

MARKET COMMENTARY

Atlantic basin: Prices hit fresh highs

Spot wood pellet prices surged to fresh highs on Wednesday, as trade disruptions stemming from Russia's invasion of Ukraine added support to an already tight market.

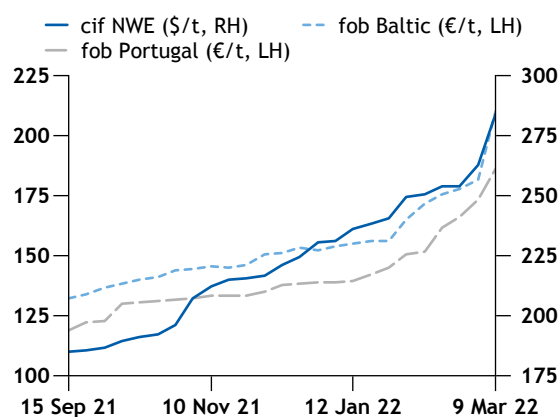
The 90-days spot wood pellet price for deliveries to northwest Europe (NWE) jumped by \$21.38/t on the week to \$284.09/t cif NWE.

Deliveries from Russia to northwest Europe continued in the week, although fewer ship owners were willing to load cargoes at Russian ports. And several large utilities have already voluntarily opted out of the Russian market for as long as the conflict continues.

Disruptions expanded further following the suspension of FSC and PEFC certification for traded wood products – including wood pellets and chips – from Russia and Belarus in the past few days, which may obstruct deliveries from these two countries to most firms in Europe as either of these certifications is a pre-condition for SBP-compliant pellets, the standard for most of the industrial pellets market in Europe.

The FSC suspension is effective from 8 April and may allow for firms to still import some Russian materials in the interim. While the SBP is yet to announce a decision on pellets sourced from Russia and Belarus. That said, some companies may continue to purchase Russian pellets regardless of the certification status, for as long as it is legally allowed to do so, a participant said.

Argus industrial wood pellet index



EUROPEAN INDUSTRIAL WOOD PELLETS

Wood pellets - within 90 days (spot)					
	Week index		Month index		
	Price	±	Feb	Jan	Dec
cif NWE \$/t	284.09	+21.38	251.96	236.38	223.16
fob Baltic €/t	210.00	+28.09	172.57	155.19	151.93
fob Portugal €/t	186.25	+12.75	157.55	141.33	137.66

Wood pellets - within 90 days (spot)		
	Price	±
cif NWE \$/MWh	60.16	+4.52
fob Baltic €/MWh	44.47	+5.95
fob Portugal €/MWh	39.44	+2.70

Wood pellets - forward prices			
	Bid	Ask	±
cif NWE \$/t			
2Q22	273.00	279.00	+38.00
3Q22	244.00	250.00	+25.00
4Q22	247.00	253.00	+20.00
1Q23	252.00	258.00	+22.00
2023	227.00	233.00	+22.00
2024	217.00	223.00	+11.50
2025	208.00	214.00	+8.00
fob Baltic €/t			
2Q22	197.00	203.00	+34.00
3Q22	167.00	173.00	+10.50
4Q22	172.00	178.00	+14.00
1Q23	177.00	183.00	+17.50
2023	177.00	183.00	+23.00
2024	164.00	170.00	+15.00
2025	157.00	163.00	+10.25
fob Portugal €/t			
2Q22	177.00	183.00	+15.00
3Q22	157.00	163.00	+5.50
4Q22	162.00	168.00	+9.00
1Q23	167.00	173.00	+12.50
2023	167.00	173.00	+21.00
2024	147.00	153.00	+6.00
2025	142.00	148.00	+3.25

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Any reduction in Russian deliveries to northwest Europe will likely not be replaced, as the market has been structurally short since the start of this winter season. Delays in pellet shipments continued, with delays from the US having exceeded four weeks, participants said. At least one European firm said they were filing a legal complaint over delays against a US producer. Participants think that at least one large US producer's volumes sold through long-term contracts exceeded actual production. And delays continued for shipments from other production regions in Europe – Portugal and the Baltics – amid raw material shortages.

Utilities could alternatively reduce biomass-fired generation or run maintenance works ahead of schedule, should they remain short of feedstock from current disruptions, participants said. And co-fired plants may also increase coal's share in the mix should there be shortages in pellets.

That said, coal prices delivered to the Amsterdam-Rotterdam-Antwerp area (cif ARA) also surged to record highs this week, supported by sharp increases in gas prices and the overall global energy complex. The Argus-assessed cif ARA coal price closed at \$416.75/t on 9 March, lifting the emission-adjusted break-even power price for a 40pc efficient unit to €196.32/MWh – the highest since Argus started assessing the cif ARA coal price in October 2001 and – well above the break-even price of €135.64/MWh for a pellet-fired unit with the same efficiency level.

Biomass burn for power in the UK dropped to 1.8GW on an hourly basis on 2-8 March, from 2.4GW a week earlier, mostly as Drax's 645MW base-load unit 2 went offline on a one-month maintenance from 5 March.

And power, coal and gas forward price curves suggest there is strong incentive for biomass-fired generation to remain strong later in 2022 in Europe, although this would depend on pellet supply availability.

Further on the upside, firming fuel prices also supported freight rates for loadings out of north America, Portugal and the Baltics, with trans-Atlantic routes seeing the sharpest increases as more and more ship owners were also heard to be avoiding trips to the Mediterranean or other European ports because of the risks related to the armed conflict in Ukraine.

Elsewhere, the fob Baltic spot price also surged on the week to reach fresh highs. Production costs in the Baltics have increased significantly compared with the start of 2022 and with a year earlier, because of higher raw material

NORTH AMERICAN INDUSTRIAL WOOD PELLETS

US fob export price (industrial wood pellets)					\$/t
Origin	Delivery period	Mid	Bid	Ask	±
fob southeast US	Spot		250.00	253.00	+14.75
fob southwest Canada	Spot		248.50	251.50	+14.75
fob northeast US	Spot	252.60			+14.90

US fob export price (industrial wood pellets)					\$/MWh
Origin	Delivery period	Mid	Bid	Ask	±
fob southeast US	Spot		52.94	53.58	+3.12
fob southwest Canada	Spot		52.63	53.26	+3.13
fob northeast US	Spot	53.49			+3.15

Wood pellets - forward prices					\$/t
	Mid	Bid	Ask		±
fob southeast US					
2Q22		242.00	245.00		+31.50
3Q22		213.00	216.00		+18.50
4Q22		216.00	219.00		+13.50
1Q23		221.00	224.00		+15.50
2023		196.00	199.00		+15.50
2024		186.00	189.00		+5.00
2025		177.00	180.00		+1.50
fob southwest Canada					
2Q22		240.50	243.50		+31.50
3Q22		211.50	214.50		+18.50
4Q22		214.50	217.50		+13.50
1Q23		219.50	222.50		+15.50
2023		194.50	197.50		+15.50
2024		184.50	187.50		+5.00
2025		175.50	178.50		+1.50
fob northeast US					
2Q22	244.50				+31.50
3Q22	215.50				+18.50
4Q22	218.50				+13.50
1Q23	223.50				+15.50
2023	198.50				+15.50
2024	188.50				+5.00
2025	179.50				+1.50

prices, stronger competition for raw material from other sectors such as pulp, paper and cardboard, and because of other rising production costs including power, gas and fuel and transportation costs. Disruptions on trade with Russia and Belarus, as well as higher prices for alternative fuels such as gas and heating oil bolstering local demand for pellets, offering further support to the export markets in the Baltics.

Pellet prices also jumped on a fob Portugal basis, as supply remains tight with raw material shortages and increasing production costs offering support.

European wood chips: Prices hold flat

The European industrial wood chip 90-day spot price held flat on the week, as trading activity remained scant with suppliers still assessing the market impact from Russia's invasion of Ukraine.

The wood chip spot market was assessed at €9.25/GJ on a cif northwest Europe (NWE) basis on Wednesday.

Consumption was strong in the week as temperatures in Scandinavia dropped marginally, supporting heating demand, while marginal supply in Europe remained tight.

An offer for wood chips delivered to a northwestern European country in March was heard in the mid-€9/GJ this week, but no deal concluded. Another offer for 3,000t wood chips for April delivery was heard at €6.66/GJ on a fob Latvia basis, and freight was thought to be around €2.8/GJ, but no trade was concluded.

It has become increasingly difficult to secure volumes as suppliers are still assessing the direction of the market following Russia's invasion of Ukraine. The sentiment is very different compared with about three weeks ago when companies could secure volumes even without a price attached, a participant said.

Shipping material out of Russia also remained a challenge for chips, as well as pellets, over the past week, as ship owners were reluctant to call at Russian ports amid worries about being implicated in sanctions or unable to be paid because of current sanctions. This has slowed deliveries, further disrupting trade.

The suspension of FSC and PEFC certification of traded Russian and Belarus wood products add to the obstacles, as consumers seeking sustainability certification for imports may become unable to purchase wood chips directly or indirectly originating from these two countries in the coming weeks.

Disruptions from the armed conflict in Ukraine could also have an impact on production in the Baltics, as some producers are thought to have secured big chunks of raw materials from Russia and Belarus directly or indirectly – through residues at sawmills that processed wood originating from these two countries, – participants said.

That said, tight raw material supply in the Baltics due to poor weather could ease in the coming weeks as forests become more easily accessible to machinery with warmer weather. This could at least partly offset a deficit in raw materials.

European buyers also have the option to source chips from other producing regions overseas, such as north and south America, by shipping them in larger vessels. But there

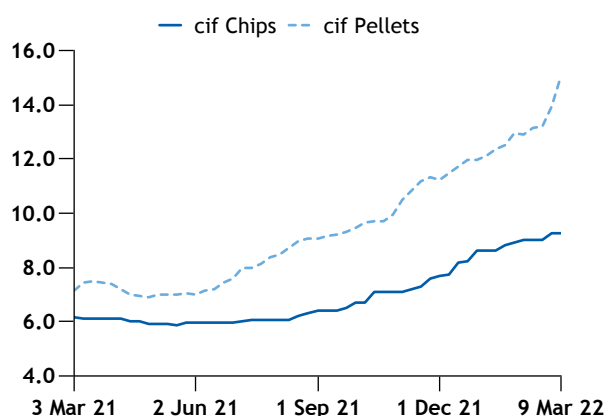
INDUSTRIAL WOOD CHIPS

NWE wood chips - within 90 days (spot)					€/GJ
	Week index		Month index		
	Price	±	Feb	Jan	Dec
cif NWE	9.25	nc	8.98	8.65	7.98

Wood chips cif NWE - forward prices				€/GJ
	Bid	Ask		±
2Q22	8.45	8.65		nc
3Q22	7.90	8.10		nc
4Q22	8.10	8.30		nc
1Q23	8.20	8.40		nc
2023	8.00	8.40		nc
2024	8.10	8.50		nc
2025	8.20	8.60		nc

Spot wood chips vs pellets cif NWE

€/GJ



will likely be no buying interest from such sources at this time, as warmer weather expected in the coming months may pare consumption and buyers could risk being left with an overhang of expensive chips at hand into the summer 2022 season, a participant said.

But should the market remain structurally short throughout the year, suppliers may secure chips from the Americas for industrial buyers which have a more stable consumption spread throughout the year, they added.

Elsewhere in southern Europe, Czech-Slovak utility EPH's 150MW wood-chip fired Provence 4 plant in Gardanne, France, extended an unplanned outage from 3 March to 14 March. The plant underwent an unplanned shutdown from 24 February, following a suspected strike from 16-18 February.

And an unplanned outage due to boiler issues at Danish utility Hofer's 150MW wood chip-fired Amager 4 plant was extended for a further five days to 14 March.

European premium: Prices stay firm

The premium wood pellet prices for delivery into northern Italy remained flat on the week, but participants expect an increase from May despite lower heating demand as the weather warms.

The 45-day spot index for bagged EN plus-certified A1-grade pellets was assessed at €307.50/t and bulk EN Plus-certified A-1 grade pellets at €270/t delivered northern Italy.

This was despite unusually cold weather – particularly with snowfall in the south – as prices have for a while now plateaued to the maximum residential users would be willing to pay for pellets.

Colder weather forecasts suggest residential demand may remain strong until the end of April. Minimum temperatures in Milan were forecast near zero degrees Celsius in the coming fortnight, or 1.2°C below seasonal norms, and at 2.6°C during 7 March - 21 April, about 1°C below seasonal norms, Speedwell Weather data show. And a cold snap was expected throughout the country in the coming week.

And unlike longer-term trends, premium pellet prices are expected to increase into the summer 2022 season, likely starting from as soon as May, a participant said, mostly because of low supply availability. Prices typically fall when the heating season ends, and most companies start replenishing their stocks during the summer season.

That said, sellers were heard to be reluctant in taking a position for pre-season sales and many have taken a wait-and-see stance, trying to understand the overall impact of Russia's invasion of Ukraine, participants said.

The armed conflict has had an immediate impact on the market – following spikes in prices for alternative heating fuels such as gas, coal and power – with inquiries for boilers having tripled in Austria compared to before the conflict started, a participant said.

The suspension of the FSC and PEFC certification for all wood products' trade from Russia and Belarus (see separate story) are also expected to result in major disruptions in Russian deliveries in the coming weeks, which could also have a limited impact on premium pellet supplies to Italy. The latter secured just 5pc of its overall wood pellet imports from Russia in 2020 and the trend remained broadly the same for most of last year, customs data shows.

But the premium market could be indirectly affected as less Russian receipts by industrial market users would offer further support to an already tight industrial pellets market and subsequently toughen competition between the industrial and premium sectors. The industrial wood pellet price for deliveries to Europe significantly closed its discount to the residential pellet market in recent weeks.

Argus Cif NWE monthly figures

	\$/t
Balance of March	300.00
April	280.00
May	280.00
June	269.70

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.

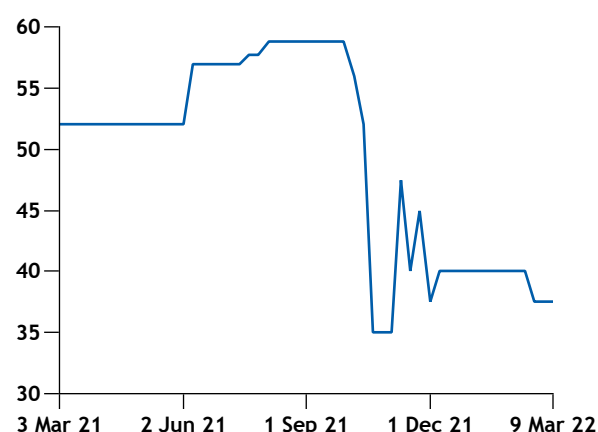
EUROPEAN PREMIUM WOOD PELLETS

Wood pellets - within 45 days (spot)				€/t
Delivered northern Italy	Mid	Low	High	±
Bulk	270.00	260.00	280.00	nc
Bagged	307.50	297.50	317.50	nc

Premium wood pellets				€/t
Delivered northern Italy	Month index			
	Feb	Jan	Dec	
Bulk	270.00	266.25	250.63	
Bagged	309.38	306.25	290.00	

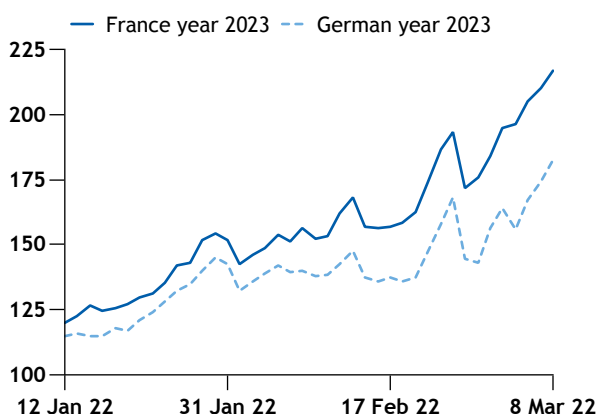
Italian premium prices: bagged vs bulk

€/t



Year-ahead base load: France and Germany

€/MWh



Asian industrial: Wood pellet, PKS prices gain

Asian wood pellet prices continued rising this week as tight supply availability combined with strong demand, supporting the market.

The fob Vietnam wood pellet spot price rose by \$6.89/t on the week to \$133.19/t as the country's supplies tightened from raw material shortages.

Recent monsoon rains and the two-week long lunar new year break limited logging and manufacturing activity in Vietnam, causing tightness in raw material availability. Vietnamese wood pellet producers were also facing feedstock competition from the wood chip and plywood industries, pushing raw material costs up.

Meanwhile, South Korean demand continues to grow from a sustained wood pellet shortage.

The cfr Gwangyang spot price for wood pellets rose by \$3.11/t on the week to \$183.86/t, as the upside from strong demand more than offset an easing in freight rates. South Korean utilities have been experiencing a shortage of wood pellets since the second half of 2021, following key supplier Vietnam's Covid-19 lockdown, which has resulted in a sharp drop in inventories.

South Korean state-controlled utility Korea South-East Power (Koen) confirmed that its tender seeking Argus-linked wood pellets closed on 3 March without awarding any contracts as all bids exceeded its price ceiling.

South Korea's REC values fell to 39,900 won/REC (\$32.44/REC) on 8 March, from W42,600/REC on 3 March, Korea Power Exchange data show.

Elsewhere, the Indonesian palm kernels shells (PKS) market firmed over the week as palm yield remained low.

The 90-day spot price for PKS on a fob east coast Sumatra basis rose by \$2.03/t on the week to \$106.80/t.

The low-yield season is expected to pick up around the end of April, defying previous market expectations of a March deadline as participants note the current season's low yield to be more severe than the previous years.

Supply chain costs are also expected to increase in the coming weeks from anticipated stronger demand in Indonesia's seaborne coal market as a result of Russia's invasion of Ukraine. Truck and barge demand are also expected to create logistical competition for the PKS market.

ASIAN INDUSTRIAL WOOD PELLETS

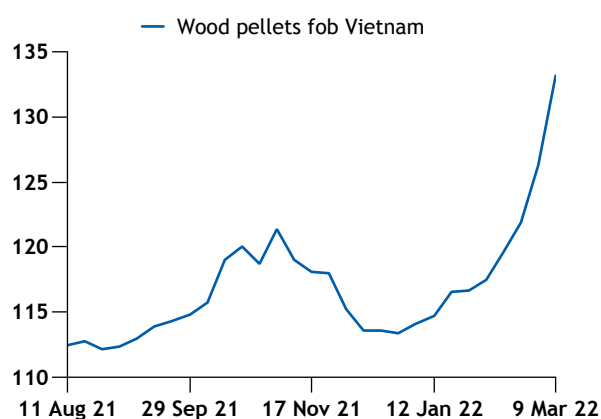
Wood pellets - 90 days (spot)					\$/t
	Week index		Month index		
	Price	±	Feb	Jan	Dec
fob Vietnam	133.19	+6.89	119.67	115.52	113.92
cfr Gwangyang	183.86	+3.11	173.78	166.67	155.58

ASIAN PALM KERNEL SHELLS

Palm kernel shell (spot)					\$/t
	Week index		Month index		
	Price	±	Feb	Jan	Dec
fob east coast Sumatra	106.80	+2.03	100.18	101.63	103.53

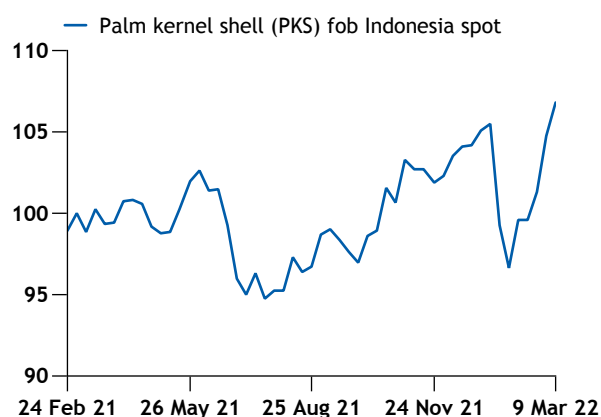
Fob Vietnam industrial pellet spot price

\$/t

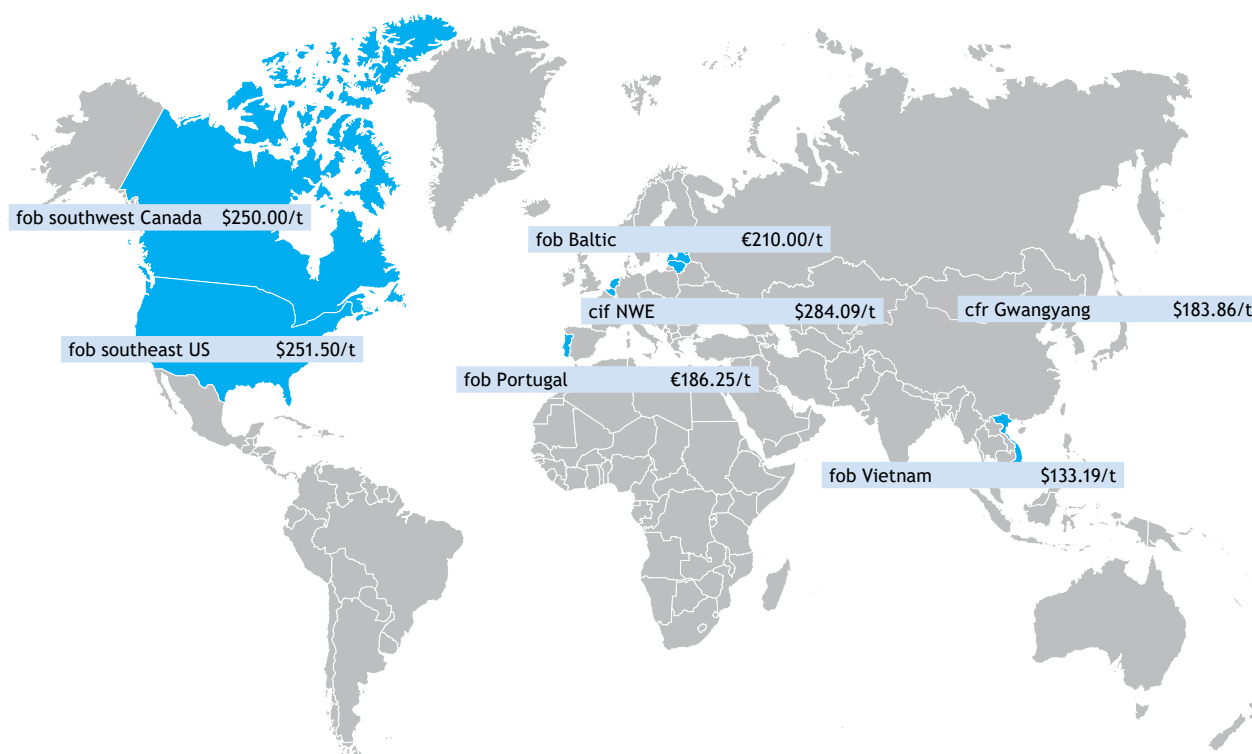


Fob Indonesia PKS spot price

\$/t



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	1,412.750
Natural gas NBP	€/MWh	Apr	207.1375
US			
Fuel oil 1% New York Harbor	\$/bl	prompt	120.125
Natural gas Nymex	\$/mnBtu	Apr	4.833
European Emissions			
CO2 EU ETS	€/t	2023	68.450

WOOD PELLET FREIGHT RATES

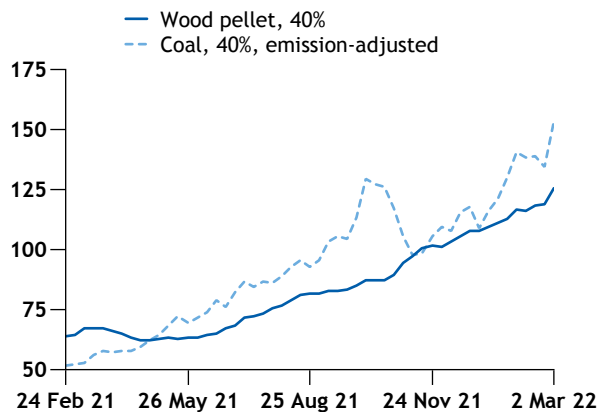
Argus wood pellet freight indications, spot cargo				
Route	Tonnage	Units	Rate	±
Aveiro-ARA	3500	€/t	42.000	+2.000
Aveiro-Copenhagen	3500	€/t	45.500	+2.000
Aveiro-Hull (UK)	3500	€/t	42.000	+2.000
Riga-ARA	5000	€/t	46.000	+2.000
Riga-Copenhagen	5000	€/t	30.000	+1.000
Riga-Stockholm	5000	€/t	27.000	+1.000
St Petersburg-ARA	3500	€/t	60.000	nc
St Petersburg-Copenhagen	3500	€/t	51.000	nc
St Petersburg-Stockholm	3500	€/t	48.000	nc
Mobile-ARA	25000	\$/t	38.000	+7.500
Mobile-ARA	45000	\$/t	34.000	+7.000
Savannah-ARA	25000	\$/t	32.500	+6.500
Savannah-ARA	45000	\$/t	29.000	+6.000
Vancouver-ARA	45000	\$/t	34.000	+6.500

BREAK-EVEN GENERATION COSTS

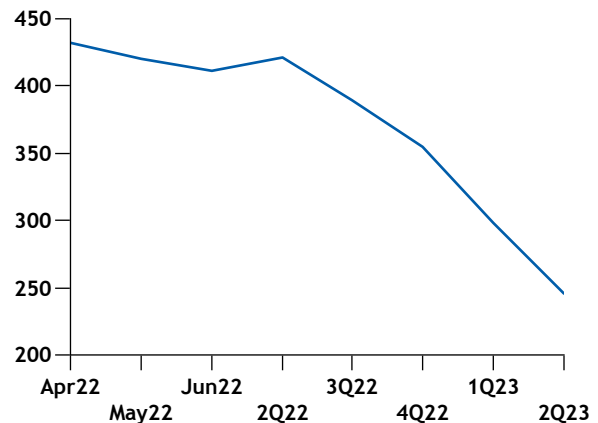
cif NWE wood pellet break-even				cif ARA coal break-even			
09 Mar		Spot	2Q22	Week average		Spot	2Q22
Pellet cost \$/t		284.09	276.000				
Plant efficiency	Unit	Break Even		Plant efficiency	Unit	Break Even	
36%	\$/MWh	167.13	162.37	36%	\$/MWh	221.53	232.34
	€/MWh	150.85	146.55		€/MWh	199.95	209.71
38%	\$/MWh	158.33	153.82	38%	\$/MWh	209.87	220.11
	€/MWh	142.91	138.84		€/MWh	189.43	198.67
40%	\$/MWh	150.41	146.13	40%	\$/MWh	199.38	209.10
	€/MWh	135.76	131.90		€/MWh	179.96	188.74
41%	\$/MWh	146.75	142.57	41%	\$/MWh	194.51	204.00
	€/MWh	132.45	128.68		€/MWh	175.57	184.13

*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 front month €/MWh



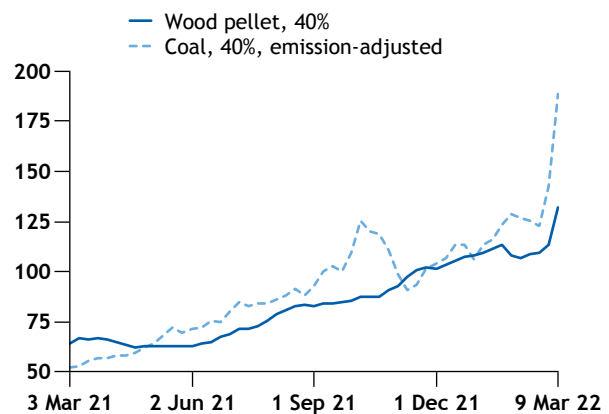
Coal Rotterdam swaps forward curve \$/t



Wood Pellet 90 cif ARA index premium to Coal API2 \$/t



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



WEATHER

European weather - Departure from normal temperatures												°C
Location	10 Mar		11 Mar		12 Mar		13 Mar		14 Mar		Precipitation (mm)	
	Avg	± normal*	Avg	± normal*	Avg	± normal*	Avg	± normal*	Avg	± normal*	5-day	15-day
UK – London Heathrow	10.9	4.0	10.0	3.0	9.8	2.7	9.1	1.9	9.4	2.1	11.6	18.4
Norway – Bergen Florida	6.9	3.4	6.5	2.9	5.7	2.0	6.7	2.9	6.7	2.8	2.9	29.5
Norway – Oslo Blindern	2.4	2.1	2.1	1.7	2.2	1.6	3.2	2.4	3.6	2.7	0.6	6.6
France – Paris Orly	10.0	3.2	11.1	4.2	11.0	3.9	10.0	2.8	10.5	3.1	12.2	18.6
The Netherlands – Amsterdam Schiphol	8.0	2.8	8.7	3.4	9.3	3.8	8.6	3.0	8.5	2.8	2.4	7.0
Germany – Essen	8.7	3.8	8.7	3.6	8.9	3.7	9.1	3.7	9.1	3.6	1.3	5.5
Germany – Berlin Tempelhof	3.8	0.0	2.7	-1.3	4.1	-0.1	4.7	0.4	5.1	0.6	0.0	2.3
Poland – Warsaw Okecie	-1.9	-3.4	-1.3	-3.0	0.4	-1.5	1.6	-0.5	1.8	-0.5	0.0	2.3
Czech Republic – Prague Ruzyně	1.5	-1.1	-0.5	-3.3	1.4	-1.6	2.0	-1.2	3.0	-0.4	0.0	2.7
Hungary – Budapest Lorinc	1.3	-3.9	0.0	-5.4	0.9	-4.8	2.5	-3.4	3.9	-2.2	0.1	3.6
Serbia – Belgrade Surcin	1.2	-4.8	-1.9	-8.2	-0.7	-7.2	0.7	-6.1	3.0	-4.0	1.5	6.9
Romania – Bucharest Imh	-2.3	-7.0	-3.4	-8.3	-1.2	-6.3	0.6	-4.7	2.2	-3.4	0.8	6.4
Spain – Madrid Barajas	9.7	0.6	9.2	0.0	8.1	-1.3	9.0	-0.5	8.4	-1.3	28.8	55.9

*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

NEWS

FSC, PEFC suspend Russian, Belarus wood certification

The Forest Stewardship Council (FSC) has suspended trading certificates in Russia and Belarus and will “block wood sourcing” from the countries for as long as “the armed violence continues in Ukraine”, it said on 8 March.

The decision is effective from 8 April 2022, the FSC said.

As a result, “wood and forest products from Russia and Belarus cannot be used in FSC products or be sold as FSC-certified anywhere in the world as long as the armed violence continues”, it said.

FSC will give forest management certificate holders in Russia the option of keeping this accreditation, but will give “no permission to trade or sell FSC-certified timber”, to continue to protect forests in Russia.

The certification body will publish further details on the implementation of this decision on 9 March, it said.

The Programme for the Endorsement of Forest Certification (PEFC) said on 4 March that all wood materials from the two countries would be considered “conflict timber” and could not be used in PEFC-certified products.

PEFC announced that all Russian and Belarusian material for which the due diligence system (DDS) has not been applied for after 2 March 11:55am eastern standard time is considered conflict timber and cannot be used in the PEFC chain of custody, or PEFC-certified or controlled sources.

Russian and Belarusian material already in storage within and outside both countries without the approved DDS will not be considered PEFC-certified.

According to PEFC’s website, 31,976,108 hectares (ha) of forest in Russia and 9,022,400ha in Belarus were PEFC certified as of 31 December – 12.5pc of the global total. There were also 104 companies in Russia and 110 in Belarus that held PEFC chain of custody certification, or 1.7pc of the global total.

Market impact

Suspension of FSC and PEFC certifications will have a large impact on wood pellet and chip flows from Russia. Accreditation from either is a precondition for the sustainable biomass programme (SBP) certification required by almost all pellet and chip consumers in northwest European – Russia’s largest market for pellets.

The SBP said on 7 March that it was closely monitoring the situation in Ukraine, but has yet to comment following the FSC and PEFC suspensions.

The European market was already tight this winter, with the conflict in Ukraine likely to remove over 2mn t/yr of material. Russia exported 2.2mn t of pellets in 2021

– 89.9pc to Europe – and Belarus exported 528,000t, with most bound for the Baltic states and elsewhere in Europe.

European consumers had already started asking producers in the US and other regions for additional spot volumes, with some companies suspending trade with Russia despite the fact that sanctions have yet to directly target the country’s energy sector. But supply is still tight, with virtually no spot availability, and many utilities could opt to reduce generation, go offline, or increase coal burn at co-firing plants.

The impact of certification suspension will also be felt in Asia, and particularly in Japan, where utilities can only burn PEFC, FSC and SBP certified pellets to take part in the feed-in-tariff programme.

Japan imported 102,212t of pellets from Russia in 2021, up from 17,369t in 2020, as the biomass market continued to expand. And although Russia provided just 3pc of the country’s biomass imports in 2021, suspension of trade with the country could tighten the market further.

By John Cooper and Deborah Sun

Drax Group halts biomass sourcing from Russia

UK utility Drax has stopped all indirect sourcing of biomass of Russian origin in response to Moscow’s invasion of Ukraine, it announced on 4 March. These were volumes sourced indirectly through third parties, accounting for less than 0.5pc of the firm’s pellet supplies, Drax told *Argus*. This would be equivalent to less than 45,000t, assuming its contracted pellets for 2022 stood flat from its total supply of 9mn t for 2021.

As well as ending the “supply of a very small percentage of Russia biomass” used at its plant in Selby, North Yorkshire, the company is working to identify any other links to Russia in its supply chain, it said.

While most of Drax’s biomass originates in North America, it also sources wood pellets from the Baltics, particularly Latvia, where 10pc of the company’s feedstock is sourced.

Some Baltic producers rely on Russia or Belarus for raw material imports and will face a cut in production from sanctions imposed on these two countries, as a result of the

Change to biomass breakeven prices calculation

Following consultation, from 9 March *Argus* is changing its calculation of quarterly breakeven power prices for biomass and coal-fired generation to align with the delivery timing of European electricity markets.

armed conflict in Ukraine.

The [full impact of the conflict](#) on the biomass market has yet to be seen, although at least some large European counterparties have voluntarily halted sourcing from Russia. Utilities have [approached](#) US producer Enviva for additional prompt volumes to compensate for the cut in Russian deliveries.

By John Cooper

EU coal could generate additional 120 TWh/yr: IEA

An extra 120TWh of annual coal-fired power generation in the EU is possible with fuel switching – if the region wishes or needs to reduce its reliance on Russian gas swiftly, according to the Paris-based IEA.

Based on Argus calculations, this 120TWh implies around 43mn t of additional coal imports a year, assuming NAR 6,000 kcal/kg material is burnt in 40pc-efficient plants. More would be required if imports are of a lower calorific value.

The EU 27 and UK imported a net 66.7mn t of coal in 2021, of which 45.4mn t was from Russia, Eurostat data show.

The IEA did not state where the additional coal might come from and had not responded to requests for comment by the time of publication.

Spot coal prices are currently at record highs, with some European buyers moving to procure more cargoes from sources other than Russia, including Indonesia, South Africa, Colombia and the US.

Assuming the additional coal is not produced domestically or procured from Russia – so as to effectively substitute Russian gas imports for coal imports – this would in effect require an additional 88mn t of non-Russian imports to be found at short notice, assuming Europe were to completely replace existing Russian supply.

“We estimate a temporary shift from gas to coal or oil-fired generation could reduce gas demand for power by some 28bn m³ before there was an overall increase in the EU’s energy-related emissions,” the IEA said, presenting a 10-point plan to reduce the EU’s reliance on Russian gas.

“The larger share of this potential decrease in gas demand would be possible through gas-to-coal switching: an additional 120TWh in coal-fired generation could cut gas demand by 22bn m³ in one year,” the agency said.

This fuel-switching mechanism is one option presented by the IEA if its initial 10-point plan falls short.

The agency said implementation of its 10-point plan could replace around a third of the region’s gas imports through measures such as accelerated deployment of wind and solar, and higher nuclear and biomass-fired generation. It also calls for consumers to turn down thermostats and for

enhanced energy efficiency in homes and businesses.

By Alex Thackrah

Ence's biomass energy sales jump in 4Q

Spanish pulp and bioenergy company Ence's biomass-fired power sales jumped in the fourth quarter owing to higher capacity utilisation and the return of one of its plants on line after a six-month shutdown.

Total biomass-fired power sales rose to 428GWh in October-December, up by 83.2GWh from the third quarter – mainly due to the return of the 50MW Huelva biomass plant after being off line in the previous two quarters due to a defective generator – and up by 10.8GWh from over the same period on the year. Total energy sales for 2021 were up on the year by 68.6GWh to over 1.4TWh.

Sales from the 27MWh Cordoba plant were also down on the quarter and on the year in October-December, as the plant was taken off line for maintenance, the firm said.

Plant name	Capacity	GWh				
		2020	2021	Q3 2021	Q4 2021	Q4 2020
Huelva	41	106.7	193.2	52.9	54.5	53.9
Jaén	16	88.6	92.0	23.3	25.1	17.9
Ciudad Real	16	81.7	101.6	25.8	26.3	25.4
Córdoba	27	196.4	183.5	49.3	39.6	48.0
Huelva	50	330.6	125.9	0.0	86.5	98.3
Mérida	20	147.9	151.9	41.7	39.0	37.1
Huelva	46	214.4	293.1	75.8	80.9	69.3
Ciudad Real	50	195.4	288.9	76.0	76.0	67.2
– Ence						

Ence operates eight biomass-fired power plants across Spain, with a total capacity of 266MW. And it has three biomass-fired plants with a combined capacity of 140MW in the pipeline, expected to become operational soon, it said.

The average sales price, which typically reflects the Spanish power exchange day-ahead price, fell to €63.70/MWh (\$70.66/MWh) in October-December from €94/MWh a year earlier, despite an increase in market prices, because most of the sales were locked into contracts at fixed prices, it said. But the firm has not hedged any of its pulp or power for 2022 last year and expects to “benefit in full from high prevailing pulp and power prices” this year, it added.

Ence consumed more than 1.9mn t of biomass for power generation in 2021 – worth over €76mn – from 1.8mn t a year earlier. The firm sources biomass locally – from Galicia, Asturias, Cantabria and Andalusia – as well as Portugal.

All of Ence’s facilities were issued with SURE certification on sustainability requirements established for biomass in the

EU's renewable energy directive (RED II) in 2021.

By Hannah Adler

Swiss premium wood pellet prices reach record high

Switzerland's premium retail wood pellet price saw a record year-on-year rise in February, reaching its highest since records began in 2006, federal statistics office data show.

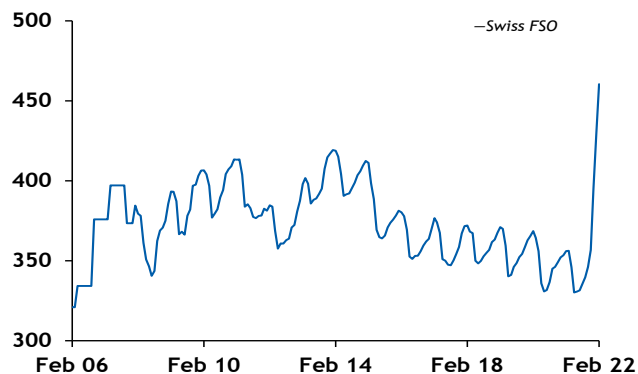
The average price of a typical 6t delivery of premium wood pellets rose by 104.38 Swiss francs/t (\$113.39/t) on the year to SFr460.43/t in February, driven by strong domestic and international demand, despite milder weather.

Swiss prices have risen sharply this winter, having increased by SFr103.60 since November, as pellet plants have faced higher production and transportation costs, and bottlenecks in raw materials as demand rose significantly. Similar fundamentals have prevailed in the industrial pellets segment, with prices rising to levels that could compete with the premium sector.

Residential use has been strong in central and southern Europe this winter, following [record sales of new pellet-fired stoves and boilers](#) as pellets maintained their cost advantage over competing fuels. Neighbouring [Austria](#) and [Germany](#) have also seen record prices in January and February, although pellet values have not spiked to the same extent as the price of alternative heating fuels such as gas and power.

Swiss premium pellet price

SFr/t



The overall additional demand from increased stove and boiler sales across Europe in 2021 is estimated to be well over 1mn t/yr.

Upside from the sharp increase in the number of residential users more than offset the impact of milder weather in February. The number of heating degree days (HDD) in Zurich fell to 369.4 in February from 383.9 a year earlier. This was also well below the 10-year average for the month of 419.6. And overnight temperatures in Switzerland

in February averaged 1.16°C, or 2°C above seasonal norms, up from 0.4°C a year earlier.

By John Cooper

Albioma to restart Canadian pellet plant in 2H22

French energy firm Albioma plans on restarting its Canadian [La Granaudiere](#) wood pellet plant in the second half of this year.

The SBP-certified plant, which Albioma acquired last year, is expected to be recommissioned after further investments. It will have 45,000t of storage space at the port of Quebec and is guaranteed raw material supply, Albioma said. Production will be used to ensure feedstock supply to the group's Caribbean power plants, it added.

The acquisition will help the firm in its move away from the mostly burned feedstock bagasse – the residue from sugar cane.

Albioma's biomass-fired power generation fell slightly on the year to just under 1.9TWh in 2021, mostly because of lower output at co-fired plants owing to the unusually high

Albioma plants			MWh
Name	Capacity	Location	Year installed
Le Moule	102	Guadeloupe	1998
Galion	40	Martinique	2018
Vale do Parana Albioma	48	Brazil	2020
Terragen	70	Mauritius	2000
Bois Rouge	108	Reunion Island	1992
Le Gol	122	Reunion Island	1995
Saint Pierre	41	Reunion Island	2009
Esplanada	65	Brazil	2002
Codora	72	Brazil	2011
Savannah	90	Mauritius	2007
Albioma			—

Argus successfully completes annual losco assurance review

Argus has completed the ninth external assurance review of its price benchmarks covering crude oil, products, LPG, petrochemicals, biofuels, thermal coal, coking coal, iron ore, steel, natural gas and biomass benchmarks. 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>

coal and CO2 prices during the year, Albioma said.

Biomass burn for power in Brazil rose to 594GWh in 2021 from 373GWh a year earlier. And the firm hedged just over 90pc of its power sales in Brazil through medium and long-term contracts for five years starting in 2022.

Albioma operates a combined 889MW of biomass-fired generating capacity in French overseas territories and Brazil, and its feedstock consists primarily of bagasse, as well as other local biomass sources and imported wood pellets.

The conversion of the 60MW Bois-Rouge power plant on Reunion Island in the Indian Ocean to 100pc biomass is still on schedule for completion by the end of 2023 and will only consume locally sourced biomass and imported sustainable wood pellets, Albioma said.

And the French Energy Regulation Board validated the conversion of the 122MW Le Gol power plant – also on Reunion Island – to run on 100pc biomass earlier this year, with operations under state-backed support extended until 2044.

By Hannah Adler

Hungary announces sixth renewables tender

Hungary today announced its latest renewable support tender, which for the first time will require bidders to also install battery storage capacity.

Energy market regulator Mekh invited offers for up to 864 GWh/yr of renewable output in its latest tender, including up to 144 GWh/yr from smaller developments with a capacity of 5-20MW and up to 720 GWh/yr from bigger projects of 20-50MW.

The total limit is down from 870 GWh/yr in the previous tender, which [attracted biomass-fired and hydro projects](#), but is up from 200 GWh/yr, 390 GWh/yr and 300 GWh/yr, respectively, in the first three tenders that were dominated by solar in 2019-21.

The maximum value of support in the new tender will be cut to 1 forint/yr in both categories. [None of the winners required effective premiums](#) in the most recent tender dominated by solar projects, leaving this Ft450mn/yr subsidy budget fully unused.

The price ceiling for bids will be set at Ft27/kWh in the 5-20MW capacity category and Ft25/kWh in the larger 20-50MW category. Average offered prices and winning bids fell in each of the past tenders, which attracted mostly solar projects in 2019-21.

The new tender will require bidders to install batteries with a capacity reaching at least 10pc of the planned capacity of the generation unit, or a minimum of 1 MWh/MW. This requirement should help integrate renewable units

into the power system, Mekh said.

Developers will have only four days in which to submit offers, to be accepted on 25-28 March. Future winners will be required to launch commercial operation within three years.

Mekh has allocated support for 169 projects in total in its tenders since 2019, including about 160 solar developments. The winning projects will have a combined capacity of more than 660MW and would produce a total of more than 1.7 TWh/yr once completed.

By Béla Fincziczki

Massachusetts revisits RPS biomass changes

Massachusetts regulators are again moving to update rules governing biomass projects in the state's renewable portfolio standard (RPS) after state officials sent back the guidelines on procedural grounds.

The Department of Energy Resources (DOER) is opening up a new rulemaking to publish updated guidance on biomass project eligibility in Class I of the RPS after Massachusetts' secretary of state determined a new proceeding would be necessary to implement the updates.

DOER on 4 March said the new rulemaking process, which will include the previous biomass updates as well as new changes to Class I RPS guidance in light of the [more aggressive program targets](#) enacted last year.

The changes, which DOER had deemed "phase 2" of its planned updates to the program, had been scheduled to take effect in November.

For the first part of the new rulemaking, DOER left the new biomass regulations [mostly as originally proposed](#). Biomass facilities that come on line in 2021 or later will have to meet a 60pc overall efficiency requirement, regardless of their feedstock, to generate Class I renewable energy certificates (RECs).

Regulators did tweak a provision that disqualifies biomass projects located in or within 5 miles (8km) of an "environmental justice population" from eligibility as Class I REC generators, granting an exemption for facilities that began operating before 2022.

DOER also added changes to the RPS regulation to align the scheduled targets with last year's legislation, which raised the annual rate of increase for REC obligations applied to utilities. The annual increase jumps to 3pc/yr from 2025-29 from the current 2pc/yr rate.

Overall, utilities must now use resources like wind, solar and qualifying biomass for 40pc of their retail sales by 2040, as opposed to the previous 35pc.

DOER will hold a virtual public hearing on the rules on 29 March to gather feedback from stakeholders, and regulators

will accept written comments until 1 April. Comments filed for the "phase 2" biomass updates do not need to be re-submitted, as DOER will roll them into the new rulemaking.
By Patrick Zemanek

Maryland lawmakers mull biomass future in RPS

Lawmakers in Maryland are mulling proposed changes to how the state's renewable portfolio standard (RPS) treats biomass, including potentially removing it from the list of eligible generators outright.

Lawmakers are reviewing two proposals, one of which, HB 11, would eliminate resources like biomass, poultry waste and waste-to-energy from the list of qualifying generators of Tier I renewable energy certificates (RECs) in the state's RPS program. In doing so, the bill, which would take effect in 2023, would eliminate resources that supplied roughly a quarter of the RECs retired toward compliance in 2020.

The other bill, HB 1085, would revise the definition of biomass sources that count toward the RPS.

The House Economic Matters Committee held a hearing on both bills on 4 March.

State delegate and HB 11 sponsor Vaughn Stewart (D) said that "most, if not all, of the facilities" that would be affected by his proposal would "survive without subsidies."

"We are not talking about whether they should exist," Stewart said. "We are talking about whether they should get extra credit. Subsidies for energy from trash or poultry litter can actually incentivize the creation of more waste because you need more waste to fuel these facilities."

Stewart said that utility customers would see little, if any change, to their monthly bills.

Due to the "alternative RECs available" to replace those sources, the Department of Legislative Services, which conducts research for lawmakers, predicts minimal effects on REC prices.

"Most likely, the state will continue the multi-year trend of increased reliance on wind RECs to meet RPS requirements with negligible impacts on REC prices," Legislative Services said. "As a result, the bill likely has a minimal impact on compliance costs and, by extension, a minimal impact on customer electricity rates."

HB 11 faces staunch opposition from biomass and forestry groups, as well as waste-to-energy project owners. Biomass advocates argued that the bill ignores the natural carbon cycle, as the CO₂ released when plant matter is burned would also be released during a plant's decomposition, but without the benefit of harvesting energy from it.

Waste-to-energy has long been a battleground for

Maryland lawmakers on [both sides of the aisle](#), who have tried and failed to remove it from the list of Tier I REC producers a number of times amid pushback from project owners, who say that RECs help keep them economical.

WIN Waste Innovations and Covanta, each of which own projects receiving RECs from Maryland, spoke against HB 11 at the hearing.

The other bill, HB 1085, would update the existing definitions of "qualifying biomass" to include silvicultural products, a category that under Maryland law includes timber, timber products and "any other forest materials" like lumber, pulpwood and pine straw. It would also add "natural wood waste," which encompasses an array of potential fuels from tree stumps to leaves to grass clippings.

It would stop mill residue and certain wood industry byproducts from generating RECs, while easing certain restrictions on thermal biomass fuels.

State delegate Jason Buckel (R), the bill's sponsor, said it would help create a market for biomass heating, which could replace outdated systems fired by fossil fuels like coal.

By Patrick Zemanek

Prince Rupert may expand container capacity

The Port of Prince Rupert in British Columbia is considering doubling its container capacity, a move that could enable Canada's third largest port to increase trade with Asia-Pacific markets.

The Prince Rupert Port Authority has entered into a two-year agreement with logistics group DP World to study the feasibility of adding up to 2mn twenty-foot equivalent units (TEUs) of capacity by building a new container terminal. TEUs are used as a measure of container volume because sizes differ.

"A second container terminal will help consumers, exporters and industries across the country, while continuing to contribute significant economic benefit for local communities, the broader region and our Indigenous partners," port authority chief executive Shaun Stevenson.

The project will focus on the steps necessary to reduce environmental and community impacts, improve the resilience of Canadian supply chains and integrate the expansion into the port's intermodal network.

The existing Fairview container terminal at the port is already being expanded. The first phase of the project will expand the facility to 1.6mn TEUs. Work on that phase is half completed and should be finished in July 2022.

The second phase of the Fairview expansion will grow capacity to 1.8mn TEUs. That part of the project is expected to be complete in late 2024.

Prince Rupert cargo volume in January dropped by 40pc compared with the same month in 2021. Container volume at the Fairview terminal fell by 22pc compared with January 2021. Coal and grain shipments dropped by 58pc and 60pc, respectively.

Wood pellet volume at the Westview terminal rose by 25pc compared with January 2021.

By Abby Caplan

Japan's Obayashi starts up Kamisu biomass power plant

Japanese renewable power developer Obayashi Clean Energy has begun commercial operations at its new biomass power plant at Kamisu, located in the Ibaraki prefecture.

The 51.5MW Kamisu biomass power plant started generation last month, using imported wood pellets as a main fuel and palm kernel shells as a partial feedstock, Obayashi Clean Energy – a wholly-owned subsidiary of Japanese construction firm Obayashi – said yesterday.

The company will sell electricity produced at Kamisu under the country's feed-in-tariff scheme at a fixed price over 20 years.

This is Obayashi's second biomass power plant, following a 14.5MW project at Otsuki in Yamanashi prefecture, and has helped increase the company's total renewable output capacity to around 205MW. It also operates 28 solar power farms and one wind power facility, apart from the biomass plants.

By Motoko Hasegawa

Japan's NYK-Idemitsu lifts biomass power efficiency

Japanese joint venture NYK Idemitsu Green Solutions said it has achieved increased fuel efficiency in burning white pellets at a coal-fired power plant by using a boiler control optimisation system.

NYK Idemitsu Green Solutions, which is owned by shipping firm NYK Line, its trading arm NYK Trading and domestic refiner Idemitsu with an undisclosed shareholding ratio, has installed the new system at a Shin-Onoda coal-fired power plant operated by utility Chugoku Electric Power. The advanced technology has ensured a 1pc reduction in coal consumption while mixing around 8pc of white pellets on a calorific basis, which helps cut carbon dioxide (CO₂) emissions by around 30,000 t/yr, the company said.

The control system incorporating artificial intelligence has resolved challenges Chugoku has so far faced in using white pellets that typically caused reduced thermal efficiency.

The Shin-Onoda power plant consists of two 500MW

coal-fired generation units. Chugoku started burning wood chips from August 2007 and wood pellets from August 2022 to help reduce the firm's greenhouse gas emissions. The utility aims to cut CO₂ emissions by 50pc based on April 2013-March 2014 fiscal year levels by 2030-31.

By Mariko Imai

Japan's Chubu starts building new biomass power plant

Japanese utility Chubu Electric Power has begun construction of the 7.1MW biomass power plant at Minokamo in central Japan's Gifu prefecture, taking advantage of the country's feed-in-tariff (FiT) scheme.

The Minokamo biomass power plant – which is 40pc owned by Chubu, 30pc by local forestry firm Sago and 30pc by Japanese finance firm Mitsubishi HC Capital – is scheduled to start commercial operations in October 2023.

The new power plant is designed to burn an unspecified volume of wood chips, made mainly from locally-supplied unused timber from forest thinning. Electricity produced at the site will be supplied to the local grid firm Chubu Electric Power Grid at fixed prices for 20 years under the FiT system.

Chubu has been gearing up to develop biomass power plants to help cut greenhouse gas emissions. The company is also part of a joint venture to build the [52.7MW Fukuyama biomass power plant](#) in western Japan's Hiroshima prefecture. The plant aims to begin commercial operation in May 2025.

By Mariko Imai

Japanese firms to build Fukushima biomass power plant

Four Japanese companies are planning to jointly build a 7.1MW biomass power plant at Aizu in the country's northeast Fukushima prefecture, taking advantage of the country's feed-in-tariff (FiT) scheme.

The Aizu Komorebi power plant is scheduled to start commercial operations in December 2024. The project is 40pc owned by Japanese trading firm Tokyo Sangyo, 40pc by engineering firm Tokyo Energy & Systems, 15pc by renewable power developer Shichijo and 5pc by pulp and paper manufacturing firm Hokuetsu.

The plant is designed to burn around 80,000 t/yr of wood chips made from local unused woody biomass and construction wastes. It will pay ¥24/kWh for unused woody biomass and ¥13/kWh for construction wastes under the FiT scheme, according to Shichijo.

Electricity produced at the site will be sold to regional power grid firm Tohoku Electric Power Network at an unknown fixed price for 20 years under the FiT scheme.

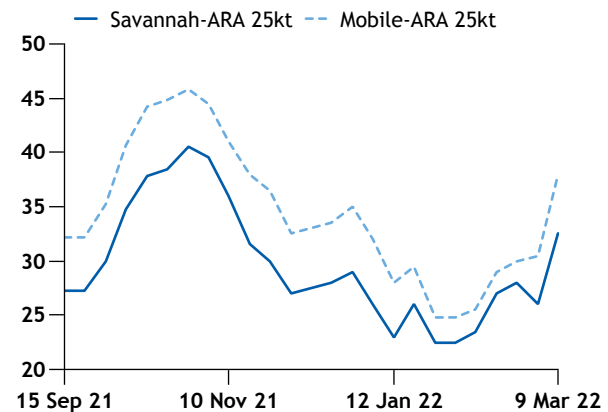
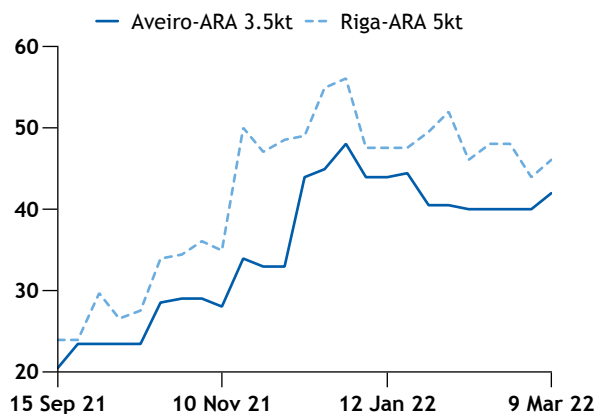
By Mariko Imai

Wood Pellet Freight

€/t

North America wood pellet freight 25,000t

€/t

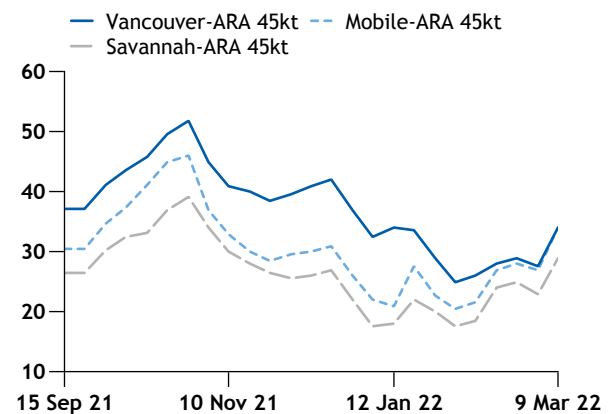


\$:€ exchange rate



Wood Pellet freight 45kt

\$/t



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Bioenergy
illuminating the markets

