



The Marketplace for PRNs

Market Status Report By Tom Rickerby, Head of Trading



Q3 has seen prices soften across the majority of PRN materials. Despite ongoing uncertainty within global waste markets, the quarter produced record PRN generation in Plastic, Aluminium, Glass and Paper; suggesting that the PRN mechanism is again helping to stimulate recycling growth by providing vital price support where needed. Q3 was also a record for trading on t2e; 555,678 tonnes (t) traded during the quarter, up 24% on the previous quarter and 100% on the same period last year. 303,607t were traded in the Spot market, 130,542t in the 2019 Forward markets and 15,000t in the 2020 Forward markets.

the second quarter in a row. PRN generation is now at the lowest level since Q3 2015 (also the last time Recovery traded on t2e above £1.00 per tonne) and may suggest sellers are losing interest in a market that offers negligible returns and additional administrative burden. Surplus from Q1 and a strong carry-in should mean comfortable compliance again in 2019 but buyers should be wary of emerging tightness in 2020 markets should supply continue to fall.

Paper

Paper sellers' collective resolve was broken this quarter as the downward price correction at the end of Q2 turned into a longer term sell off. PRN prices fell consistently over the period, closing the quarter down 80% at £3.00 per tonne – the lowest paper price since March 2018. Average weekly prices in Paper have now fallen for 19 consecutive weeks. Another strong supply quarter and the return to low single figure prices marks the end of a turbulent 20-month period for the Paper PRN market. However, despite improvements in PRN supply, the underlying recovered paper markets remain in a state of crisis. Old Corrugated Cardboard and Mixed Paper are trading at their lowest levels for a decade with the latter now regularly changing hands at negative values. The effects of this longer-term uncertainty have been priced into opening 2020 paper prices. April and July Forward markets opened at £12.50 in late September but fell 28% to close the quarter at £9.00, dragged down by the softening 2019 Spot price.

Plastic

The extreme volatility seen in Plastic in Q2 has stretched the boundaries of PRN pricing and left the market in a highly unstable and nervous state. Q3 was equally characterized by a series of spikes, retreats and bounces as the market struggled to find consistent support at higher prices. The first half of the quarter saw the market return to £450.00 on three occasions as well as spiking at a record price of £480.00 in the Spot market. Prices waned during the second half of the quarter as evidence of improving supply mounted. This culminated in a 35% price correction to a 14-week low of £290.00 at the release of Q3 supply data. Despite a vastly improved supply/demand picture, another £25.00 upswing at the quarter close hints at an unpredictable final quarter. Traded volume was up 54% on the same period last year.

Aluminium

Q3 saw Aluminium prices continue the upward trend established in the first half of the year. Spot prices rose 53% during the quarter closing at a record high of £460.00. Analysis of the Q3 supply data presents a mixed picture; whilst exporting has risen to record levels, up 28% on Q2, UK reprocessing has fallen to the lowest level since 2012. A weakened domestic market has been one of the prime reasons for the destabilisation of the Aluminium PRN market this year. However, there is now clear evidence that the higher PRN value has stimulated the broker market which is opening new export channels for UBCs. This shifting trading landscape has improved the longer-term outlook with 2020 forward prices falling £50.00 to £300.00 per tonne during the period.

Wood

Questions over whether Wood could maintain current recycling rates given the collapse in the PRN price were answered emphatically with the release of strong Q3 data. PRN generation so far remains unaffected by a market that has now lost more than 90% of its value from its 2019 peak. Early trading in the period tracked the falling Paper/General price but a resistance from sellers saw prices stall at £10.00 - £11.00 for much of the quarter before a further collapse to £6.00 at the close. Early indicators for the 2020 price were limited to trading in the January Transitional market where prices opened at £15.00 per tonne.

Glass

Glass Remelt prices opened the period trading £4.00 above the Aggregate price. However, a general softening over the quarter saw Remelt and Aggregate values converge again, closing with a £0.50 differential at £14.50 and £14.00 respectively. A record supply quarter for Glass Remelt and a surprise bounce in Aggregate generation has maintained the downward price pressure in both markets. With Glass now comfortably on course to meet 2019 targets, prices may have further to fall in the final quarter. A potential soft finish saw sellers turn their attention to the 2020 forward markets for early price certainty. Remelt prices opened at £16.50 across all 2020 markets, with aggregate opening £1.00 below this at £15.50.

Steel

Early trading in Steel saw a reversal of the downward trend that followed the Q2 data release with sellers citing a slowdown in scrap markets and a drop in UK demand for cans as a justification for the swing. Rising prices gathered momentum and by mid-October Spot prices had nearly doubled, hitting a year high of £44.00 per tonne. The much anticipated Q3 data release confirmed a contracting market with Steel missing its quarterly target by circa 500t and generation dropping to its lowest level since Q4 2015. Despite the downturn, Spot prices fell with overall supply deemed sufficient to remain comfortably on target. The quarter closed down 43% at £25.00 per tonne.

Recovery

Q3 saw Recovery trade at between £0.40 and £0.70 depending on volume. This is the 15th consecutive quarter that recovery has traded below £1.00. With such a consistently stable and low value market, it would be easy to overlook the fact that Recovery has now missed its target for

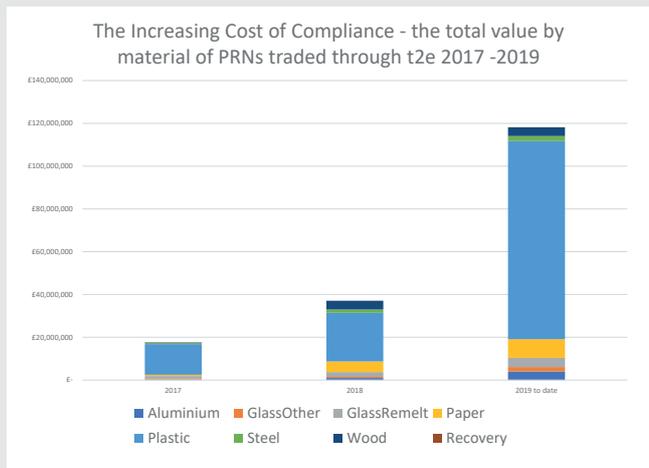
	High	Low	Traded this Quarter	Quarterly Average Price	YTD Average Price	Total Volume
Paper						
Spot 2019	£14.00	£3.00	117,062	£8.37	£14.83	351,200
OCT Forward 2019	£13.00	£6.50	67,550	£8.54	£11.07	90,850
DEC Forward 2019	£9.75	£4.00	35,607	£6.59	£10.61	54,607
Transitional JAN Fwd 2020	£10.50	£8.00	24,500	£8.77	£8.77	24,500
APR Forward 2020	£12.50	£9.00	27,000	£11.81	£11.81	27,000
JUL Forward 2020	£12.50	£12.50	20,000	£12.50	£12.50	20,000
Plastic						
Spot 2019	£480.00	£290.00	90,391	£395.48	£268.59	261,366
OCT Forward 2019	£450.00	£350.00	6,318	£410.93	£366.54	22,471
DEC Forward 2019	£450.00	£290.00	4,100	£383.48	£350.64	5,597
Transitional JAN Fwd 2020	£350.00	£350.00	700	£350.00	£350.00	700
APR Forward 2020	£255.00	£255.00	600	£255.00	£255.00	600
JUL Forward 2020	£255.00	£255.00	1,800	£255.00	£255.00	1,800
Glass Other						
Spot 2019	£16.00	£14.00	10,554	£15.11	£19.13	39,920
OCT Forward 2019	£15.75	£15.75	3,259	£15.75	£21.18	14,559
DEC Forward 2019	£15.25	£15.25	3,500	£15.25	£17.42	5,650
APR Forward 2020	£15.50	£13.75	12,500	£13.86	£13.86	12,500
JUL Forward 2020	£15.50	£15.50	500	£15.50	£15.50	500
OCT Forward 2020	£15.50	£15.50	500	£15.50	£15.50	500
Glass Remelt						
Spot 2019	£19.50	£14.50	13,966	£17.13	£22.10	46,275
OCT Forward 2019	£18.00	£17.30	9,734	£17.64	£21.50	41,734
Transitional JAN Fwd 2020	£16.50	£16.50	15,900	£16.50	£16.50	15,900
APR Forward 2020	£16.50	£16.00	4,500	£16.22	£16.22	4,500
JUL Forward 2020	£16.50	£16.50	2,000	£16.50	£16.50	2,000
OCT Forward 2020	£16.50	£16.50	2,000	£16.50	£16.50	2,000
Steel						
Spot 2019	£44.00	£23.00	21,357	£31.88	£28.02	52,030
OCT Forward 2019	£35.00	£31.00	2,000	£33.00	£27.31	8,000
DEC Forward 2019	£40.00	£30.00	3,182	£37.86	£34.07	4,182
Wood						
Spot 2019	£15.00	£6.00	16,457	£10.41	£22.41	53,427
OCT Forward 2019	£11.00	£11.00	158	£11.00	£41.14	24,523
DEC Forward 2019	£11.50	£6.00	18,000	£6.86	£9.57	23,000
Transitional JAN Fwd 2020	£15.00	£15.00	2,000	£15.00	£15.00	2,000
Aluminium						
Spot 2019	£460.00	£300.00	3,913	£396.60	£265.44	9,105
OCT Forward 2019	£435.00	£315.00	850	£378.53	£286.48	1,350
DEC Forward 2019	£460.00	£410.00	950	£427.89	£427.89	950
APR Forward 2020	£350.00	£300.00	1,250	£330.00	£330.00	1,250
JUL Forward 2020	£350.00	£300.00	1,400	£332.14	£332.14	1,400
OCT Forward 2020	£300.00	£300.00	500	£300.00	£300.00	500
Recovery						
Spot 2019	£0.70	£0.50	4,721	£0.59	£0.65	27,214
OCT Forward 2019	£0.40	£0.40	4,399	£0.40	£0.49	13,387

Managing Director's Comments – December 2019



A record quarter but a sense of the lull before a storm. Not only Brexit (will an election finally resolve this issue?) but also the impacts of changing environmental regulation both overseas in our export destinations and domestically with Producer Responsibility and Plastic under the microscope. We have also welcomed two new employees, Katharine and Lily and Susan's baby, a son called Brock.

The PRN continues to deliver the funds required to meet the targets, this year at significant cost to producers. Looking forward 2020 looks as challenging as both 2018 and 2019, exports seem threatened, combined with a time lag before domestic reprocessing can expand and a range of unknowns.



Year to date

On the reprocessing side Q3 figures show there has been both year on year (YoY) and quarter on quarter (QoQ) growth in all materials except Paper, Steel and most significantly Aluminium. While for exports, despite the troubles with China and as the quarter progressed Indonesia; Aluminium, Plastic and Steel achieved double digit growth both YoY and QoQ. The divergence of some 25% in Plastic exports between

HM Revenue and Customs figures for Mixed Plastics, which includes not only packaging but also waste electronics and end of life vehicles, and PERN figures is a source of concern and a potential abuse that undermines the confidence of domestic reprocessors. The fact that most of this divergence occurs in exports to Europe raises the possibility that ferry movements are not as well monitored as deep seas ones.

Other than Aluminium, all materials should achieve their targets in year, with varying degrees of comfort, putting a downward pressure on prices with all, except Aluminium and Plastic, heading to administrative levels. Appearances can be deceptive, with some 150 companies yet to confirm registration the obligation may increase by 100,000 tonnes or so. Plastic in particular looks light. In this period of relative calm, it is perhaps surprising that buyers have not been thinking more about securing forward contracts.

Looking forward

The knowns for 2020 are that the targets will go up. The unknowns are the impacts of Brexit (or not), Global trade wars, tightening environmental standards in China, Indonesia and elsewhere in the Far East and targets beyond 2020, let alone how Extended Producer Responsibility might work post 2022, although there is a hint that the ambition of 100% full cost may be fading. As things currently stand, carry forward will increase in all materials, except Aluminium and Plastic, both of which need growth to reach next year's targets. However whether administrative prices in the materials filling General Recycling, particularly Paper and Wood, and Recovery obligations will discourage reregistration causing a tightening of those markets remains to be seen.

Once again thank you for your support this quarter. We look forward to continuing to be of service to you. We wish you an enjoyable festive season and possibly hope that it will not be as wintry as some predict.



Angus Macpherson
Managing Director

Meet the Team



Lily Clark – Office Manager

Lily is currently standing in as Office Manager for Susan Kierans whilst she is on maternity leave. Lily was eager to shift from a career as a retail manager!

Graduating in 2016 with a degree in Environmental Biology, Lily felt this opportunity was ideal to get a foot on the environmental services ladder and gain invaluable experience in a new and exciting workplace.

She enjoys watching live music and visiting local art galleries at the weekend.



Katharine Sealy – Account Manager

Katharine Sealy has joined the team as Account Manager. After graduating from Edinburgh University with an English and Philosophy Degree she was thrilled to accept the opportunity to work at t2e and remain in Edinburgh (her favourite city) to start her career.

Weekend past times include bouldering at the local climbing wall, the odd camping trip and enjoying the local culinary and bar scene.



Q3 Supply Analysis By Andrew Letham, Operations Manager



96,065 tonnes(t) of demand have been added to the obligation since Q2 from an additional 113 producers. Of this additional demand 34,437t (36%) were added after the release of the confirmed data and are only visible on the live Packflow reports. This may simply be a case of coincidence, however the more sceptical among us will point to gamesmanship from the buy side, using acutely timed resubmissions to suppress perceived demand. Either way substantial growth was seen in Paper (20,691t) and more significantly Plastic (10,026t) highlighting the ambiguity surrounding the currently unregistered producers and their size of obligation. There are currently 145 less producers registered than at close of play 2018. How much additional volume (if any) will be added by the end of this year is difficult to say but both sides of the market will be keeping a close eye on proceedings given the tightness in certain materials.

Q3 produced a much-needed record quarter in Plastic with 303,639t recycled and both Domestic Reprocessing (114,006t) and Export (189,633t) at all-time highs. Based off the current obligation of 1,107,411t we are on course to meet target in year with the average monthly return of 92,697t just enough (2,200t) to see us over the line before the 23,009t carry-in is considered. Potential for volatility remains with scope for further growth in the obligation and the concern that with Transitional prices already above the 2019 Spot price there could be over commitment into 2020 driving prices up in the current compliance year.

Aluminium also returned a record quarter in Q3 (29,998t) but remains in deficit in year with only 72% of target (112,424t) met without carry-in (3,280t) and exactly 75% with the full carry-in considered. Given the quarter on quarter growth, optimism remains that there will be enough in the pot come the end of the year, however those seeking cut price deals may be holding out in vain as prices have continued to rise.

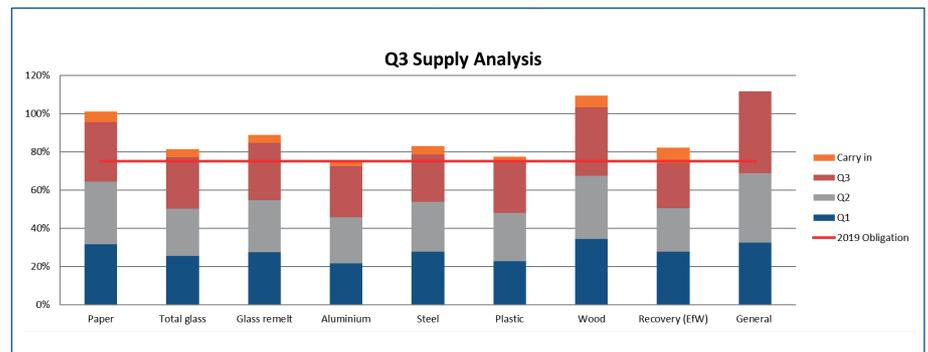
Although Steel returns have been in decline since the start of the year the 94,471t recycled in Q3 (down 4% on Q2) was more positive than many expected. 78% of the current 379,985t obligation has been met before carry-in (16,561t) is taken into consideration with prices falling 60% (£22.50) since the initial release of the Q3 data. Target is now expected to be met comfortably this year however it is a much tighter market than a few years ago and further 3% target increase for 2020 will hold buyer's attention in the Transitional and Forward markets.

The release of the Q3 data quickly dismissed any talk of falling Wood prices having an impact on recycling rates. A 158,967t return, the largest this year, leaves us 108% complete on target with a quarter remaining. Prices which have held up very well all year quickly adjusted to General Recycling levels (£3.00) and with only approximately 50,000t of Transitional tonnage able to be carried forward into 2020

Material	Carry In	Q1	Q2	Q3	2019 Obligation	YTD Supply + Carry In	Balance
Paper	163,912	954,467	980,008	943,970	3,012,438	3,042,357	29,919
Total Glass*	69,383	444,221	426,610	473,083	1,740,135	1,413,297	-326,838
Glass remelt	48,993	320,829	315,610	350,946	1,165,890	1,036,378	-129,512
Aluminium	3,280	24,124	27,225	29,998	112,424	84,627	-27,797
Steel	16,561	105,077	98,455	94,471	379,385	314,564	-64,821
Plastic	23,009	249,682	280,957	303,639	1,107,411	857,287	-250,124
Wood	27,025	152,985	147,434	158,967	445,131	486,411	41,280
EfW	50,919	171,123	139,663	145,877	617,119	507,582	-109,537
General *	0	231,325	261,458	304,897	715,443		
Total	354,089	2,101,679	2,100,352	2,150,005	8,129,486	6,706,125	-837,430

*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.



it will now be a race for sellers to offload excess 2019 tonnage.

Talk of issues in the Paper market again failed to materialise in a significant reduction in recycling rates. A healthy 943,970t were recycled in Q3 meaning only 145,921t (5%) are needed to complete the material specific Paper obligation (3,012,438t) in Q4 with the excess likely to cover a majority of the 715,443t General Recycling obligation. With other materials also falling to General recycling levels carry-out will be substantial however the reduced subsidy provided by the PRN alongside rock bottom material prices will make the movement of Paper a lot more difficult in the coming months.

A strong performance in Glass as Remelt returned its best quarter of 2019 with the 350,946t recycled making up for the shortfall in Aggregate which also performed well up 52% on the same period last year at 122,127t. 77.25% of the total 1,740,135t obligation has now been achieved without the help of carry-in (69,383t) and a soft finish to the year is expected.

Recovery has now missed target for the last two quarters but currently tracks at 76% of obligation (617,119t) with a larger Q1 helping to make up the shortfall. It can be assumed that this stems from a lack of incentive provided by the PRN rather than any deeper lying issues.

The supply in year of both Aluminium and Plastic continues to be of concern and with target increases across the board next year the level of carry-out into 2020 will be of keen interest. All other materials should finish the year in good shape as the Transitional and Forward markets become increasingly active with buyers seeing value at prices below this year's average prices.



HMRC Data Analysis By Katharine Sealy, Account Manager



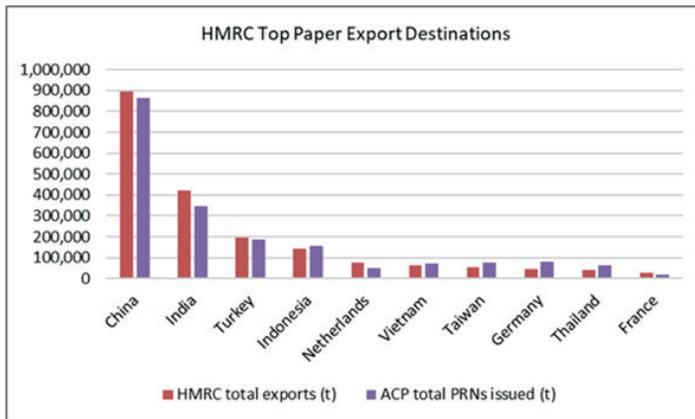
In 2018 the Environment Agency (EA) identified discrepancies between waste exports recorded by Her Majesty's Revenue and Customs (HMRC) and PRNs claimed by exporters as potential evidence of fraud. Export PRNs can be claimed on a proportion of every tonne (t) of packaging waste exported for recycling, whereas the HMRC records the total material waste exports. Therefore, there should be more material waste exported than PRNs claimed. t2e decided to analyse the first three quarters of 2019.

Sources used: HMRC UK trade info (search by commodity code for specific material waste), the National Packaging Waste Database (NPWD) for total export PRNs issued and the Advisory Committee on Packaging's (ACP) 'Destinations Report'.

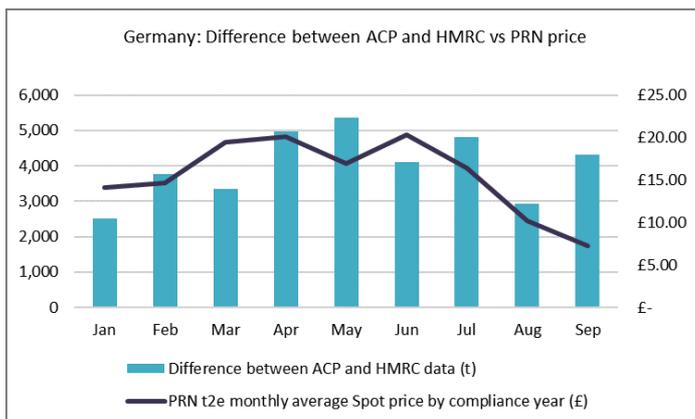
Paper

The HMRC data for Old Corrugated Cardboard (OCC) and Mixed Paper (MP) is under commodity code 470710 and 470790 respectively. Protocol states 97.5% of OCC and 34.5% of MP can be claimed as a PRN. t2e found that with these protocols applied to the data, the total exports from the UK between January and September were 2,032,410t. In the same period exporters claimed 1,970,559t Paper PRNs, since this figure is less than total OCC and MP exports it conforms with expectations.

However, the ACP 'Destinations Report' reveals some anomalies in this total. The graph below shows that five (Indonesia, Vietnam, Taiwan, Germany and Thailand) out of the top ten export destinations are listed with more PRNs than OCC and MP exports.



The greatest divergence was Germany, with 36,141t more PRNs over this period. The difference is greatest in April, the first time the Paper price rose above £20.00, and May. As the Paper price decreased in July, August and September the difference remains relatively unaffected.

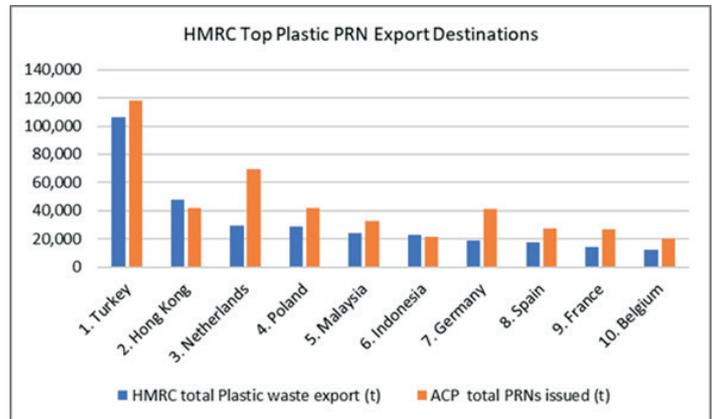


Plastic

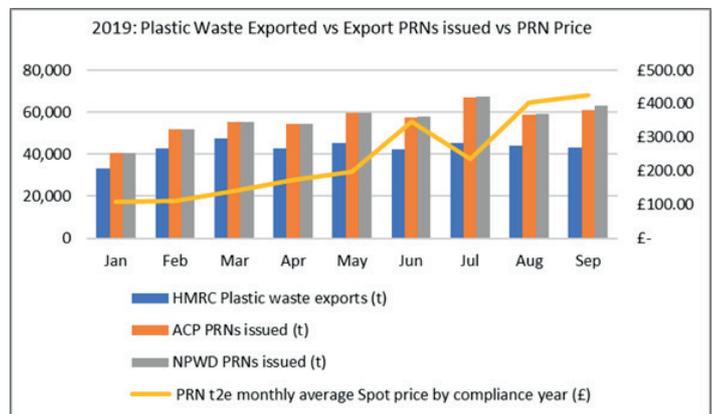
In an enquiry by the National Audit Office (NAO) in 2018, Plastic was singled out as an area of increased risk: "the financial incentive for companies to fraudulently claim they recycled plastic packaging is higher than for any other material." The t2e average price for Plastic was £71.86

in 2018, so far it is £278.84 in 2019². Recent years have seen unprecedented high prices and increased pressure on the Plastic recycling industry following bans from top export destinations, after China's decision to shut its doors in 2018.

More PRNs were issued on exports to eight (Turkey, Netherlands, Poland, Malaysia, Germany, Spain, France and Belgium) out of the top ten export destinations than total Plastic waste exported (HMRC commodity code 3915). The disparity between Plastic waste exports and PRNs claimed is concerning. While the tonnage exported between January and September this year was 386,547t, the NPWD reports 508,738t export PRNs in this period. This raises questions for around one fifth of all export PRNs claimed so far this year. The Netherlands represents the greatest divergence between figures. While around 30,000 tonnes of Plastic waste were exported to the country, there have been over twice as many export PRNs claimed.



The graph below depicts Plastic waste exports and PRNs issued against PRN price. There is a clear upwards trend between excess PRNs claimed and Plastic PRN price. The one anomaly in this trend is the month of July where PRN production reached a year high, but the Plastic price dropped. A possible explanation for this could be a time delay in reporting June exports.



Note: The HMRC data for August contained an anomaly. Malaysia was listed as having imported 24,800 t of Plastic waste from the UK, instead of using this figure for August, a year to date average of 2,695 has been used.

Summary

The anomalies that t2e has uncovered are concerning. While the total Paper figures are in line with expectations, there are still more PRNs being reported than waste exported for five export destinations. In Plastic the discrepancy is far greater: 122,191t or 25% more PRNs (at t2e's average price this is £34 million or thereabouts) have been claimed by exporters than the total amount of Plastic waste exports recorded by HMRC. The scale of this anomaly is hard to dismiss as inaccurate data or misreporting. After the NAO report in 2018, the EA announced renewed efforts to tackle fraud within the export system. Considering the disparity in the 2019 figures it will be interesting to see the outcomes of the EA's efforts.

¹ p7, The National Audit Office Report into The Packaging Recycling Obligations by the Comptroller and Auditor General, 23rd July 2018. <https://www.nao.org.uk/report/the-packaging-recycling-obligations/>
² Average price taken at the time of writing: 11:30am 26.11.2019