensa	13.5	-2.6	15.8	-0.5	16.9	0.5	15.5	-1.1	15.4	-1.3	28.0	59.4
Italy – Rome Fiumicino	14.0	-1.6	14.7	0.0	15.7	0.5	16.5	1.2	16.3	0.9	8.9	21.2
Poland – Warsaw Okęcie	6.3	-5.3	6.5	-5.3	10.0	-1.9	10.7	-1.4	10.7	-1.6	2.8	19.9
Czech Republic – Prague Ruzyně	5.7	-5.9	8.0	-3.7	11.3	-0.5	10.9	-1.0	10.7	-1.4	10.7	23.8
Hungary – Budapest Lörinc	8.8	-6.1	10.6	-4.5	13.2	-2.0	13.9	-1.5	14.7	-0.8	8.2	21.8
Serbia – Belgrade Surcin	9.5	-5.8	10.1	-5.3	13.3	-2.3	14.4	-1.3	15.4	-0.4	6.4	25.9
Romania – Bucharest Imh	10.9	-2.8	10.0	-3.9	10.8	-3.3	12.2	-2.0	13.8	-0.6	1.2	19.1
Spain – Madrid Barajas	20.8	6.4	22.3	7.8	23.0	8.3	19.7	4.9	18.0	3.1	1.2	10.5

*normal means cleaned 10-year average (2004-2013 inclusive)

– Ensemble forecasts (12:00 GMT) provided by Speedwell Weather



Ensemble averages and cleaned weather data all supplied by Speedwell Weather Limited (12:00 GMT). For more information visit: www.speedwellweather.com

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N American biomass producing capacity to grow

North America is expected to see significant wood pellet production capacity growth in the coming years, in line with increasing demand, delegates heard at the *Argus Biomass* conference held in London on 18-20 April.

In the US, wood pellet producer Enviva plans to build four plants each with 1.1mn t/yr capacity over the next four years, which will take the firm's total "installed capacity from 6mn t/yr to a little over 10mn t/yr," chief commercial officer John-Paul Taylor said.

In 2022 Enviva signed 12 long-term off-take agreements, with growing demand in Taiwan "underpinning production going forward," Taylor said. The capacity increase was mostly to ensure stable supply over the long term with large scale facilities.

"What we are seeing is an increase in diversification in wood pellet [end users], new industries, new growth and regions that are developing here in the EU... [and] new demand that we are seeing across the US south and the gulf coast," Taylor said.

"We're seeing strong growth in Asia, and incremental demand in Japan as it pivots into further defossilisation," Taylor said. Japan is targeting 10pc use of SAF by domestic airlines by 2030.

There may be expansion in Canada, with the decline in the pulp and paper industry providing a surplus of feedstock for biomass production, Gordon Murray, chief executive of the Wood Pellet Association of Canada (WPAC) said.

UK-based Drax Group currently supplies 50pc of Canadian production and 50pc of exports – following the acquisition of Pinnacle in early 2021 – making it the largest exporter on the west coast, Murray said. And half of Canada's output is provided by smaller producers, who typically own one or two plants. Canadian producers are actively looking to export into Japan, Europe or the US – where they have a foreign exchange rate advantage, he added.

Canadian exports to Japan more than doubled on the year [in February to 178,000t](#), while exports to the UK dropped to 24,000t in January from 177,000t a year prior. This is a continuation of a trend that started in 2022 when Japan became Canada's largest export destination for the first time, after the UK held the largest share in previous years.

Canada may see an uptick in domestic demand, as recent policy developments saw biomass fired boilers included in its \$5,000 per home subsidy along with heat pumps, Murray said. WPAC is working with Canadian provinces to support the installation of pellet stoves and boilers with up front capital, he added.

Elsewhere, India was discussed as a potential source for agricultural biomass supply. In India there are 750mn t/yr of agricultural biomass residues available a year, but only an

estimated 500mn t/yr are used currently. The government plans to use the surplus in power plants, rather than just burning it in fields. The government's mandate of a [5pc co-firing rate](#) of biomass with coal is set to increase to [7pc](#) from October 2023. Indian state-controlled utility NTECL is seeking nearly 2.5mn t of biomass pellets over a seven-year period to meet mandatory co-firing requirements.

By Hannah Adler

Drax increases year-ahead power hedging

UK utility Drax has hedged more of its year-ahead power generation compared with the same time last year, while it has revised down its expected capital investment for this year following a pause on its UK carbon capture project.

Drax had hedged 10.5TWh of 2024 power generation at an average price of £149.10/MWh as of 21 April, compared with 22 April 2022 when its year-ahead hedges – for 2023 – totalled 8.3TWh.

The utility had hedged 12.5TWh of 2023 generation at £158.60/MWh as of 21 April 2023, alongside 3.2TWh of 2025 power sales at £137.30/MWh. This excludes any sales for its contract for difference (CfD) unit, it said.

Lower generation is expected from Drax's biomass-fired units in the renewable obligation certificate (ROC) scheme owing to two major outages this year. The 645MW unit 2 at the plant went off line on 20 April and is scheduled to return on 10 July, with the 645MW unit 4 then due to be off line over 20 July-15 October.

Drax expects capital investment in 2023 to total £520mn-580mn, revised down from £570mn-630mn previously expected. This is as the utility's bioenergy carbon capture and storage (Beccs) project [was not included in the UK government's "track 1" process last month](#).

Drax had been aiming to commission its first Beccs unit in 2027 and a second in 2030. But it will now aim to deploy the technology by 2030 and has [paused investment for 2023](#) as it awaits further clarity from the government on the future of the project.

Discussions are ongoing with the government, which has launched a track 2 CCS process and plans to enable the expansion of track 1 clusters through a process that will be set out later this year. The government has also said that it will publish a biomass strategy by the end of June. Westminster plans to support Beccs through a dual CfD business model, combining a CfD for electricity generation and one for carbon capture.

Drax is also discussing a "bridging mechanism" for biomass-fired generation between the end of current support

schemes in 2027 and commissioning of Beccs, it said.

The group has previously said it was considering to invest in [two new-build](#) 300MW Beccs power units with a 2TWh/yr power generation and 2mn t/yr of carbon dioxide capturing capacity each.

Higher pellet production costs

Drax reaffirmed it expects wood pellet production costs to be higher in 2023 compared with a year earlier mostly because of “inflationary pressures, primarily in transportation and utilities”, as the group had [said](#) in its financial results for 2022 in February.

Drax’s pellet production costs rose by \$9/t on the year to \$152/t on a fob US basis in 2022, as inflationary pressure on fuels costs and surcharges, the group reported higher by 35pc and 20pc on the year, respectively, and US rail restrictions were behind the increase.

“While continuing to optimise its supply chain to maximise value for the Group, Drax remains focused on opportunities to reduce the cost of biomass,” it said on Wednesday.

US pellet producer Enviva [also said](#) earlier this month it aimed to reduce production costs by around 10.8pc year on year in 2023 to \$132/t.

Drax has pellet production plants in both Canada and the US. It said in the US its focus remained “on ensuring the Demopolis plant reaches full capacity and reliable, safe operation.” The 360,000t/yr Demopolis plant in Alabama started commercial operations in April 2022.

Pellet production under Drax’s umbrella climbed to 3.9mn t in 2022 from 3.1mn t a year earlier owing to the group adding more than 500,000 t/yr of nameplate capacity, with new plants in Demopolis (Alabama), Leola and Russellville (Arkansas), and the acquisition of another plant in Princeton, British Columbia, in August 2022.

By Josh Evans and Erisa Senerdem

Drax to fund Beccs via voluntary carbon market

UK utility Drax plans to use voluntary carbon credits to fund its planned bioenergy with carbon capture and storage (Beccs) projects, Drax commercial director Angela Hepworth told delegates today at the *Argus Biomass 2023* conference in London.

Selling credits into the voluntary carbon market (VCM) is “how we will be able to develop our high integrity carbon removal projects”, Hepworth said, although she did not provide detail around the proportion of funding that may be provided via the VCM. In the US, Drax is speaking to people who may purchase credits, which would allow it to invest in Beccs projects there, she added. Drax is [considering several Beccs projects in the US](#). It signed an [initial agreement](#)

[in September last year with London-based carbon market investment firm Respira](#) to supply the voluntary carbon market with up to 2mn CO₂ removal (CDR) credits produced from Drax’s North American Beccs projects.

“There are no Beccs projects anywhere in the world [currently] at commercial scale”, Hepworth said today. She noted several pilots, but that “none of them are being developed without some government support”. But Hepworth said that she was confident the cost of Beccs will come down as the technology scales up.

Drax has been [testing Beccs](#) at its 3.9GW power plant in Selby, North Yorkshire, since 2018, but it [temporarily paused plans last month](#), citing the need for government support. Although the project did not progress to the next stage of the UK government’s funding programme for carbon capture developments, Drax and the government are now in bilateral talks. The company “stands ready to progress [its] £2bn investment programme”, and deliver its Beccs project by 2030, chief executive Will Gardiner said on 30 March.

The [UK government plans to use](#) a dual contracts for difference (CfD) business model to support Beccs. The model combines a CfD for low-carbon electricity generation and one for carbon captured, but it is not yet finalised. Rules around the sustainability of the biomass used will be covered in the upcoming biomass strategy, expected by the end of June. Beccs is considered carbon-negative under current UK and EU legislation, as sustainable biomass burn is classified as carbon-neutral. Government subsidies for biomass in the UK end in 2027.

Drax is working with Swedish utility Stockholm Exergi – which is [testing Beccs at its 130MW KVV8 combined heat and power plant in Stockholm](#) – on a set of common standards for the technology, Hepworth said today. The lack of a common, high integrity standard “is a real issue”, she added.

The UN Intergovernmental Panel on Climate Change (IPCC) and the EU have cautioned that, although CDR has a role to play for high-emitting, hard to abate sectors, [the first step to reaching climate goals must be to sharply reduce emissions](#).

By Georgia Gratton

Drax ends coal-fired operations

UK power producer Drax has officially ended coal-fired generation at its plant in northeast England.

The decommissioning process to remove coal-related infrastructure from the site has started following the expiry of the firm’s winter contingency contract with UK grid operator National Grid ESO, Drax said.

Drax has [not participated in any coal-fired operations](#) since January 2022, despite several of its coal-fired

units being available over the winter for emergency use, according to the company's full-year report.

The power plant was formerly western Europe's largest coal-fired generator, with capacity as high as 4GW in 1986. The plant began co-firing biomass with coal in 2003, with the first full conversion of a coal-fired unit completed in 2013.

The Drax plant's four biomass-fired units generated 12.7TWh in 2022.

By Evan Millard

ArcelorMittal ready for 'biomass commitments'

Steel manufacturer ArcelorMittal estimates it could use up to 2.8mn t/yr of biomass in the future to replace pulverized coal injected (PCI) in its blast furnaces in Europe. And it is "ready to make long-term commitments", delegates heard at the annual Argus Biomass conference in London on 18-20 April.

"We are really ready to take long-term commitments on the volume [of biomass] but for the moment are still looking for any good project," said Steve Sirdey, manager of the company's European buyer alternative reductants and biomass department, at a panel discussion at the conference.

ArcelorMittal estimates that it can replace 5pc of its PCI use at its blast furnaces with biocarbon. This would require a consumption equivalent of around 712,000 t/yr of woody biomass. Going forward, the company aims to replace 20pc of its current PCI use, equivalent to 2.8mn t/yr of biomass.

These are "huge volumes and difficult to find in the market today", said Sirdey, adding that it could still be achievable.

There are two main criteria that ArcelorMittal will consider when deciding whether to switch from coal to biomass – the carbon content and price, said Sirdey.

The company's long-term strategy is to replace fossil fuel-fed blast furnaces with electric ones powered by hydrogen by 2050, for which carbon will still be needed for the process of steelmaking, and it "must be biogenic".

"We will always need biocarbon," said Sirdey.

Torero biocoal plant start-up in May

In the interim, ArcelorMittal aims to reduce its dependency on fossil fuels, not only by replacing PCI with biomass, but also through carbonisation and gasification.

The company will start up a first reactor at its 75,000 t/yr Torero biocarbon plant in Ghent, Belgium, in May, delayed from end of March when it was **expected** to be commissioned previously.

Torero will use 180,000 t/yr of waste wood to produce 75,000 t/yr of biocarbon – torrefied pellets that have a higher energy density than traditional woody biomass when pelletised and are considered a form of carbon sequestration. The first reactor will have the capacity to produce up to 37,000 t/yr of biocarbon, and

a second reactor will be added in the next two years.

ArcelorMittal also plans to use carbon capture and utilisation technology at the plant, to convert waste gases and biomass from the steelmaking process into advanced ethanol for use in chemical products, including transport fuels, paints and plastics

By Erisa Senerdem

Drop in pellets sold into UK RHI market in 2022

There were 80,000t fewer premium pellets consumed by the domestic renewable heat incentive (RHI) market in the UK in 2022 compared with 540,000t in 2021, wood fuel certification scheme Woodsure director Helen Bentley-Fox said at the annual Argus Biomass Conference on 18 April.

The year-on-year drop in consumption may come as a result of more cautious heating behaviours by end-users, and the milder-than-expected weather over the 2022-23 heating season, Bentley-Fox said.

These volumes were destined for boilers less than 1MW and registered under the RHI.

From April-December 2022, the UK had a 67pc share of the volumes into this domestic market, up from 45pc over the same period a year before. This increase in the UK's share, and a greater share from the US, Lithuania, Estonia and Brazil, replaced the share of 45pc from Russia in 2021.

The UK premium market turned to new origins of supply last year after the **240,000t** traditionally supplied by Russia in previous years was lost following the sanctions.

By Hannah Adler

EU to support Czech biomass and waste heat gen

The European Commission has approved funding for 345MW of new biomass and waste heat generation capacity in the Czech Republic.

The €401mn (\$442mn) state aid-funded scheme is open to heat-generating units with more than 500kW of heating capacity and is intended to promote the decarbonisation of district heating systems in the country, the commission said.

Operators of facilities with a heat energy production licence that produce heat from biomass or waste – which are considered renewable sources under the EU's Renewable Energy Directive (RED) – are eligible to apply for the scheme.

Waste-powered heat generators are "required to respect the waste hierarchy principle in order to be eligible", the commission said, referring to the need for generators to consider the economic and environmental merits of their choice of feedstock.

The commission found that "as fossil fuels have a cost advantage over renewable heat, in the absence of aid, investments in new heat generation facilities would be based on natural gas, potentially without the combined production

of electricity, resulting in lower levels of energy efficiency”.

Funding will be applied as a bonus to heat generators based on each GJ of heat supplied to the distribution network, and will run until the end of 2025.

Reference to woody biomass as a non-renewable energy source was removed from a revised version of the directive (RED III) in March, after the commission, the European Council and the European Parliament reached agreement on the amended directive, [a move welcomed by the biomass industry](#).

By John Cooper

EU, Norway agree green alliance

The EU and Norway today signed an agreement on joint climate and environment action, on clean energy, hydrogen and carbon capture and storage (CCS). The agreement contains no financial commitments, nor set out any new policy.

Both sides restate common 2030 targets of cutting greenhouse gas (GHG) emissions by at least 55pc compared to 1990 levels. The two reiterate the importance of the EU's emissions trading system (ETS) while underlining the “substantial” role of carbon removals in meeting climate targets. And the EU and Norway “intend” to work to further develop CCS technologies, and to demonstrate its commercial viability and infrastructure. In Europe, Norway [is furthest ahead in terms of a commercial CCS industry](#).

Norway and the EU will also work together on raw materials and battery value chains and decarbonising transport, with a special focus on “zero GHG emission and zero pollution shipping”. Their environmental co-operation focuses on forest degradation and deforestation, as well as addressing the full life cycle of plastics. The EU and Norway will also “co-operate to support developing countries and emerging economies in the process of implementation of their climate and environment policies”, they said.

The agreement was signed by European Commission president Ursula von der Leyen and Norwegian prime minister Jonas Gahr Store in Brussels. The two met last month on Norway's Troll A platform after a joint Nato and EU taskforce. Norway has allowed [Nato to co-ordinate security](#) for its offshore energy installations.

“Europe still needs reliable and affordable supplies of gas to prepare for the next winter and the next storage filling season,” von der Leyen said. She is “particularly happy” that Norway will maintain high gas supplies to the EU and “will respond positively to the upcoming tenders”.

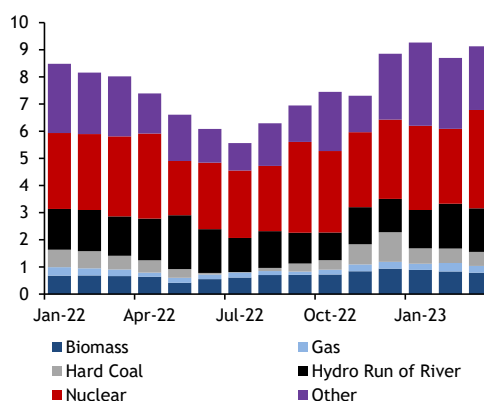
By Dafydd ab Iago

Finnish Hanasaari coal plant closes

Finnish utility Helen closed the 420MW Hanasaari coal-fired power plant in Helsinki on 1 April, according to the firm's

Finland generation mix

GW



first-quarter results.

This leaves Helen with one remaining operational coal plant, the 155MW Salmisaari coal and biomass-fired power plant. The utility in late February decided to [extend the life](#) of this unit for the 2024-25 heating season, citing security of energy supply as a reason.

Finnish coal-fired generation has averaged 0.54GW over the first quarter of this year, down by 8.5pc on the year.

The Helen-operated 1.6GW Olkiluoto 3 nuclear power plant [began regular generation](#) on 17 April, which could weigh on coal-fired generation in the months ahead.

By Evan Millard

SBP to publish new woody biomass standards

The Sustainable Biomass Program (SBP) will publish a new set of standards on 10 May, to be rolled out across Europe, southeast Asia and north America, chief executive Carsten Hujlus announced at the annual Argus Biomass Conference on 20 April.

The new set of standards will come into effect on 10 August.

Companies using the SBP certification will have 15 months to transition.

SBP is a certification scheme designed for woody biomass used in industrial, large-scale energy production. The scheme certified a combined 16mn t of wood chips and pellets in 2022, created by 251 certificate holders across 32 countries, Hujlus said.

By Hannah Adler

ENplus pellet certification to exceed 14mn t in 2023

Global production of residential wood pellets certified by the ENplus scheme is projected to surpass 14mn t in 2023, from 13.3mn t in 2022, it said on its website on Tuesday.

The 2022 volumes dropped from about 13.6mn t a year earlier, because the ENplus suspended certification for producers, traders and service providers based in Russia and Belarus from 15 April

2022 following the start of the war in Ukraine.

Germany remained the largest producer of ENplus-certified pellets in 2022, with a total of 3.5mn t, followed by Austria with 1.5mn t, and Poland, France, Spain and Belgium all with certified output in the 500,000-750,000t range each.

The scheme's growth has been driven by an increasing number of companies and countries joining, with companies in 50 different countries holding ENplus certification as of April and China being the latest country to join, ENplus said.
By Anya Fielding

EU agrees sustainable aviation fuel mandates

The European Parliament and EU member states have reached a provisional agreement on sustainable aviation fuel (SAF) mandates from 2025.

The deal, which will oblige fuel suppliers to blend certain percentages of SAF and synthetic aviation fuels, notably e-fuels and hydrogen, with jet fuel from 2025, must be formally approved by parliament's plenary, likely to be later this year, and then by EU ministers.

The 'RefuelEU' regulation will be directly applicable in all 27 EU member states and does not allow countries to set national mandates. From 2025, at least 2pc of aviation fuels must be SAFs, and this increases to 6pc in 2030, 20pc in 2035, 34pc in 2040, 42pc in 2045 and 70pc in 2050.

In addition the regulation requires a specific proportion of synthetic aviation fuels, such as e-kerosene and hydrogen, that are defined as renewable fuels of non-biological origin (RFNBO). Synthetics must reach a total share of aviation fuels of 1.2pc in 2030, 2pc in 2032, 5pc in 2035 and 35pc in 2050.

SAFs includes such synthetic fuels and also non-food and non-feed biofuels, notably from agricultural or forestry residues, algae, bio-waste, used cooking oil (UCO) or certain animal fats. Recycled jet fuels produced from waste gases and waste plastic are also included.

Parliament said provisions in the regulation will prevent tankering, or deliberately carrying excess fuel to avoid refuelling with SAFs. Airports will need to ensure fuelling infrastructure is ready for SAFs.

No cap is set on fuel suppliers meeting targets with animal fats and UCO.

The European Commission estimates the measures will cut aviation's CO₂ emissions by two-thirds by 2050 compared with a business-as-usual strategy.

By Dafydd ab Iago

Slovenia supports renewables scheme in tender

The Slovenian energy agency has announced a new public call for units that produce electricity from renewable energy

sources (RES) and high-efficiency, non-gas-fired combined heat and power (CHP) plants to enter its support scheme.

The tender is open to hydro, solar, geothermal and biogas projects with a nominal capacity up to and including 10MW, and wind farms with a capacity of up to 50MW. And in the second round of the auction, renovated RES and CHP plants may apply, as well as wood-fired biomass-fired plants which are no longer eligible for support owing to age or operating costs.

The total value of the public call is €10mn, of which €8mn will be distributed to hydro, solar, wind and biogas plants. A further €1mn will be given to CHP plants, while the final €1mn is reserved for renovated renewable and CHP projects, as well as biomass plants. Producers will receive financial support for the power produced from selected projects.

The deadline for applications is 5 June.

The energy agency announced last year that gas-fired CHPs would no longer be accepted into the support scheme because of "the expected crisis in the gas sector and the expected disruptions in future gas supply". The agency selected **43 projects with a combined installed capacity of 12.2MW** to receive support in its most recent tender.

By Matt Bowen

Ukraine plans future green energy mix

Transmission system operator (TSO) Ukrenergo plans to rebuild the Ukrainian energy system in a new and sustainable way. The plan was announced by management board member Andrii Nemyrovsky at the Ukraine energy transition forum on 21 April in London.

Russia's shelling of the Ukrainian energy system has damaged significant transformation lines, power plants and renewable generation infrastructure (*see Ukrainian Energy mix graph*). Ukraine's energy system has temporarily lost 44pc of its nuclear power generation capacity, 78pc of thermal generation, 66pc of combined heat and power plants, 12pc of hydropower, 75pc of wind and 20pc of solar generation capacity, according to its energy ministry. One of the possible variants of costs compensation for losses to private investors could be expropriated Russian assets, but this problem is still under discussion, said Maryna Denysiuk, representative of the reforms delivery office of Ukraine's cabinet of ministers.

Ukraine should start the process of reconstruction and renovation of its energy system by taking into account its current state and ecological challenges. This is important for further European integration, said Nemyrovsky. The new system should be built based on renewable generation technologies and on the replacement of old thermal power plants with new units that will use biomass, a representative of Ukrenergo added.

Ukraine aims to increase its total power generation to 176 TWh/yr from 109TWh in 2022. The country plans to

expand its nuclear generation to 99 TWh/yr from 47TWh in 2022. The 6GW Zaporizhzhia facility – the largest nuclear power complex in Europe – has been occupied by the Russian army since the invasion and stopped generating electricity in September. Ukrenergo said only 13.8GW of nuclear capacity is available now and plans to install 7.2GW initially. Ukrainian nuclear operator Energoatom plans to build 3-5 units at Khmelnytskyi nuclear power plant and to 23 small modular reactors (SMRs) in different regions to make the system more decentralised. Ukraine will need \$42.3bn to build 7.2GW of nuclear capacity. This will come from the state target programme and Energoatom’s own funds. It will also require \$4.6bn for 5GW of thermal capacity, planned to be financed by the US government’s grant funds, Development Finance Corporation’s investments and international finance institution loans. A number of photovoltaic and wind power plants of 8.3GW combined capacity will be financed by private investors and 800MW of energy storage capacities by the US government, the World Bank and the private sector (see *Future Ukrainian energy mix graph*). State-owned hydro producer Ukrhydroenergo plans to build 5-7 hydropower units at Dnistrovskya pumped-storage power plant and 1-3 units at the Kahovska pumped-storage plant, which will be financed by its own funds, loans from the European Bank of Reconstruction and Development and the International Bank of Reconstruction and Development’s, and partly by the state target programme. Ukrhydroenergo also plans to restore 1.5GW of hydro capacity that has been attacked, Ukrhydroenergo’s member of the supervisory board Nataliya Mykolska said.

Ukraine should allow for war risks before beginning any projects and such protected funds should be organised by the government or by international players, market participants said at the forum. The Multilateral Investment Guarantee Agency (MIGA) announced that it is in “functional dialogue with Ukraine” and is considering the possibility of opening such a

fund but that deals are still to be assessed in a traditional way and are not yet economically attractive, MIGA’s head of energy and extractive industries Marcus Williams said.

Ukrenergo plans to build seven new high voltage substations of 750kV-330kV, 1,350km of new power lines and restore 3,200km of existing lines by 2030 to integrate new capacities into the generation balance. It also needs to invest \$14.5mn on the development of main and distribution grids, Nemyrovsky added.
By Victoria Dovgal

Japan’s Mol diversifies marine fuel for net zero

Japanese shipping firm Mitsui OSK Line (Mol) is diversifying its alternative marine fuel options, accelerating the company’s effort to achieve its net zero Scope 1, 2 and 3 emissions goal by 2050.

Mol updated its environmental strategy last week, with its fuel transition pathway towards 2050 driven by a variety of marine fuel options, including LNG, biodiesel, methane, methanol, ammonia, hydrogen and wind power. Methane and methanol cover fuels produced from carbon dioxide and renewable-sourced hydrogen, as well as biomass.

Mol plans to deploy 90 of LNG and methanol-fuelled vessels by 2030, advancing fuel shifting from conventional bunker fuel, before non-fossil fuels, such as ammonia, hydrogen and synthetic fuels, are expanded as marine fuels. The company currently has 16 LNG-powered ocean-going ships, which include those under construction, while it operates five methanol-fuelled vessels.

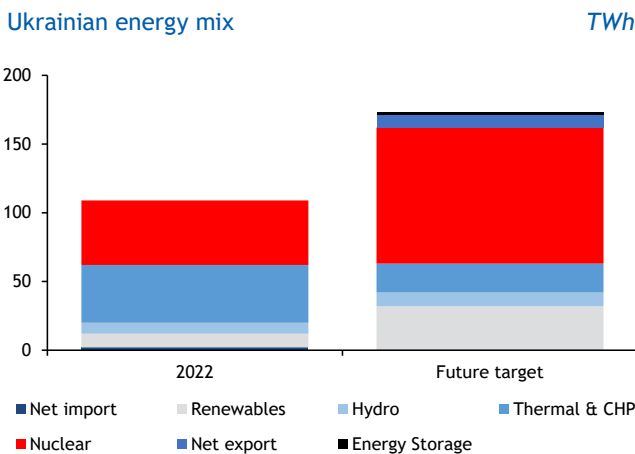
Mol is also seeking 5pc use of zero-emission marine fuels, such as clean ammonia, synthetic methanol and synthetic LNG, by 2030, and aims to operate 130 ocean-going vessels that run on zero-emission fuels by 2035.

The first net zero ocean-going vessel, which burns ammonia as a bunker fuel, is likely to be launched in 2026. Mol has already obtained in-principle approval for an ammonia-fuelled [Capsize bulk carrier](#) and a [liquefied gas carrier](#).

Mol’s wind propulsion system, known as a wind challenger, will also contribute to the company’s greenhouse gas (GHG) emission reduction plans. Mol to increase the number of ships equipped with the system to 25 by 2030, and to 80 by 2035. The first ship has already been [launched](#) in October last year for Japanese utility Tohoku Electric Power to transport coal.

The company plans to achieve net zero by 2050, by cutting 70pc of GHG emissions with alternative marine fuels, and 20pc with the wind-powered ships. The remainder 10pc is planned to be offset by joining negative emissions projects.

Japanese shipowners are accelerating the launch of new vessels to reduce GHG emissions from their ocean vessel fleets. Fellow shipping company Nippon Yusen Kaisha plans



to [commission 45 ships](#) – 31 LNG-fuelled, three ammonia-powered, eight LPG-fuelled and three methanol-powered fleets – to reduce scope 1 emissions during April 2023-March 2031.

By *Maiko Nakashima*

Colombia's Bio D to produce SAF by 2028

Colombia's largest biodiesel producer Bio D plans to start producing sustainable aviation fuel (SAF) by 2028 to supply the Bogota international airport.

Bio D would produce 50mn USG of SAF in the first year, renewable energy manager Carolina Betancourt said.

The company has looked at adding a \$700mn biorefinery to produce synthetic combustibles either at its 70mn USG/yr biodiesel plant in Facatativa, on the outskirts of Bogota, Colombia, or a plant at a greenfield site near the eastern Llanos foothills, Betancourt told *Argus* on the sidelines of a hydrogen conference in Bogota last week.

The biorefinery may need 3mnt/yr-4mnt/yr of biomass to produce SAF based on agricultural residuals including from grasslands, palm oil, coffee and eucalyptus farming. Colombia has enormous potential to be a powerful regional player in SAF as it has around 77mn t/yr of biomass from forest residues, agricultural residues and organic solids, Chilean airline Latam recently said. Bio D is working with Latam to initially build the SAF roadmap.

With SAF, each plane that takes off from the Bogota airport could reduce its emissions by at least 50pc, Betancourt added. Colombia has included SAF production as a priority in its national economic and social policy strategy (Conpes).

Feasibility studies on the projects should be approved in

six months, she said.

Bio D has also considered importing electrolyzers with capacity to produce a combined of up to 20,000t/yr of green hydrogen or buying green hydrogen from third parties.

By *Diana Delgado*

South Pole, Mitsubishi launch carbon removal

Carbon project developer South Pole and Japanese firm Mitsubishi's carbon joint venture NetxGen has launched the world's largest portfolio of carbon removal credits.

NextGen has made an advance purchase of 200,000t of credits from large-scale technical carbon removal projects registered under the International Carbon Reduction and Offsetting Accreditation programme, to kick-start its portfolio.

The purchased credits derive from Iowa-based Summit Carbon Solutions' \$1.5bn biomass carbon removal and storage project in the US midcontinent, US firm 1PointFive's direct air carbon and storage project in Texas, and climate technology company Carbo Culture's biochar project in Finland.

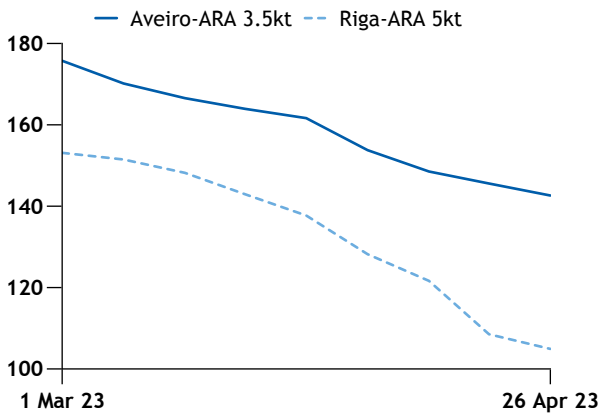
NextGen plans to sell the removal credits to corporate buyers at an average price of \$200/t CO2 equivalent, the firm said. It aims to purchase up to 1mn t of removal credits from large-scale projects by 2025.

South Pole and Mitsubishi launched NextGen in May 2022, backed by founding buyers Japan's Mitsui, US company Boston Consulting Group, insurance provider Swiss RE and banking firms LGT and UBS.

By *Nicola De Sanctis*

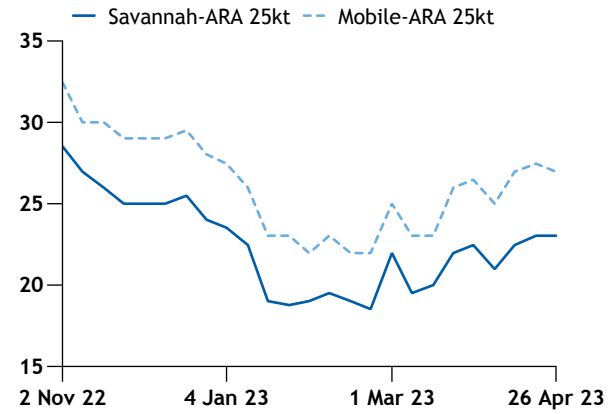
Wood pellet freight, coaster size

€/t



Trans-Atlantic wood pellet freight rates 25,000t

\$/t

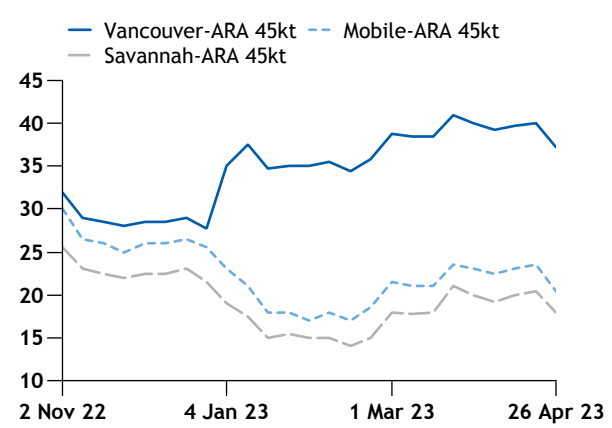


\$/€ exchange rate



Trans-Atlantic wood pellet freight rates 45,000t

\$/t



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