

The Marketplace for PRNs

Market Status Report *By Tom Rickerby, Head of Business Development*



It's been a bruising early trading period for producers as uncertainty and negative sentiment in recycling markets have continued to fuel high PRN prices. However, the release of strong Q1 data has brought a timely dose of quantitative easing to counter the bullish outlook. Strong results in Wood, Glass and Steel have seen prices in all 3 materials converge on the weakened Paper/General Recycling price. Record high Plastic prices will continue to take the headlines though, as cash flow pressures become a defining feature of the 2019 compliance market.

406,635 tonnes traded on t2e during the period, up 5% on the previous quarter and 62% on the same period last year. 218,844 tonnes were traded in the Spot market and 187,791 tonnes in the Forward markets.

Paper

Despite record opening PRN prices, the early trading period in Paper was distinguished by a collective bullishness amongst sellers. China's tapering demand in preparation for a controversial import ban in 2020 looms large over a market that remains low on confidence and high on uncertainty. The result has seen sellers take a far more cautious approach to PRNs. Less than 15,000 tonnes were traded in the opening month of the quarter across all markets, as sellers showed a staunch resistance to supporting the opening prices of £15.00 per tonne. March saw the start of upward price movement within the Paper market, increasing 55% to a quarter high of £22.50 by the end of the month. However, a strong Q1 return has dampened sellers' ambitions with spot prices retracing to £17.00 by the quarter close. The average Paper spot price is up 452% and volume was up 73% on the same period last year.

Plastic

The severity of price rise in Q1, given the record high opening prices and lack of data will have unsettled even the most hardened of Plastic traders. Whilst the first month saw trading open in restrained fashion (prices drifted up 4% to £116.00 during this early period), by March, fierce buying competition in the Spot market was beginning to drive daily price increases. Trading momentum gathered pace by mid-quarter and at the release of the Q1 data, prices had strengthened by 53% to £170.00. Whilst, unsurprisingly, the data confirmed a market in short supply, the reaction was muted. Spot prices briefly rose to a record high of £185.00 but retraced to close the quarter at £180.50. The subdued response may suggest that buyers have a limited appetite in driving prices unnecessarily higher, as cash flow pressures increase and with limited evidence to suggest higher PRN values are resulting in increased plastic recycling in the current climate.

Wood

It's been a difficult opening quarter for the Wood market as the narrative has swung definitively from a seller's to a buyer's market. The early period saw sellers establish better value in the evidence note following the soft finish to the 2018 market, a price adjustment justified by another significant hike in the recycling target. Prices climbed 34% to £47.00 by early March. However, signs of strong supply in the monthly data were beginning to reflect in a market picture characterised by strong supply and a distinct lack of buying support. A price correction looked inevitable and by April, all early price gains had been surrendered. Confirmation of a strong Q1 (Wood PRN generation is at its highest level since Q2 2011) sent price tumbling again towards the General Recycling price. Traded volume in Wood was up 27% on the same period last year.

Glass

Glass prices have rarely stood still for long in the past 8 months as the market struggles to find stable trading parameters following a highly volatile close to the 2018 market. A strong correlation between the higher PRN price and a resurgent Aggregate supply has taken a lot of the early heat out of the Glass market. Seller's attempts to maintain prices in the high £20s found few early takers and the market quickly succumbed to increasing downward price pressure. Remelt PRN prices fell 11% from £27.00 to £24.00, however a sudden spike in the Paper/General price spooked the Glass market and sent prices retreating to £26.50 in the Spot and Forward Markets. The rebound was short lived. Confirmation of a consecutive strong quarter return in Glass Other (more than double the same period last year) sent prices on a trajectory towards General Recycling, matching the price correction in Steel and Wood. Glass Other prices fell further to £19.50, re-opening a 50p price differential on the Remelt price at the quarter close.

Steel

The Q1 Spot Steel price has tracked the rise of the Paper/General value, increasing 43% to £25.00. However, whilst still in surplus, the early data suggests a supply / demand picture that

is becoming increasingly balanced. With Steel Carry-in tonnage at its lowest level for a decade, target driven demand growth and a supply side that looks vulnerable to Brexit, trade wars and a more uncertain global economic outlook, Steel PRN prices may take a less predictable course this year. Spot prices remained firm following the release of Q1 data, although Forward prices dipped 12% to £22.00, in-line with the General downward trend. Traded volumes were down 17% on the same period last year.

Aluminium

Alongside Plastic, Aluminium is rapidly becoming the PRN market's next largest compliance risk. Early data indicators show a concerning supply deficit in Q1 (in year generation is down 11% to target) reflected by poor selling liquidity on t2e. Prices rose 40% to a quarter high of £105.00 per tonne during the period – the highest opening prices since 2006.

Recovery

In the PRN markets, Recovery remains a small island of low-cost predictability in a sea of turbulent change. A 13% surplus in Q1 has already placed Recovery on course for a fourth consecutive year of sub £1.00 trading. Traded volumes were down 70% on the same period last year but pricing trends remain the same with smaller volumes trading at £0.90 – £0.95 and larger volume attracting the lower price of £0.60.

	High	Low	Traded this Quarter	Quarterly Average Price	YTD Average Price	Total Volume
Paper						
Spot 2019	£22.50	£14.50	85,728	£19.17	£18.27	103,043
APR Forward 2019	£22.00	£14.50	21,000	£19.02	£18.40	28,500
JUL Forward 2019	£21.00	£17.00	40,000	£19.63	£19.65	42,500
OCT Forward 2019	£20.50	£20.50	5,000	£20.50	£20.50	5,000
DEC Forward 2019	£20.50	£20.50	8,000	£20.50	£20.50	8,000
Plastic						
Spot 2019	£185.00	£111.00	74,666	£148.52	£143.09	85,509
APR Forward 2019	£155.00	£155.00	2,000	£155.00	£133.22	2,950
JUL Forward 2019	£184.00	£162.50	4,000	£179.79	£179.79	4,000
Glass Other						
Spot 2019	£27.00	£19.50	2,373	£21.49	£25.00	4,759
APR Forward 2019	£27.00	£23.00	10,800	£25.61	£29.16	20,800
JUL Forward 2019	£26.50	£19.50	7,500	£24.27	£24.27	7,500
OCT Forward 2019	£26.50	£19.50	6,000	£25.00	£25.00	6,000
DEC Forward 2019	£19.50	£19.50	1,000	£19.50	£19.50	1,000
Glass Remelt						
Spot 2019	£28.00	£20.00	18,675	£24.98	£25.59	23,024
APR Forward 2019	£28.00	£24.00	11,300	£26.57	£29.93	32,300
JUL Forward 2019	£26.50	£20.00	24,450	£23.95	£23.72	26,450
OCT Forward 2019	£26.50	£20.00	14,500	£25.60	£25.60	14,500
DEC Forward 2019	£26.50	£20.00	5,500	£24.14	£24.14	5,500
Steel						
Spot 2019	£27.00	£17.50	7,063	£20.22	£19.97	7,540
JUL Forward 2019	£25.00	£21.00	7,500	£24.33	£22.89	9,500
OCT Forward 2019	£25.00	£22.00	2,500	£23.60	£23.60	2,500
DEC Forward 2019	£22.00	£22.00	1,000	£22.00	£22.00	1,000
Wood						
Spot 2019	£47.00	£20.00	17,179	£37.76	£36.80	19,214
APR Forward 2019	£45.00	£40.00	3,500	£42.14	£59.44	14,400
JUL Forward 2019	£40.00	£20.00	6,326	£33.44	£50.29	13,576
OCT Forward 2019	£40.00	£20.00	5,415	£34.77	£54.38	15,415
Aluminium						
Spot 2019	£105.00	£75.00	1,049	£86.31	£85.83	1,779
JUL Forward 2019	£100.00	£100.00	500	£100.00	£100.00	500
Recovery						
Spot 2019	£0.95	£0.60	12,111	£0.69	£0.68	13,641

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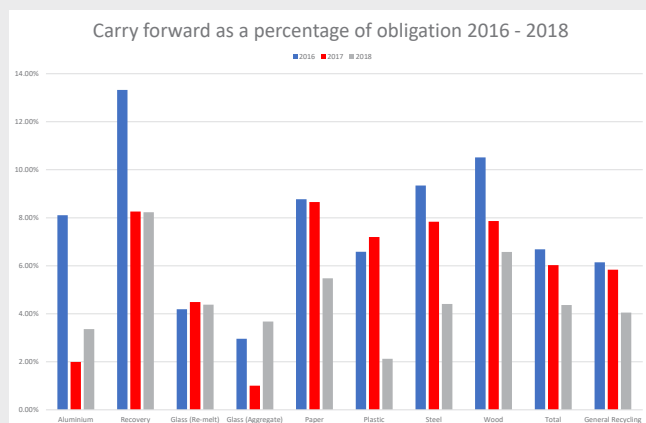
Managing Director's Comments – May 2019



To say the outlook looks uncertain is probably an understatement. Not only has the Brexit debate neither come to a conclusion nor a clear destination but also there have been not one but four linked concurrent consultations on Extended Producer Responsibility in a variety of guises. At a total of 491 pages, the sheer volume of work has to be admired as has the enthusiasm of DEFRA to explore every available option under Article 8a of the Revised Waste Directive. Against such a background the PRN market has been challenging but relatively smooth running, although storm clouds may be gathering ahead. Meanwhile the publication of both the final figures for 2018 and Q1 figures for 2019 allow an assessment of the outcome of last year and an initial prediction for this.

2018 Compliance

Despite all the uncertainty in 2018, the highest level of UK reprocessing was achieved since 2011, an unusual year, and prior to that, 2008. This was driven by strong growth in Plastic, Glass, predominantly Aggregate, Steel and Wood. At over £130 million it was the most expensive year for compliance to date. With the benefit of hindsight those that bought forward in 2017 did very well, whereas those that held out to the end found the cost of compliance had increased significantly on previous years. Despite concerns, 2018 compliance was achieved, a record tonnage, with a small margin of surplus, although the carry forward into 2019 once again reduced. This put substantial pressure on General Recycling which continued to the year end to hold up material specific prices.



2019 Compliance

After 2018's record recycling year, prices have opened high as much needed momentum has been maintained. The consequence has been the second highest PRN producing quarter on record with Q4 2018 being the greatest. Despite this, there is no room for complacency as targets once again increase with Aluminium and Plastic looking challenging, while the doldrums in the Steel industry may make it a much smaller contributor to General Recycling. Currently the shortfall

is being replaced by Wood but if Wood PRN prices continue to fall, tonnage may well leak to RHI with a consequent squeeze both on availability and price. Although new export markets have been found for mixed paper and plastics they look far from robust with consequent risks as the year progresses.

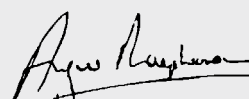
HM Treasury and DEFRA Consultations

While the Government's enthusiasm to explore every option is admirable, it creates uncertainty of their ultimate ambitions. Despite much speculation that the death knell has been sounded on the 'PRN system', closer inspection reveals that radical reform requires the continuation of an evidence system to prove that Government and industry have reached their targets. A role already filled by the PRN. Deposit schemes, packaging tax and eco-modulation are being explored to increase recycling levels. All have their merits but should be used for encouraging those packaging materials that are struggling to reach targets: composite; multi-material and certain polymer types rather than a cudgel to beat those that are already meeting targets.

The Government also explores restricting the obligation to retailers or brand holders and expanding it to smaller companies. Both require consideration but sight should not be lost that if companies are not forced to measure their packaging, they are unlikely to take any action about it. Thought should be given to how to acquire nation specific information. It is more challenging to achieve if retailers both on and off-line are not included.

Local authorities have long complained that they are not getting access to PRN funds, overlooking that they have the same access as other collectors. A desire for producers to cover household full 'net' costs is the tool that is being used to increase the flow of funds to them. A simple sounding concept but challenging to deliver without producers setting up a dual collection system, a path that the UK to date has been reluctant to follow. Voters view that household waste collection is a public service funded through their taxes. Hence the Treasury should look to the income received from packaging, if introduced, and landfill tax to cover these full 'net' costs remembering that industry through payment for the secondary raw materials is already covering some 40%, and if recycling levels increased, possibly more. Surpluses from deposit and eco-modulation schemes could also be considered for contributing to litter collection.

Thank you for your support in 2018. We look forward to being of service to you in 2019 and beyond. These are challenging times. With so much uncertainty the reliability of t2e's forward markets may look appealing.



Angus Macpherson
Managing Director

The Marketplace for PRNs

Q1 Supply Analysis *By Andrew Letham, Sales and Marketing Manager*



The initial release of the 2019 demand data has the total recycling obligation at 7,034,951 tonnes (t), 76,048t short of the initial 2018 release and 453,776t short of 2018's final recycling obligation figure. As it

stands there are 413 less producers registered than at the end of 2018, including a large supermarket that will likely account for an additional 250,000t to 300,000t of PRNs across all materials. In 2018 the growth in the recycling obligation from Q1 to Q4 was 377,728t from a slightly larger number of producers (460) including a large supermarket. Growth this year is expected to be higher due to target increases across all materials.

Plastic continues to write the headlines as high prices carried over from the tail end of 2018 have increased to record levels on almost a weekly basis. The impact of Asia's clamp down on lower grade material was evident in the Q1 supply data with the 244,366t reported as recycled in Q1; 7,761t lower than the same period in 2018 and 14,000t behind last years average of 258,367t. The initial 2019 obligation figure of 1,027,164t is expected to grow to at least 1,100,000t by the end of the year, meaning that a minimum of 286,000t will be required for the remaining three quarters to meet target in year, a feat never achieved in an individual quarter. Perhaps tellingly, the agency has allowed sellers that registered after the accreditation deadline to back date their tonnage to the start of the year and will likely continue to monitor the situation closely. More licenses have now been issued in Malaysia and Indonesia than at the start of the year and the high prices currently being experienced should have a positive effect on recycling rates in Q2. However, our reliance on the Turkey, with 30% of all waste Plastic leaving the UK destined for Turkish ports (as reported by HMRC) in Q1 seems all too familiar.

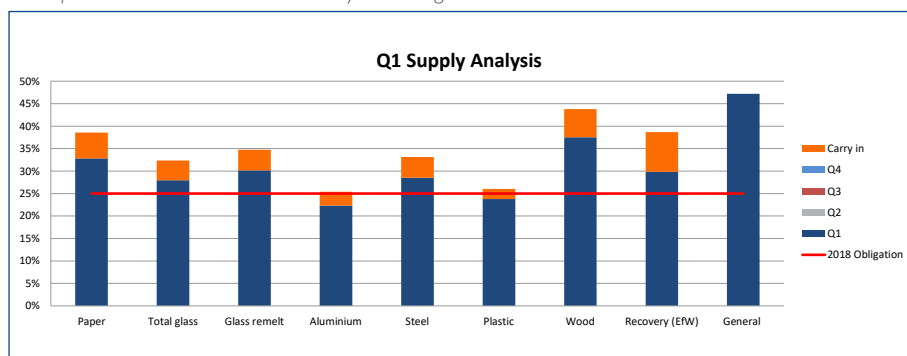
After an incredibly volatile 2018 Wood recorded the largest quarterly return seen since Q2 of 2011. 161,665t were reported as recycled in Q1, up 70% (66,482t) from Q1 2018, showing the markets ability cope with the 5% target increase. Even with obligation growth factored in, Wood is in a position of significant oversupply which has been reflected in the price converging with General Recycling. It would be surprising if similar returns were seen in Q2 given the decrease in subsidy provided by the PRN but the material specific target already looks very achievable.

Glass continued in excellent supply in Q1 with the 444,164t recycled representing a 13% increase on the same period last year. High Glass prices seen in the early part of the year obviously made Aggregate attractive again with the 123,392t recycled in Q1, 45% higher than the 2018 average of 85,326t. Concerns have been voiced that the uplift is just a cannibalisation of Remelt tonnage but with prices softening closer to General Recycling levels this should be less prevalent going forward. The initial obligation figure is almost exactly that of the opening 2018 figure at 1,587,342t. Last year this grew to 1,673,045t but could grow even further this year with the overall Glass target up 1% to 79%.

Material	Carry In	Q1	2018 Obligation	YTD Supply + Carry In	Carry-Out into 2019
Paper	163,912	932,706	2,843,161	1,096,618	163,912
Total Glass*	69,383	444,164	1,587,342	513,547	69,383
Glass remelt	48,993	320,772	1,063,519	369,765	48,993
Aluminium	3,280	23,586	105,819	26,866	3,280
Steel	16,561	103,055	361,117	119,616	16,561
Plastic	23,009	244,366	1,027,164	267,375	23,009
Wood	27,025	161,665	430,863	188,690	27,025
EfW	50,919	172,242	577,055	223,161	50,919
General *	0	320,676	679,471		
Total	354,089	2,081,784	7,611,992	2,435,873	403,082

*Total Glass consists of the combined total supply of Glass Remelt and Glass aggregate.

*Please note the general supply figure has been generated from calculating the surplus material prns in each quarter and does not include carry in tonnage.



Paper recorded a relatively strong Q1 which goes slightly against some of the difficulties being reported in the market. 932,706t were reported as recycled in Q1 meaning that from a suspected obligation in excess of 3,000,000t a healthy contribution of between 150-180k tonnes will be made to General Recycling. Prices have largely held firm as a significant contribution will still be needed from other materials to ensure General Recycling targets are met at the end of the year which will be more challenging if prices continue to fall, particularly in Glass and Wood.

The initial reported Aluminium obligation of 105,819t is already 8,625t ahead of the final 2018 figure. This means we need a minimum of 26,500t per quarter to meet target in year which was only achieved once in 2018. The Q1 supply of 23,586t falls short of this and is also lower than last year's average of 24,967t giving serious cause for concern with the obligation expected to grow further by the end of the year.

Steel remains in very good supply with 103,055t recycled in Q1. The initial obligation of 361,117 should move closer to 390,000t by the end of the year but a surplus is already starting to build. Carry-in from 2018 is down 10,550t year on year which may have a bearing towards the back end of the year as will the situation with British Steel, which could have a much larger impact on the market.

With final obligation data still unknown, caution must be applied when analysing the Q1 data as significant uplift is expected across all materials. Serious concerns remain over Plastic and Aluminium's ability to meet target in 2019 with uncertainty also surrounding General Recycling and Steel, a net contributor to General Recycling in previous years.

The Marketplace for PRNs

How Reprocessors and Exporters utilise their PRN income *Lydia Phillips, Account Manager*



The PRN price for many materials grew significantly over the course of 2018. Looking at the example of Paper, in January 2018 a single PRN could've been secured for £0.95 yet by the end of the compliance year the best price per tonne was £7.50, peaking at £28.00 in between. With all materials seeing substantial price rises over the 13-month period, many buyers have demanded greater transparency in the system in order to gain an understanding of how their money is being

utilised.

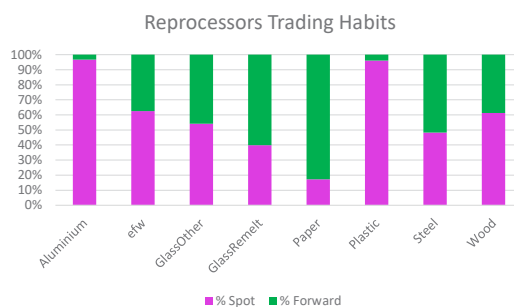
By analysing our 2018 trading data, we can see exactly how much money was directed to Reprocessors and Exporters of each material trading through t2e:

Material	Reprocessors	Exporters	Total
Aluminium	£82,764.50	£900,079.50	£982,844.00
efw	£29,554.65	£9,367.70	£38,922.35
Glass Other	£464,817.00	£11,066.00	£475,883.00
Glass Remelt	£1,973,426.25	£274,897.25	£2,248,323.50
Paper	£383,677.25	£4,621,653.40	£5,005,330.65
Plastic	£4,036,482.80	£18,647,489.40	£22,683,972.20
Steel	£1,283,549.90	£298,230.25	£1,581,780.15
Wood	£4,027,979.70	£67,260.00	£4,095,239.70

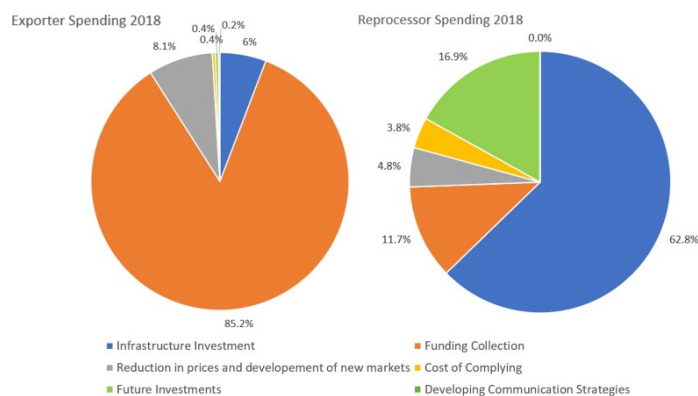
There are a couple of reasons for the large variances between the revenues of Exporters and Reprocessors of the same material. One factor affecting the results is purely the number of businesses of each type whose trading is conducted through t2e. t2e participants include 45 different Plastic Exporters, 56% of all Plastic Exporters, and 17 Plastic Reprocessors. In contrast, for the Glass and Wood sectors there are many more Reprocessor participants than Exporters.

The variation between the revenue achieved by Exporters and Reprocessors of the same material can also be explained by the different ways they approach the PRN market. Exporters find it difficult to predict tonnage or exact timings for delivery and so concentrate on Spot market trading. In the latter 6 months of 2018 they benefited from the rising prices, thus achieving high average prices/tonne for the year. Reprocessors, on the other hand, who are required to make many more investments in their business infrastructure, tend to prefer the Forward markets, securing an agreed price months ahead of the chosen trade date. In a rising market, such as that in 2018, Reprocessors who had locked in trades early on missed out on the higher prices achieved in the second half of the year.

The two graphs below show the percentage of tonnage traded in the Spot and Forward markets by Exporters and Reprocessors of each material.



At the end of the 2018 compliance year our PRN sellers were asked to complete a survey in which they estimated how much of their PRN income they spend in various areas of business development. Below are the average results from Exporters and Reprocessors



Funding Collection

By far the biggest expenditure for Exporters was on Funding Collection. This refers to money spent on purchasing materials from waste management companies and capital investment on additional collection infrastructure, e.g collection banks. On average, our member Exporters suggest that 85.2% of the revenue they obtain from PRNs, totalling £21,105,536.97, is used to support collections. Although overshadowed by their longer-term investments, Reprocessors still attribute a fairly large proportion (11.7%) of their PRN revenue to this outgoing. Both these results show that obtaining material is a major expenditure to all sellers of PRNs.

Reduction in price and developing new markets

2018 saw numerous countries follow in China's footsteps, imposing bans on the import of some waste materials. Such restrictions as those put on Plastic for example, saw the global demand for the material fall. Exporters were thus forced to sell their stock for lower prices and/or look for alternative destinations for their tonnage. It is not surprising therefore that a large percentage of Exporters' PRN revenue was spent on developing new markets for their materials. Whilst in total an average of 8.1% of their revenue was spent on this challenge, some participants attributed 100% of their PRN income to this area of business development, highlighting the severity of the issue in 2018.

Reprocessors also attributed a significant percentage (almost 5%) of their revenue to this exercise highlighting the challenges faced in selling the finished product.

Infrastructure Investment and Future Investment

These are the two biggest areas of expenditure for Reprocessors, accounting for a combined average of 79.7% of their revenue from PRN sales. Unlike exporting, reprocessing requires a reprocessing site, with up to date machinery and investment in the latest sorting technology. The development and maintenance of these require a large percentage of Reprocessors' PRN revenue.

We hope that this analysis has helped in your understanding of how revenue from the sale of PRNs is spent by Exporters and Reprocessors of all materials.