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Energy Argus
Petroleum Coke

Petroleum Coke Market Prices, News and Analysis

5 September 2012

Argus fuel-grade petroleum coke spot prices: August

Atlantic Basin $/mt

Fob US Gulf Coast

	40 HGI			70 HGI		
	Low	High	Midpoint	Low	High	Midpoint
4.5pc Sulphur	69.00	70.00	69.50	70.00	71.00	70.50
6.5pc Sulphur	64.00	65.00	64.50	65.00	66.00	65.50

Fob US Midcontinent, Chicago area

	40 HGI		
	Low	High	Midpoint
6.0pc Sulphur	31.00	32.00	31.50

Delivered Northwest Europe - ARA

	40 HGI			70 HGI		
	Low	High	Midpoint	Low	High	Midpoint
4.5pc Sulphur	88.00	89.00	88.50	89.00	90.00	89.50
6.5pc Sulphur	83.00	84.00	83.50	84.00	85.00	84.50

Delivered Spanish Mediterranean

	40 HGI			70 HGI		
	Low	High	Midpoint	Low	High	Midpoint
4.5pc Sulphur	88.00	89.00	88.50	89.00	90.00	89.50
6.5pc Sulphur	83.00	84.00	83.50	84.00	85.00	84.50

Delivered Brazil

	40 HGI			70 HGI		
	Low	High	Midpoint	Low	High	Midpoint
4.5pc Sulphur	85.00	86.00	85.50	86.00	87.00	86.50
6.5pc Sulphur	80.00	81.00	80.50	81.00	82.00	81.50

Pacific Basin $/mt

Fob US West Coast

	45 HGI		
	Low	High	Midpoint
3.0pc Sulphur	97.00	98.00	97.50
4.5pc Sulphur	87.50	88.50	88.00

Cfr China

	45 HGI		
	Low	High	Midpoint
3.0pc Sulphur	129.00	131.00	130.00
4.5pc Sulphur	119.00	121.00	120.00

Cfr India

	40 HGI			70 HGI		
	Low	High	Midpoint	Low	High	Midpoint
4.5pc Sulphur	110.00	111.00	110.50	112.00	113.00	112.50
6.5pc Sulphur	105.00	106.00	105.50	107.00	108.00	107.50

Coke Market Overview

Global coke markets remain mixed in August

Fuel-grade petroleum coke prices were mixed at key global centers in August, with reduced demand balancing tight spot supplies, which were exacerbated by Hurricane Isaac and the explosion at the Amuay refinery in Venezuela.

Hurricane Isaac, which first made landfall in Plaquemines Parish, Louisiana, on the evening of August 28, affected seven coking refineries in various ways. An early morning power loss on 5 September will further delay the return of Phillips 66's flooded 250,000 b/d Alliance refinery in Belle Chasse, Louisiana. Phillips 66 produces about 350,000st/yr of anode-grade coke at the refinery.

Four other coking refineries in Louisiana, and one in Mississippi, were in the process of restarting or were operating at reduced runs on the afternoon of 4 September, according to the US Department of Energy (DOE). ExxonMobil's 502,500 b/d refinery at Baton Rouge, Louisiana, which had been at reduced rates, was already back to normal production on 4 September, DOE said.

Continued on page 2

Coke and coal freight rates

		End-Aug	4-week average
Supramax coke (up to 50,000dwt)	USGC to ARA	19.00	18.88
	Venezuela to ARA	19.50	19.38
	USGC to Mediterranean	19.00	18.88
	USGC to Brazil	16.00	16.00
Panamax coke (up to 70,000dwt)	USWC to Japan	19.50	19.38
Handymax coal (up to 60,000 dwt)	Puerto Bolivar to ARA	14.00	13.58
	Puerto Bolivar to USGC	7.50	7.50
	Puerto Bolivar to USEC	13.50	13.38

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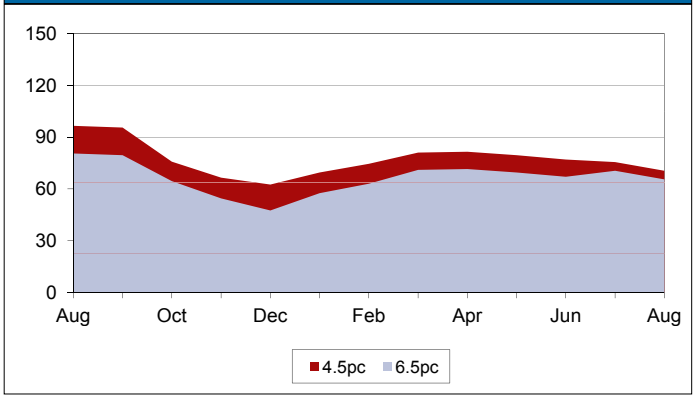
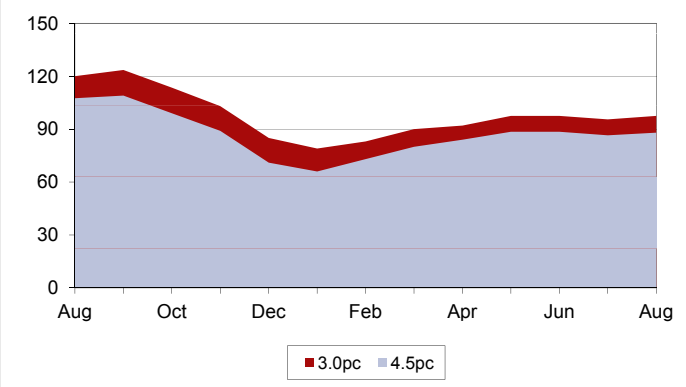
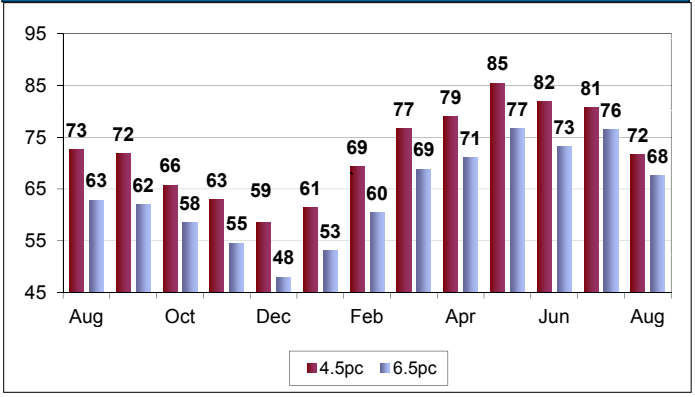
US Gulf Coast hard coke spot price $/mt



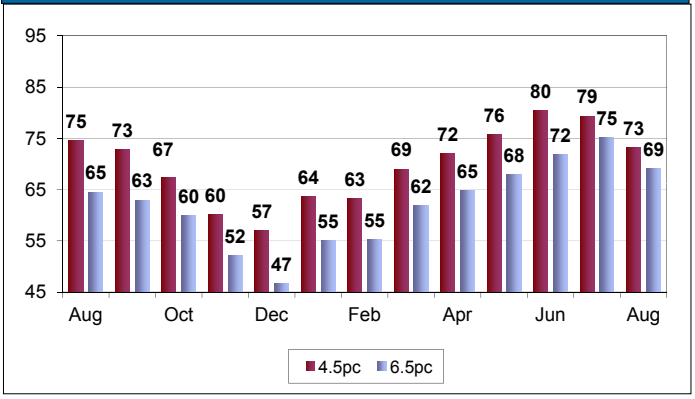
US West Coast hard coke spot price $/mt



Coke pc of coal delivered NW Europe pc



Coke pc of coal delivered Spanish Med pc



Coke Market Overview

Fuel-grade coke production at the impacted refineries totals 7.95mn st/yr, while anode-grade production is 1.32mn st/yr.

The biggest need on 4 September was power, and some terminals down the Mississippi river were said to be without it. On the same day DOE said total customer outages totaled 40,818, or 2pc of Louisiana's customers. Peak power outages following the storm were 889,517.

An early morning explosion on 25 August at PdV's 640,000 b/d Amuay refinery in Venezuela shut the refinery down. The plant was operating at 41pc of capacity on 4 September, PdV president Rafael Ramirez said. Coking capacity at the plant is 57,600 b/d, and quality is typically around 4.5pc sulphur with HGI around 50.

Drought conditions in August hindered barge movements in stretches of the Mississippi. One stretch was closed and several tows were stranded. Conditions had largely improved by the end of August.

Three spot deals for high-sulphur petroleum coke were done on a fixed price basis during August. The deals ranged in price between $60.25/mt and $65/mt on a fob US Gulf coast basis, and represented about 135,000mt. One was a cargo that a refiner tendered in the market. The refiner typically offers one high sulphur, hard coke cargo via tender every two months or so.

A Latin American national oil company also awarded 180,000mt of 6pc sulphur coke with 40 HGI to one buyer, after entering the market in August with a sell tender. The volume was expected to be divided into six shipments, beginning 1 September.

Argus' prices for high- and medium-sulphur coke dropped by $5/mt in August, which kept the differential between the two grades at $5. The 6.5pc sulphur, 40 HGI mean stood at $64.50/mt, and midpoint for coke with 4.5pc sulphur and 40 HGI was $69.50/mt, both on a fob US Gulf coast basis.

Anemic August

Just as coke supplies in the US and Venezuela were constricted in August, buying interest dwindled in much of the world. August is traditionally a quiet month on global markets marked by family holidays, and it comes just prior to the beginning of supply negotiations for the following year.

Coal to coke Btu comparisons

	cif ARA			Western Mediterranean			Cinergy (Ohio barge)		
	$/ mmBtu	pc of coal	CO_2 adjusted	$/ mmBtu	pc of coal	CO_2 adjusted	$/ mmBtu	pc of coal	SO_2 adjusted
Coal	3.95	-	3.93	3.86	-	4.18	2.82	-	2.82
4.5pc Coke	2.83	72	3.19	2.83	73	3.19	2.68	95	2.69
6.5pc Coke	2.67	68	3.05	2.67	69	3.03	2.52	89	2.53

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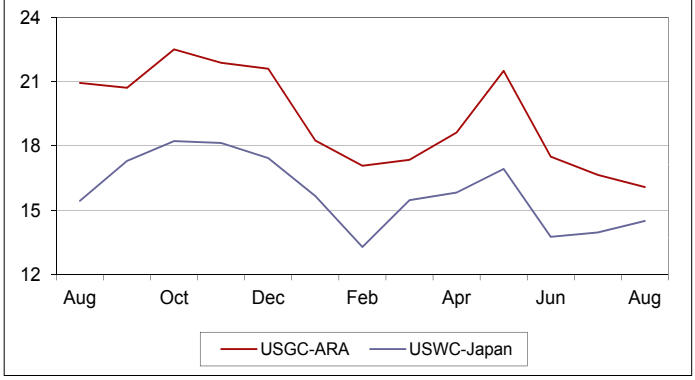
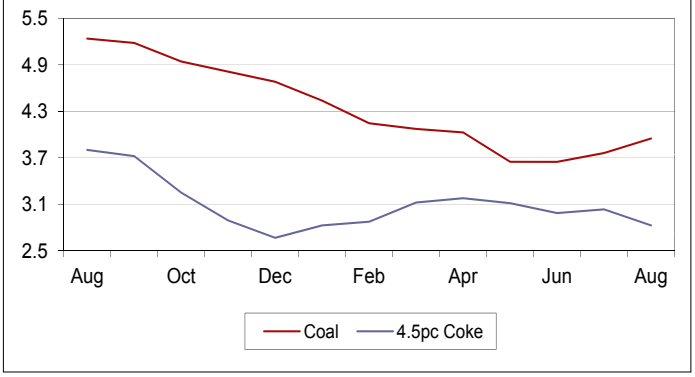
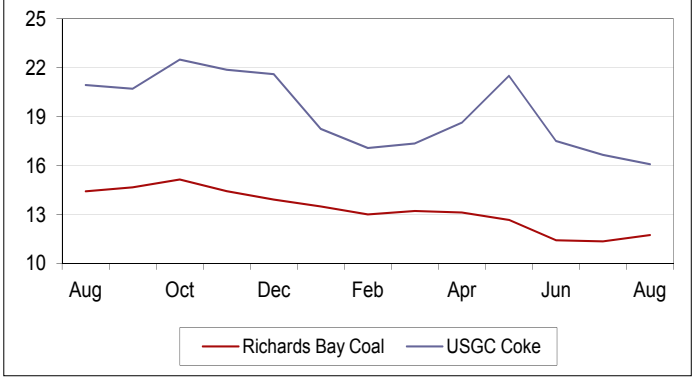
US coke export freight $/mt



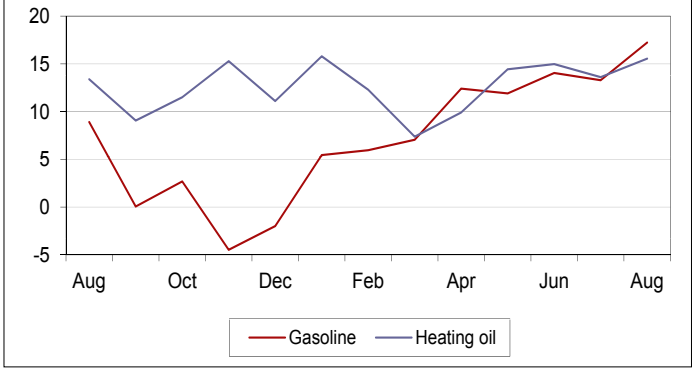
Delivered coke and coal in NW Europe $/mmBtu



Coke and coal freight into NW Europe $/mt



USGC LLS crude oil refinery margins $/bl



Coke Market Overview

Some speculated that cement buyers in parts of the world were awaiting the arrival of Motiva's new coke production at Port Arthur, Texas, hoping to purchase tons at low values. The absence of Motiva's production at Port Arthur, which is expected to produce about 2mn mt/yr of high sulphur, hard coke, was another factor denting supply in August.

Motiva held a commissioning ceremony on 31 May to mark completion of the expansion to 600,000 b/d. The new 325,000 b/d crude unit, which was to feed the new coking unit, was shut down a few weeks later because of corrosion in the plant.

So instead of buyers having a chance to possibly secure tons at a low price from a new source of supply in July, prices turned the other direction.

A buyer of petroleum coke in Brazil, which uses coke primarily in its cement operations, was said to be purchasing more high-quality domestic coke in August as supplies from the US Gulf coast were hard to find.

A European cement company said it was well covered on the spot market, and that it was not interested in petroleum coke at prices above $60/mt fob US Gulf coast.

Coal markets

	End-Aug	Aug ave.	Aug ave.
	$/mt	$/mt	$/mmBtu
cif ARA 6,000 kcal	91.18	94.03	3.95
fob Richards Bay	87.50	89.16	3.74
fob Newcastle	88.41	87.23	3.30
cif Japan 6,700 kcal	101.56	100.38	3.78
CSX 1pc Sulphur US Rail	72.20	72.48	2.63
Big Sandy 1pc Sulphur US Barge	65.04	68.21	2.58
FOB New Orleans			
11,300 Btu 3pc sulphur	53.00	54.41	2.29
FOB Hampton Roads			
12,000 Btu	87.60	85.53	3.59

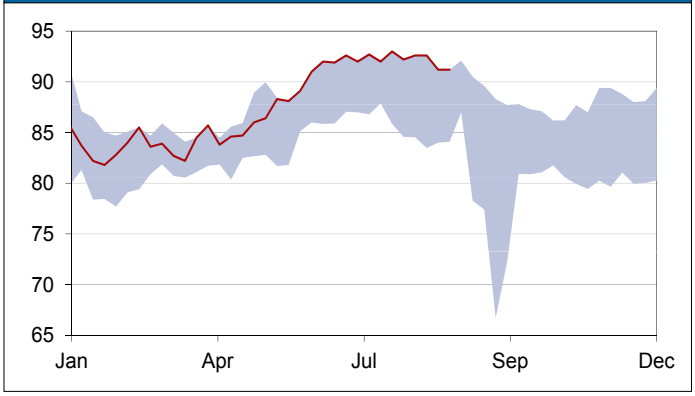
Emissions markets

	End-Aug	Aug ave.
US SO_2 Allowances ($/st)	0.95	0.61
Prompt US Group 1 CSAPR ($/st)	40.00	134.13
Prompt US Group 2 CSAPR ($/st)	50.00	167.39
Argus European CO_2 Index (€/t CO_2e)	8.06	7.57

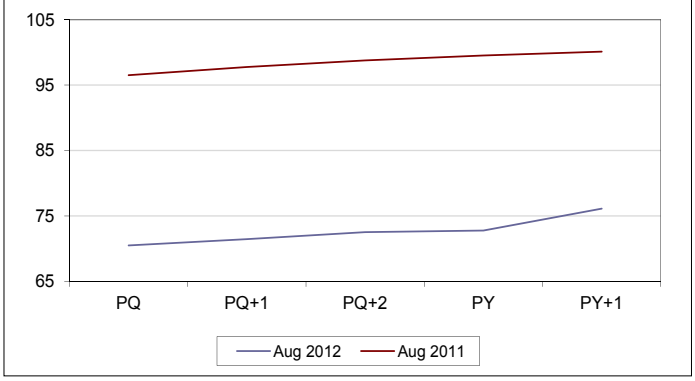
Crude and refined products

$/bl	End-Aug	Aug ave.
Maya US Gulf Coast	101.29	99.38
ANS US West Coast	113.42	110.88
WTI/Maya spread	4.82	5.26
Brent/Dubai spread	-3.59	-5.37
3pc Fuel Oil USGC	102.05	99.53
Asphalt, Western Gulf Coast ($/st)	482.50	483.00
USGC Refining Margin (3:2:1)	34.69	34.40

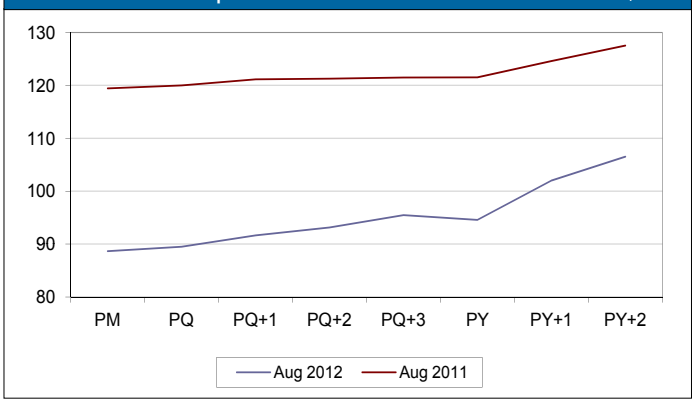
US refinery utilization five-year range pc



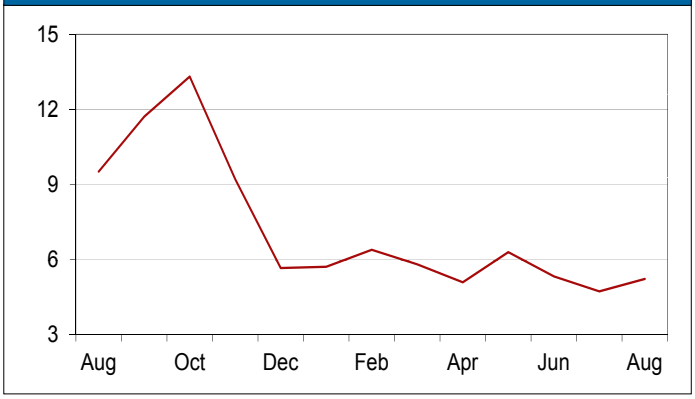
USGC coal implied coke forward curve $/mt



CIF ARA coal implied coke forward curve $/mt



WTI/Maya spread $/bl



Coke Market Overview

New supply

Marathon has shut its 100,000 b/d refinery at Detroit to tie in new units – including a 28,000 b/d coking unit. The plant's capacity will rise to 120,000 b/d when operations begin in November, and the plant will be able to run heavy crude, including Canadian bitumen.

The new coking refinery at Jubail, Saudi Arabia, was 90pc complete at the end of August. The refinery is owned by Saudi Aramco and Total. Feeding of crude into the new crude unit will begin in December, and the new coker will start up in April. Coke from the new plant will be marketed during the fourth quarter of this year, with India a primary target for supply.

Asian markets

Prices for imported fuel-grade petroleum coke rebounded in August amid tighter US supply – even as cargoes into India fetched lower values. But trading volumes shrank further in both countries.

Imported petroleum coke prices in China gained ground on tight supply from the US. But demand from end users remained thin, largely because of the weak thermal coal market. No stockpiling action was detected in the market as most buyers are sidelined, waiting for direction from the Chinese government.

An importer in east China received an offer for a 5.5pc sulphur cargo from the US for October delivery at around $110/mt cfr, which was equal to around Yn880/mt after taxes. Trading prices of similar physical cargoes in Shandong were at Yn890/mt but trading activity was limited.

Coal-implied forward curves: CIF ARA 4.5pc coke $/mt

	PM	PQ	PQ+1	PQ+2	PQ+3	PY	PY+1	PY+2
Aug 2011	119.44	120.00	121.13	121.27	121.48	121.51	124.60	127.53
Aug 2012	88.65	89.50	91.66	93.14	95.49	94.57	102.00	106.53

Coal-implied forward curves: USGC 4.5pc coke $/mt

	PQ	PQ+1	PQ+2	PY	PY+1
Aug 2011	96.50	97.76	98.76	99.52	100.10
Aug 2012	70.50	71.46	72.53	72.77	76.12

Clarksons coke freight rates $/mt

60,000 mt (Panamax) $/mt	1-Aug	1-Jul	1-Jun
US Gulf Coast			
to European Continent	19.00	20.30	21.35
to Spanish Mediterranean	18.20	19.45	20.00
to Black Sea	20.95	22.40	24.30
US West Coast			
to European Continent	19.95	20.50	23.25
to Spanish Mediterranean	19.15	19.80	22.10
to Japan	18.70	19.00	20.90

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Coke Market Overview

An importer offered physical 4.5pc sulphur cargoes at Yn1,000/mt or an equivalent of $125/mt cfr, but did not find any buying interest. Negotiations were minimal for 3.0pc sulphur petroleum coke, although an importer was heard to have received an offer in the high $130/mt range on a cfr basis.

Taiwan Formosa is preparing to issue a tender to sell a second 6,500mt parcel for September loading. The first piece was sold in the mid-$90/mt range on a fob basis. Freight on the Taiwan to east China route was assessed at around $15/mt, which translated to a cfr price of around $110/mt. Sinopec was able to sell a few cargoes of 8.0pc sulphur coke from its Qingdao refinery at Yn1,030/mt.

According to sources from Longkou port, petroleum coke stocks at the port stood at around 300,000mt at the end of August, up 50,000mt from late July.

Meanwhile in India, spot prices for imported fuel-grade petroleum coke weakened further in August because of poor cement demand as construction activity slowed.

Prices for 6.5pc sulphur cargoes from the US Gulf to India fell $1.50/mt during the month to end at $105.50/mt. Fob cargoes were heard priced at around $65/mt fob the US Gulf coast, while Panamax freight to India was assessed at about $40/mt.

Slightly less than 100,000mt of fuel-grade coke was heard to have arrived in India from the US Gulf in August. That consisted of two shipments early in the month at $108/mt.

Although the steep price declines in the earlier months of this year have subsided, market participants expect near-term prices to remain weak amid the general economic slowdown. The monsoon season usually ends in mid-to-late September, but economic activity is not expected to pick up substantially at that time.

Petroleum coke being offered by domestic producers is priced at around $108-110/mt, but the price is still attractive because of the 2.5pc import duty, as well as storage charges, that are added to cfr cargoes.

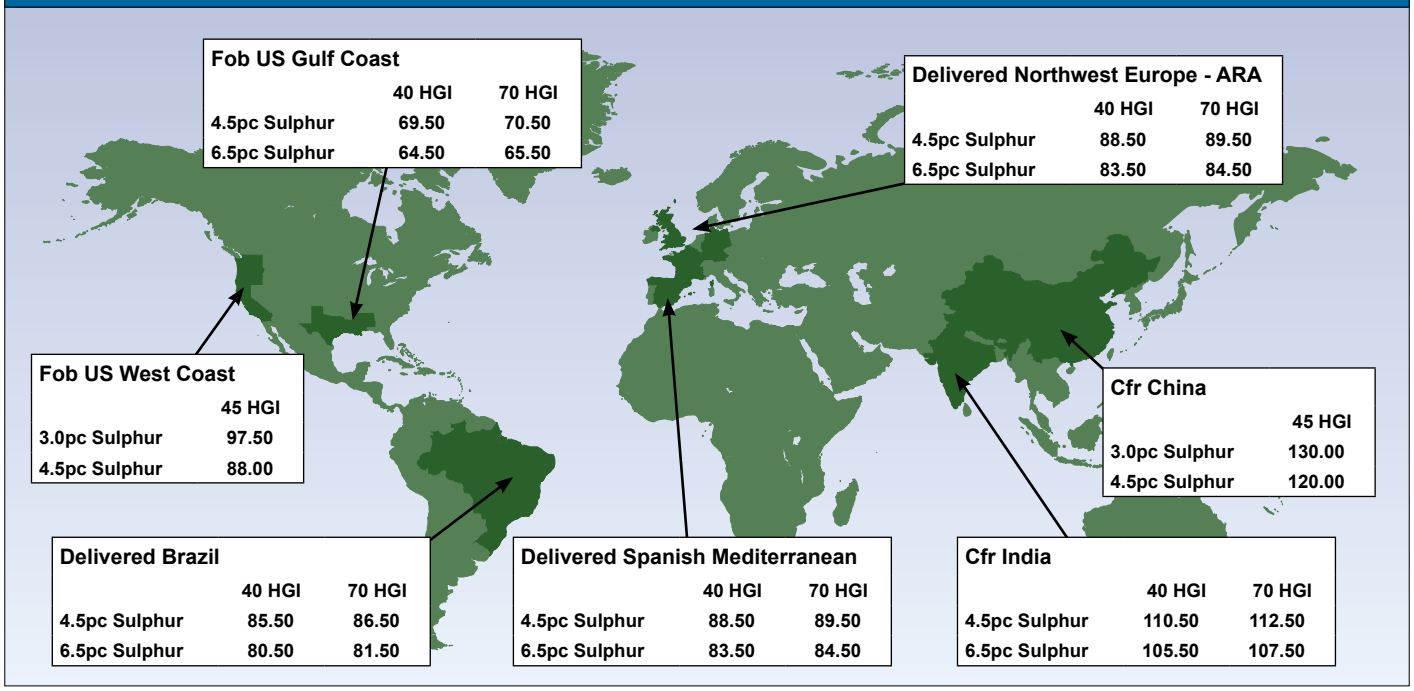
Traders also highlighted the strong competition from US coal. More than 200,000mt of US coal of 6,100 kcal/kg NAR quality arrived in Capesize vessels in August at prices between $91-92/mt.

Freight, coal

Ocean freight rates for moving petroleum coke by Panamax and handymax vessels dropped again in August. Shrinking commodity demand and a poor US grain season remained the dominant themes in the dry bulk market. Sentiment remained relatively bearish, and shipbrokers had little expectation of increased rates in the near term.

As quoted by shipbroker Clarksons in this publication, Panamax rates from the US Gulf coast to the European continent, the Mediterranean and the Black Sea fell to the lowest point at the end of August since April 2009.

Petroleum coke price snapshot $/mt



Coke Market News

Amuay operating at 41pc of capacity

Venezuela's state-owned PdV said its 640,000 b/d Amuay refinery has resumed partial operations and is processing 264,000 b/d of crude, or about 41pc of its nameplate capacity.

Amuay's distillation units 2, 3 and 4 resumed crude processing operations over the weekend, energy minister and PdV president Rafael Ramirez said on 4 September. But he declined to give a specific date when the facility would resume full operations.

Amuay suffered a major explosion on 25 August that killed at least 42 people and injured more than 100.

Ramirez pledged on 26 August the refinery would be completely operational again by late last week because only nine tanks were damaged in the fire, including three that were destroyed. But new aerial photographs of the Amuay refinery's fuel storage areas published today in Caracas suggest that all nine storage tanks caught fire, and at least four were destroyed.

An Futpv oil union official at the refinery also said this week that all of the product transport pipelines, valves, pumps, power supply systems and all instrumentation including telemetry associated with the nine ruined fuel storage tanks will have to be replaced.

Amuay will not be able to resume full operations until the repairs are complete, the Futpv official said.

But Ramirez said the refinery and the nearby 300,000 b/d Cardon refinery that comprise the 940,000 b/d CRP Paraguana refining complex "has 686 storage tanks for crude, gasoline, diesel and other products." The loss of nine storage tanks is regrettable, but it will not affect the CRP's operations, he added.

The Amuay and Cardon refineries have a combined coking capacity of 87,300 b/d.

Amuay "already has shipped over 1.39mn bl of desulphurized gasoline, diesel, Jet A-1 and fuel oil" used by state-owned Corpoelec's thermal power generation plants since the explosion, Ramirez said.

Tesoro to buy BP Carson refinery

Tesoro dug in to the difficult California refining market with a $1.175bn purchase of BP's 260,000 b/d Carson refinery, telling analysts in mid-August that improved crude logistics and emissions-reducing interconnections with its neighboring Wilmington refinery make the deal a profitable, long-term investment.

The purchase includes 800 retail gas stations, bringing the US independent's integrated retail business to 2,200 stores across the southwest. Tesoro also is buying a cogeneration plant, a petroleum coke calciner and roughly $1bn in logistics assets, as well as an estimated $1.3bn in inventory. The deal could close by July 2013, pending regulatory approval.

Tesoro's 96,500 b/d Wilmington plant shares a fenceline with the Carson refinery. The company plans crude and product pipeline interconnects between the two plants, with an eye

Valero to convert Aruba refinery into terminal

US refiner Valero will convert its 235,000 b/d refinery on the Caribbean island of Aruba into a terminal and reduce the workforce. Valero shut in the refinery in March.

The move comes only days after Aruba's prime minister said Valero had reached an agreement in principle to sell the refinery to China's state-controlled PetroChina, and that the Chinese company had asked for the workforce to be kept on while the deal was concluded. PetroChina has not commented on any interest in the refinery.

Valero said the restructuring would be complete this year, but that "in the near term, the refinery will continue to be maintained in a state that would allow a restart should Valero be successful in the pursuit of alternatives." Discussions with interested parties continue, it said.

The government of Aruba has said that PetroChina is awaiting approval from the Chinese government for its proposed purchase. Valero appears to be trying to stamp its own timetable on the process.

Valero said the site would make a world-class crude and products terminal. It has two deepwater docks capable of handling the largest crude carriers, six product berths and 12mn bl of storage capacity. Valero bought the plant from El Paso Energy in 2004 for $350mn. It had a book value of $1bn three years ago. Valero said in May it had received an indication of interest amounting to $350mn plus working capital.

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toward a full integration and "reducing redundant" units beginning in 2015. Total capacity will be above 350,000 b/d.

The refiner produces about 730,000 short tons (st) of 2.6pc sulphur petroleum coke with 50 HGI at Wilmington. Coke production at Carson averages about 200,000st/yr, and sulphur is typically around 3pc

Connections will allow greater flexibility between gasoline and distillates production, with a preference for distillates, Tesoro chief executive Greg Goff said. Tesoro disclosed no plans for increased export capacity, saying it expected to sell most of the production domestically.

Integration will also improve crude flexibility over time, Goff said. Iraqi crude will continue to make up a portion of initial supply. Exports from the country made up almost three quarters — 104,000 b/d — of the refinery's total reported imports in May, the most recent month with Energy Information Administration data. Angola and Congo crude made up the remaining 35,000 b/d. The purchase includes an otherwise undisclosed agreement for continued supply of Alaskan North Slope [ANS] crude, a "significant component of the Carson refinery crude slate," Goff said.

Tesoro has experience working away from ANS in favor of cheaper, lighter domestics. The company will take its first unit train delivery of midcontinent crude to new rail facilities in Washington state in late August. The company suggested increased investment by producers in Alaskan fields, as well as fresh activity in California, west Texas and North Dakota shale fields, would help improve feedstock costs at the refinery.

Such savings may prove critical. Few states pose the regulatory and economic hurdles refiners face in California. Tesoro, after the planned sale of its Hawaiian refinery and the completed purchase of Carson, will have more than half of its refining capacity in the state. Regulators will no doubt examine Tesoro's roughly 27pc share of the California crude refining capacity.

Tesoro told analysts the integration and redundant unit slowdown would reduce regulated CO2, NOx and SOx emissions at the refinery, making it more competitive under state environmental regulations. Goff said products demand should improve as employment figures improve in the state. Per barrel profits may not reach the recent highs of the US refining golden age, but rejuvenated demand and continued exports would provide margins, Goff said.

BP will focus on selling its 475,000 b/d refinery in Texas City, Texas, as it shifts operations away from the traditional coastal export markets and closer to cheaper crudes.

Marathon shuts refinery to tie in new units

Marathon shut down all process units at its 100,000 b/d Detroit refinery on 4 September to tie in a new coker and other units to the rest of the refinery and to perform maintenance.

The refiner's Detroit Heavy Oil Upgrading Project will push

UK's Drax expects to boost petroleum coke usage

UK generator Drax Power expects to more than double its petroleum coke burn this year from 2011 levels, as improved discounts encouraged increased consumption.

Drax consumed 100,000mt of petroleum coke last year and expects to burn around 250,000mt in 2012. The company's estimate for next year is less bullish at 200,000mt.

A number of coal-fired power stations in the UK are scheduled to partially or fully convert to biomass-fired plants, and Drax intends to convert one unit to biomass by 2013. But this is not expected to affect the company's coke usage.

Biomass use is contingent on its price in relation to coal's price, and Drax will continue to use petroleum coke as a substitute for coal if it is economically viable, it said.

The company imports most of its coke from the US Gulf coast, and can burn up to 900,000mt/yr under the right market conditions.

The price of delivered northwest Europe petroleum coke with 6.5pc sulphur, 40 HGI, last December at $68.50/mt was $42.96/mt lower than the average price of cif ARA coal in the month at $111.46/mt. That differential shrank to $29.15/t in January, as delivered coke averaged $76.50/mt and delivered coal was $105.65/mt.

By contrast, high sulphur, hard coke on a delivered ARA basis in July at $90/mt was slightly higher than the price of delivered ARA coal, which averaged $89.56/mt in the month.

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capacity to 120,000 b/d and will enable the refinery to run about 80,000 b/d of heavy crude, including Canadian bitumen.

The new units consist of a 28,000 b/d coking unit, a hydrogen plant, a 33,000 b/d distillate hydrotreater, and a 280 long-ton/day sulphur recovery complex (EAPC, June 10, 2008, p6). The new units are expected to begin starting up on 6 November.

After halting the Detroit refinery expansion because of market conditions in October 2008, Marathon said early in 2009 that the project would be completed in mid-2012 – instead of the original target of the fourth quarter of 2010 (EAPC, 12 February, 2009, p5).

The refiner, at the time, said the project was being pushed back to better align the timing with changes in projections of Canadian oil sands production.

Marathon began commercial construction in June 2008.

PdV plans new Jose storage for overflow

Venezuela's state-owned oil company PdV plans to build new petroleum coke and sulphur storage patios at its Jose complex in Anzoategui state, but in the meantime will attempt to store excess coke offshore, a company official said on 21 August.

The new storage patios are needed "urgently" because Jose's existing petroleum coke storage and sulphur storage patios are overflowing, posing increasing health and safety risks for PdV workers at the complex, the official said.

The overflow has prompted the company to accelerate installation of a temporary offshore petroleum coke loading platform with a storage capacity of 10,000mt that is located about two nautical miles from the coast. PdV plans to move the petroleum coke in trucks to a wharf where it will be loaded manually into barges capable of transporting 5,000mt/d to the offshore facility.

But PdV's plans to repair and rebuild the coke crushing and conveyor transport systems at Jose are stalled for financial reasons, company officials acknowledged.

The company said its four existing Orinoco extra-heavy crude upgraders at Jose, with a combined upgrading capacity of 600,000 b/d, produce more than 16,000mt/d of petroleum coke when operating at peak capacity. About 60pc of the coke is exported, and the other 40pc has accumulated at Jose.

The PdV official at Jose said that less than 3mn mt of petroleum coke is piled up at the complex, but a Futpv oil union safety official at the site said PdV "understates the magnitude of the problem."

The union official said at least 7mn mt of petroleum coke

Magnate proposes west Canada oil sands refinery

Canadian newspaper publisher David Black has proposed building a 550,000 b/d refinery in British Columbia to process Alberta oil sands-derived crude, using dilbit that would be taken off of Enbridge's controversial proposed Northern Gateway pipeline.

The $13bn Kitimat Clean project, which plans to begin construction in 2014 and start operations in 2020, is submitting an environmental assessment application with Canadian regulators, the company said.

Black did not disclose how the proposed project would be funded. But he said capturing and refining Canadian crude in Canada would be a better environmental option than putting heavy crude on the water to Asian markets because it "removes the threat of offshore pollution from a heavy crude oil spill."

The proposed Kitimat refinery would produce 240,000 b/d of distillates, 100,000 b/d of gasoline and 50,000 b/d of aviation fuel from 550,000 b/d of dilbit. The project would also include a natural gas cogeneration facility for steam and electricity.

Kitimat Clean would also produce sulphur and petroleum coke to be sent by rail to Ridley Terminals or loaded at Kitimat for export.

Diluent would be returned to Edmonton via a proposed Enbridge pipeline.

The project would also create jobs, Black said, while giving Canada a better slate of options for Alberta crude, most of which is currently exported to the US.

British Columbia has recently agitated for better fiscal and environmental benefits from the proposed Northern Gateway project, a proposed pipeline connecting Alberta to Canada's west coast and Pacific crude export markets.

Black owns many weekly newspapers throughout Alberta and British Columbia, Canada, and several newspapers in the US, including Ohio's *Akron Beacon Journal* and the *Honolulu Star-Advertiser*.

Coke Market News

have accumulated at the complex since the second half of 2008, when the coke crushing and conveyor transport systems broke down.

"The coke mountain at Jose measures over 100ft high at its highest elevation, and covers an area of over 75 acres," the official said.

But the Futpv representative agreed with PdV's official position that the huge accumulation of petroleum coke is not damaging the environment around Jose, as local government officials in that area of Anzoategui have claimed repeatedly since 2010.

"The environmental problems in the area around Jose are being caused by the emissions from the flares at the four upgraders," the Futpv safety official said. PdV has cut maintenance budgets at Jose by at least 80pc since 2007, and the upgraders "are having operational problems that are aggravating the emissions."

PdV and China Machinery Engineering (Cmec) signed a memorandum of understanding at the end of 2001 that contemplated building three new petroleum coke-fueled thermal power plants in Venezuela with a combined capacity of 1,500MW. But PdV and Cmec have not yet signed any binding contracts, and 2017 is the earliest that these planned power plants could be commissioned should construction start no later than January.

Venezuelan energy minister Rafael Ramirez said Petro San Felix ill revive a decade-old plan to build a coke calcination

PBF reverses course on railed crude for east coast

US independent refiner PBF Energy is expanding rail infrastructure at its east coast refinery just a few months after its chairman said pipeline capacity would make such projects "short-lived."

PBF will next month more than double rail offloading capacity for Canadian Heavy and Bakken crude grades at its 185,000 b/d refinery in Delaware City, Delaware, bringing capacity to 40,000 b/d. The company will nearly triple that capacity by January to 110,000 b/d.

PBF also plans to open an office in Calgary, Alberta, to further develop crude sourcing options.

The plans mark an about-face from April, when PBF chairman and industry heavyweight Tom O'Malley described plans to rail crude east to the Atlantic coast as "short-lived" ahead of improved pipeline capacity to the US Gulf coast.

The Delaware refinery's coking capacity — unique in its region — and uncertainty over the ultimate amount of pipeline capacity for Canadian crudes helped shift the company's thinking.

The company committed to lease "a significant number" of coiled and non-coiled tanker cars in addition to the rail offloading investment.

"These new crude fields in the US and Canada are game changers for east coast refineries," PBF chief executive Tom Nimbley said, adding that domestic takeaway capacity for the crudes would remain constrained.

"So rail delivery of crude oil into PADD 1 should remain viable for some period of time," Nimbley said.

O'Malley in April considered railing the crude too costly to serve as the lifeline northeast refiners needed. The region was facing up to 690,000 b/d of capacity falling dark by the end of the summer as Sunoco and Phillips 66 sought to quit expensive light sweet imports by shutting three Pennsylvania refineries.

"I do not think the solution is so obvious that the domestic crude being produced there would reach here," O'Malley said during testimony on the future of refining in the east coast. "It might for a year or two years, but the pipelines will be built."

That is the outlook Canadian producers recently echoed. Steep discounts on their light and heavy crudes were easing as markets anticipated an end to logistical problems depressing prices.

But two of the east coast facilities found buyers, and independents including Phillips 66 have outlined fresh rail plans for bringing crude to the east coast. Western Pennsylvania independent United Refining has increased rail access to Canadian crude for its 65,000 b/d refinery in Warren, and other test shipments of Bakken crude have found their way east.

PBF said it was the only east coast refinery with on-site refinery access and had a competitive edge as other refiners make plans.

"We are also keeping our options open by barging Bakken from regional third-party terminals into Delaware City and Paulsboro, backing out more expensive, Brent-based crudes," Delaware City refinery manager Herman Seedorf said.

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plant in Bolivar state to produce metallurgical-grade carbon anodes for the state-owned primary aluminum industry. He declined to give details, but the original plan contemplated more than $250mn of capital spending to build that plant.

First-half 2012 coke exports up from 2011

Petroleum coke exports from the US during the first half of 2012 at 16.31mn mt were up by 5.7pc from the 15.43mn mt shipped in the corresponding year-earlier period, according to the US Energy Information Administration (EIA).

Exports of petroleum coke during 2011 were recently revised higher to 33mn mt, from 32.6mn mt. The revision was for exports in December, which were revised higher to 3.71mn mt during August – from 3.24mn mt previously.

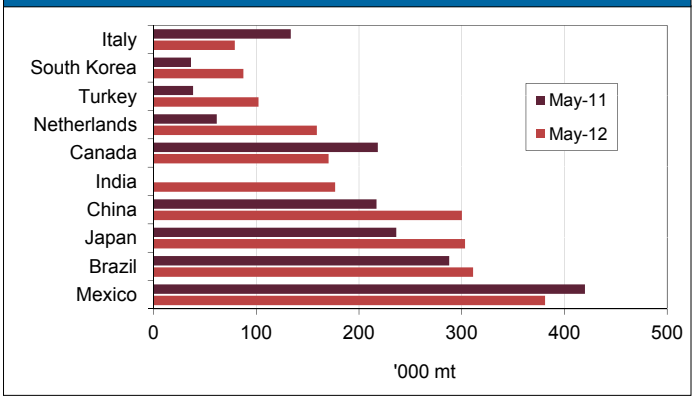
As a result of the revision, the US is on pace to export 32.64mn mt of coke this year, which would be lower than the record exports in 2011 at 33mn mt. The US has set a record for petroleum coke exports for six consecutive years.

US exports in June at 2.7mn mt were up 1pc from the same month a year earlier, and were also up slightly from the 2.67mn mt exported in May. Exports to China in June at 488,929mt easily topped all other destinations.

The US shipped 2.69mn mt to China during the first six months of 2012, which was up by 89.4pc from the 1.42mn mt exported during the same period in 2011. Exports to Japan during the same timeframe this year totaled 1.74mn mt, which was 4.8pc higher than exports during the first six months last year.

Coke exports from the US to Mexico this year continued to trail shipments during 2011. The US exported 1.42mn mt of coke to Mexico in the first half of this year, down by 22.8pc from 1.84mn mt in the same period a year earlier. Exports to Mexico from the US dropped to 144,283mt in June, the lowest level since September 2010.

Top destinations for US petroleum coke exports



Exports to Brazil were also down on the year. US shipments of petroleum coke dropped to 1.09mn mt to the country for January through June, down 17.4pc from the corresponding period in 2011.

India traded places with Turkey in June as coke exports from the US to India hit 972,958mt during the first half of the year, a dramatic 494pc gain from the 163,70mt shipped in the same period in 2011.

Rounding out the top 10 destinations for US coke shipments during the first half of 2012, and the year-to-year change, were: Turkey, 912,341mt, up 6.1pc; Canada, 885,844mt, down 5.4pc; Italy, 877,858mt, down 23.7pc. Spain, 718,875mt, down 39.6pc; and Greece, 341,198mt, up 10.8pc.

US coke exports to the Netherlands, Morocco, and South Korea, at 340,653mt, 329,583mt, and 326,679mt, respectively, were just behind Greece.

Coke consumption in US falls further

US electric power and industrial sectors combined to consume 2.2mn st of petroleum coke during the first half of 2012, down by 26.7pc from the 3mn st burned in the corresponding 2011 period, the EIA said.

Consumption by the two sectors dropped to only 309,000st in June, which was 34.9pc lower than the 475,000st burned during the same month in 2011.

Electric utilities consumed 946,000st of petroleum coke in the first six months of this year, down 42pc from the 1.63mn st burned in the first half of 2011. Independent power producers' (IPPs) consumption from January through June of this year fell to 425,000st, a 36.7pc drop from the year-earlier period.

Coke consumption by the industrial sector rose during the first half of this year to 824,000st – a 20.8pc gain on the 682,000st burned in the same period a year earlier.

Stocks of petroleum coke held by the electric power sector climbed to 346,000st at the end of June, up by 45,000t from May, but well below inventories of 491,000st in June 2011.

Electric utilities in June paid an average cost of $60.29/st for petroleum coke with average sulphur content of 5.9pc. By contrast, they paid an average of $76.57/st for coke with an average of 5.1pc sulphur the previous June.

The average cost paid by IPPs in June for coke with 5.4pc average sulphur content was $45.75/st, well below the average of $56.70/st paid in June 2011 for coke with an average sulphur content of 4.3pc.

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China's coke imports closing in on record

As it imported 639,100mt of uncalcined petroleum coke in July – the most in three months – China boosted its imports during the first seven months of 2012 to 4.5mn mt.

China is well on its way to topping last year's record import volume of 4.83mn mt of uncalcined coke. China set records for uncalcined coke imports in each of the last three years.

China's fuel-grade coke imports in July were 28.4pc higher than the 497,930mt imported during the same month a year earlier.

China exported 134,520mt of uncalcined petroleum in July, the most since September 2011.

But exports in the first seven months of this year dropped to 668,690mt, 30.5pc down on shipments of 962,400mt during the same period in 2011. China is on pace to export 1.15mn mt of uncalcined coke this year – after exporting a record 1.5mn mt in 2011.

China's calcined coke exports at 109,700mt in July were down from 130,100mt in the same month a year earlier. Exports from January through July totaled 695,820mt, down 9.4pc from 768,000mt in the corresponding 2011 period. China's exports of calcined coke also hit a record in 2011, at 1.37mn mt. China is on pace to export 1.19mn mt this year.

Brazil's petroleum coke imports down

Brazil's imports of fuel-grade petroleum coke trailed the corresponding year-earlier periods in June and in the first half of 2012, while exports of its high-quality anode-grade coke rebounded sharply during the periods.

Brazil imported 340,659mt of coke in June, down 23.1pc from 443,164mt in the same period of 2011. During the first half of 2012, Brazil's coke imports at 1.96mn mt were 21.9pc lower than imports of 2.51mn mt in the first half of 2011.

Brazil's June exports at 36,791mt were up from zero during the same month in 2011.

Brazil exported 227,906mt of specialty grade coke in the first half of this year, a 98pc jump from exports of 115,067mt in the corresponding period in 2011.

The US exported 962,792mt of petroleum coke to Brazil in the first five months of 2012, down 14pc from 1.12mn mt in the same period of 2011, placing the country fourth among countries that receive US coke exports. US coke shipments to Brazil in May at 311,071mt trailed only shipments to Mexico in the month, which totaled 381,125mt.

Japan's petroleum coke imports fall

Japan's imports of fuel-grade petroleum coke in July fell by 26pc to 313,802mt from the same period a year earlier, the country's finance ministry said.

Petrochemical producers, one of Japan's main coke consumers, cut imports for July after reduced operations in June, when most cargoes arriving in July were traded. Japan's ethylene cracking rates in June fell by 13.4 percentage points to 79.4pc from the same month last year, according to the Japan Petrochemical Industry Association.

July imports from the US fell by 23.6pc to 269,976mt from a year earlier, while supply from Canada declined by 43.1pc to 27,123mt during the same period. No cargoes were delivered from Taiwan in July. Imports from other countries such as China and Myanmar (Burma) in July dropped by 28.9pc to 16,703mt from July 2011.

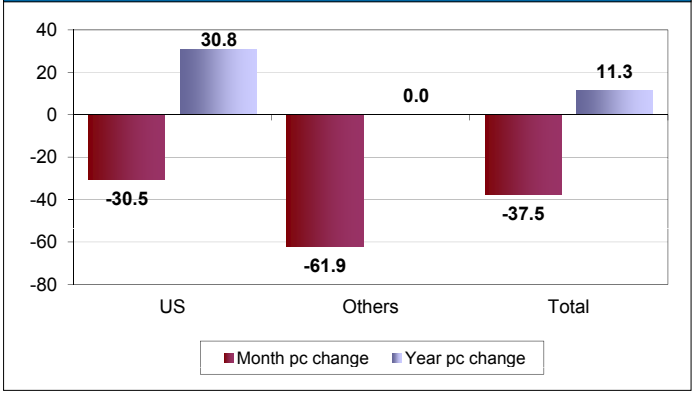
Japan's petroleum coke imports for the first seven months of this year rose to 2.5mn mt, which was up by 4.2pc from 2.4mn mt in the same period last year. Japan's import prices for petroleum coke in July averaged $158/mt, down by 32pc from $232/mt a year earlier. The price drop reflected lower import costs for competing steam coal and lower spot prices for cargoes loading at the US west coast during the period.

Japan's fuel grade petroleum coke imports — '000 mt

	Jul '12	Jun '12	Jul '11	Jan-Jul 2012	Jan-Jul 2011
US	270	306	353	2,198	1,993
Canada	27	0	48	183	236
Taiwan	0	0	0	7	0
Others	17	8	24	91	154
Total	**314**	**314**	**425**	**2,479**	**2,383**

Note: Numbers are rounded. Source: Ministry of Finance

Change in Japan's fuel grade petroleum coke imports



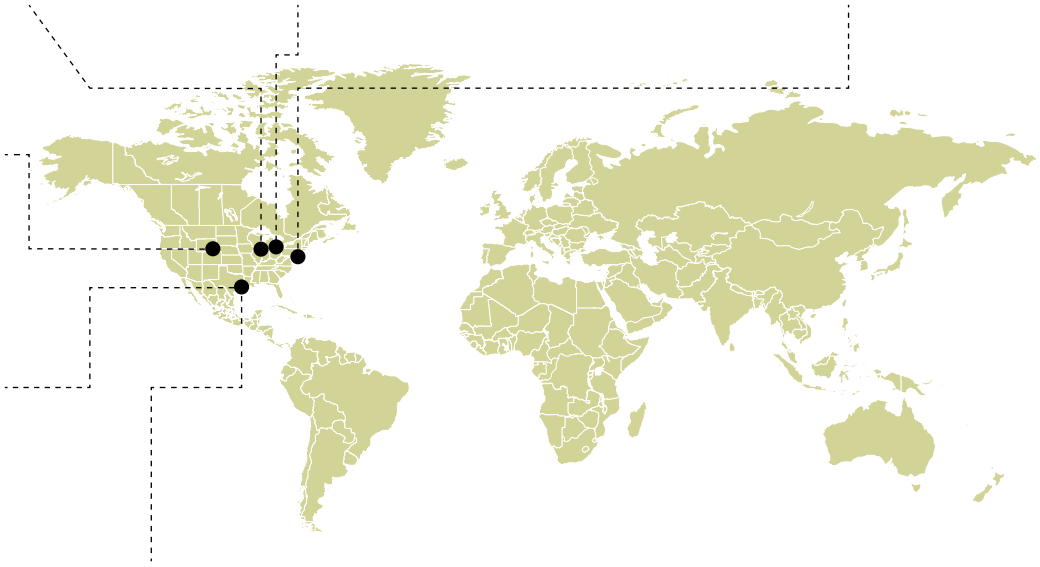
Coke Market News

Coker operations

US midcontinent
BP, Whiting, Indiana
BP returned a damaged coking unit at its 410,000 b/d refinery to service on 14 August, although it was not clear at what rate the coker was operating. The unit suffered a 30-minute fire on 23 July.

US midcontinent
Marathon Petroleum, Detroit
Marathon shut down all of the process units at its 100,000 b/d refinery on 4 September so it could tie new units, including a 28,000 b/d coker, into the rest of the refinery. The refinery units are expected to start up around 6 November.

US east coast
PBF Energy, Delaware City, Delaware
PBF Energy reported a compressor malfunction on 26 August at its 190,000 b/d refinery in Delaware City. A company representative could not be reached for comment.



US Rocky Mountains
HollyFrontier, Cheyenne, Wyoming
HollyFrontier expects to complete a coker turnaround in the third quarter at the company's 52,000 b/d refinery in Cheyenne.

US Gulf coast
Phillips 66, Sweeny, Texas
Phillips 66 shut down a delayed coker at its 215,000 b/d refinery late on 2 September. The company told state environmental regulators the shutdown would assist repairs to a wet gas compressor.

US Gulf coast
Pasadena Refining Systems, Pasadena, Texas
Pasadena Refining is not expected to rebuild a coker that caught on fire last December at its 100,000 b/d refinery in Pasadena. The refiner initially said it intended to rebuild the coker. The refiner was producing about 175,000st/yr of anode grade coke prior to the fire.

Coke Industry News

UK's Drax to halve coal demand by 2017

UK generator Drax will convert three of its six co-firing units at the 4,000MW Drax power station near Selby, UK, from coal to 100pc biomass by 2017, halving its demand for coal. Drax currently burns around 10mn mt/yr of coal at the plant.

The utility plans to fully convert the first unit to biomass by mid-2013, with the second following a year later and all three converted by 2017. "Regarding the other three units, we will have to assess the economic conditions and the situation for coal at the time [2017]," Drax said. "We will have to consider the carbon floor price, which will be implemented from April next year and will squeeze coal margins, but also look at how established biomass supply chains are."

The UK Department of Energy and Climate Change (Decc) announced renewable energy subsidies which could prompt Drax to eventually convert all six of its coal and biomass co-firing units to run 100pc on biomass. Decc confirmed it will maintain current renewable obligation certificate (Roc) subsidy levels for fully converted units, but offered lower-than-expected subsidies for varying levels of co-firing.

Drax said that looking at support levels for co-firing and the levels available for biomass conversions, it was clear that shareholder value was in doing the full conversion. "If you look at the levels of award available, unit conversion is a strategy that the government clearly wants coal-fired generators to adopt," said Drax. One of the 4,000MW plants that Drax operates still largely depends on coal and petroleum coke.

Ecopetrol strikes crude deal with Essar

Colombian state-controlled oil company Ecopetrol has signed a one-year contract with Indian independent refiner Essar to sell 12mn bl of Castilla crude.

The heavy sour crude will supply Essar's Indian west coast Vadinar refinery, whose capacity recently was expanded to 400,000 b/d.

Ecopetrol will fulfill the export contract, worth close to $1.2bn, with six 2mn bl cargoes, the first of which left Colombia on 29 July aboard a VLCC.

Essar said in June that the refinery expnasion had been completed four months ahead of schedule, taking total investment at the refinery to 240bn rupees ($4.3bn). The expansion, which was completed in March, included addition of a 100,000 b/d coking unit to turn residual fuel oil into lighter oil products (EAPC, 6 June 2012, p12). Essar plans to eventually reduce fuel oil production at the refinery to zero as a result of its new coker. But strong fuel oil markets have encouraged the producer to run the unit at less than full capacity.

US cement shipments jump in May

US and Puerto Rican shipments of portland and blended cement jumped in May and for the first five months of the year from the corresponding periods of 2011, the US Geological Survey said.

The shipments of the two types of cement in the US and Puerto Rico totaled 7.5mn mt in May, up 15.9pc from the same period a year earlier. During the first five months of 2012, the US and Puerto Rico shipped 29.4mn mt, an 18pc increase from the same timeframe in 2011.

The top producing states in May, in descending order, were Texas, Missouri, California, Michigan and Florida. The top consuming states, which together took 36pc of shipments in May,

DTEK to supply anthracite to Brazil, Ethiopia

Ukraine's DTEK Trading is expanding its market base and will start supplies of anthracite to Brazil and Ethiopia.

The company plans to ship up to 50,000mt of anthracite to South American ports, which have import potential of more than 1.2mn mt, by the end of this year after concluding a contract with Brazil's largest steel company Gerdau, which owns iron ore and steel plants. It is also negotiating terms for cooperation in 2013.

DTEK is also entering the African market, which could import up to 300,000mt of anthracite, and will deliver low volatile grade coal to a cement plant owned by Ethiopian Petroleum Enterprise.

"DTEK became the first Ukrainian company to enter the coal markets in Africa and South America, where there is considerable demand for high quality anthracite coal," DTEK commercial director Andrey Favorov said. "We see interest from local consumers in cooperation with our company and we are actively negotiating with major stakeholders."

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were in descending order, Texas, California, Florida, Ohio and Illinois. May clinker production in the US and Puerto Rico of 6.3mn mt was about 9pc higher than output during the same period in 2011. Production from January through May was 25.4mn mt, up by almost 12pc from the corresponding period in 2011.

South Korea's Kowepo issues coal tender

South Korean utility Korea Western Power (Kowepo) has issued a five year-term tender to buy coal.

In the first contract year, Kowepo is seeking 440,000mt of at least NAR 5,600kcal/kg coal to be delivered from 1 January to 30 June 2013, as well as 440,000mt of at least NAR 4,600kcal/kg material to be delivered from 1 November 2012 to 31 March 2013. The shipments are to be delivered on 110,000mt mini-Capesize vessels on a fob basis. Russian coal is not eligible. The tender closes on 11 September.

Excel Maritime: Iron ore to lift dry bulk

Chinese iron ore imports may lift dry bulk freight rates in the coming quarters, Excel Maritime says.

"There is still the possibility — and we see this as quite a possibility — of the smaller Chinese iron ore producers to be actually squeezed out of the market," Excel Maritime business development officer Ismini Panayotides said. "So then we will have the good producers from Australia or Brazil who will be remaining."

Brazilian producers fixed a large number of vessels for voyages to China in late August, helping to prop up charter rates for Capesize and Panamax vessels alike. At least five Capesize vessels were fixed for shipments from Brazil's Tubarao to China, with rates of $17.15/mt to $17.57/mt.

The company remains concerned over a recent drop in Chinese coal imports, but thinks that vessel scrapping could lend additional support to charter rates over the remainder of this year and next. "Scrapping should play an even more significant balancing role in the supply and demand imbalance during the remainder of the current year," Panayotides said. "2012 will continue to be a challenging year … but scrapping in combination with slippage and long-term dry bulk fundamentals will … help stabilize the vessel oversupply in the future."

Dry bulk freight rates have been under enormous pressure over the past few years because of slower-than-expected commodity demand growth and a rush to order new vessels in 2007 and 2008. Most Capesize vessels are running at a loss.

China, South Korea eye Colombian coal

China and South Korea are becoming major consumers of Colombian coal as exports to the Asian countries jumped in the first six months of 2012.

Shougang maintains steel output as prices fall

Major Chinese steelmaker state-controlled Shougang is raising coking coal imports as it operates at full capacity, despite negative margins and high steel stocks.

The steelmaker expects the government to issue more supportive policies later this year, and that is encouraging it to maintain operating rates even as many other Chinese steel mills cut back. Shougang imported around 800,000mt of coking coal in the first half of 2012, of which 90pc was premium hard coking coal from Australia and Canada. This exceeds its total imports of coking coal last year, at 700,000mt. Shougang uses around 6mn mt/yr of coking coal, of which around 50pc is hard coking coal.

Prices of iron ore and coking coal have tumbled in recent months, with coking coal prices on a cfr north China prices having fallen by 15pc in the last month alone to $162.79/mt as of late last week. The decline in raw material prices has offset the impact on Shougang of lower steel prices, but high stocks and weak demand from the automotive and construction sectors have pushed margins deeply negative. But the state-controlled company expects to benefit from government policies to support the economy after China's top leaders agree a once-in-a-decade handover of power later this year.

Shougang's notional buying ideas for premium hard Peak Downs coking coal from Australia are at around $160/mt cfr, below fob Australia prices at $161.86/mt as of 31 August. The company expects Chinese coking coal suppliers to cut prices further in September, citing resistance from some steel mills.

China is considering abolishing the 40pc coking coal export tariff in January 2013, as Chinese coking coal companies struggled with losses because of oversupply in the market.

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Colombian coal exports to China skyrocketed to 3mn mt in the January-June period from 359,000mt in the year-earlier period, according to the mines and energy ministry. China imported 2.94mn mt of Colombian thermal coal in the first six months of the year, while the remainder was metallurgical coal and coke.

Cerrejon, Colombia's largest coal producer and Drummond, the country's second-ranking producer, together exported 650,000mt to China in Capesize vessels in the second quarter, a coal analyst said.

Low freight charges "allowed for those exports," a coal analyst said. "The big question now is whether Colombian coal exports to Asian countries will remain. Freight charges will decide the future of coal exports to Asia."

Deliveries to South Korea also boomed. South Korea took 1.6mn mt of Colombian coal in the first six months of the year, almost all of it thermal coal, rising from 143,000mt in the first six months of 2011.

Turkey purchased 3.5mn mt of Colombian coal in the first half, rising 30pc from the same period last year. Of the total, Turkey bought 3.4m mt of thermal coal.

Cerrejon, Colombia's largest coal mine, has a three-year contract to deliver 2.5mn mt/yr to Turkey-based Eren Holding, an industrial company whose businesses include electricity generation and paper and cement manufacturing.

Eren transports Colombian coal in 160,000mt vessels across the Atlantic and through the Mediterranean. The company pays $14-19/mt in oceangoing vessel costs from Puerto Bolivar to Turkey.

Eren Holding is building a 1,360MW coal-based thermoelectric power plant in Çatalagzi, Zonguldak, in Turkey. The first 160MW of the plant was completed in 2010.

Cerrejon also exports coal to Iskenderun Enerji, which has a 1,320MW coal-fired station in Turkey. The Colombian producer also recently sealed a contract to sell coal to Turkish steelmaker Icdas, one coal exporter said. Overall, Colombian coal exports totaled 41.1mn mt in the first half of the year, up from 39.3mn mt shipped in the same period last year.

Pemex shortages give new life to fuel oil

Recurring shortages of natural gas are leading glass, steel and textile industries to evaluate changing their processes from natural gas to fuel oil, says Claudio Gonzalez, president of Kimberly-Clark Mexico and spokesman for Mexico's industrial chambers.

Frequent alerts of gas shortages from state-run Pemex oblige industries to shut down their processes and are causing major losses at some industries, especially in central and western Mexico, he says. Very low gas prices, combined with much higher demand and limited supply and pipeline capacity, have distorted Mexico's gas market, while Pemex has large stocks of fuel oil stored at its refineries, which it struggles to sell because of its high sulphur content.

Industrialists are negotiating with Pemex and with Mexico's finance authorities in the hope of getting supplies of fuel oil at subsidized prices, until gas supply problems get resolved. This would help Pemex reduce its fuel oil inventory, they say. Most

Coalspur obtains more capacity at coal terminal

Australia and Canada-listed resource developer Coalspur has been allocated an additional 2.2mn mt/yr of capacity at the Ridley coal terminal at Prince Rupert, British Columbia, starting in 2017, the company said.

The company has a total allocation of 11.7mn mt/yr at Ridley and almost meets its export requirements. This replaces the earlier agreement with the Ridley terminal of a 4mn mt/yr allocation as its operator did not receive Canadian government approval to expand the terminal beyond the planned capacity of 25mn mt/yr. The Ridley terminal is expanding to 14mn mt/yr this year from current capacity of about 10mn mt/yr.

Coalspur is developing the 12mn mt/yr Vista thermal coal mine in Canada's Alberta province. The company has also secured an allocation with rail operator CN Rail for up to 12mn mt/yr of coal. But Coalspur has yet to secure money for the first phase of the mine's development and is discussing its funding. It plans to start the mine's construction in next year's second quarter with first production in 2015. But the company has about $55mn in cash and available credit, only sufficient to fund operations through detailed engineering and the first phase of the project's regulatory process. Phase one of Vista was to develop a mine of 5mn mt/yr production capacity at a cost of C$870mn ($883mn) and the second phase of an additional 7mn mt/yr for an additional cost of C$373mn.

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of Pemex's fuel oil output is used for power generation and for internal use at Pemex, but some is exported to Asian markets.

Pemex general director Juan Jose Suarez Coppel has told industrialists that Pemex will invest urgently in compression on its pipelines in northern Mexico, so that more US shale gas can be brought into Mexico, "but supply shortages will persist until the compressors are installed and operating at the end of 2013," he says.

Industrialists claim that Pemex has issued more than 100 alerts of gas shortages over the past two years. Supply problems are usually resolved quickly, but often cause factory output to stop momentarily. The gas price in Mexico's domestic market is linked to the Henry Hub spot price. But Mexico cannot access US gas output easily because of capacity restrictions on pipelines. Most existing gas pipelines already operate at full capacity and are insufficient to meet rising demand, particularly from power plants. Pemex's gas division has attributed gas shortages to other factors, such as high summer demand for gas, problems in production and compression, greater use of gas for oil well-pressure maintenance and operational problems on the pipeline system.

Meanwhile, gas output at Pemex – Mexico's sole producer – has been falling since early 2011 because of the plunge in gas prices in the North American market, which makes it unprofitable for Pemex to invest in gas production. Pemex's gas output has dropped from 7.0bn ft3/day in 2010 to an average of 6.4bn ft3/day in the first seven months of 2012.

Pemex produced 285,300 b/d of fuel oil in the first seven months of 2012, mainly as a byproduct of gasoline production. This compares with 308,500 b/d in the same period of 2011. It exported 75,000 b/d of fuel oil over the same seven-month period, down from 100,000 b/d a year earlier.

Opinion – EPA needs to replace cross-state quickly

Coal-fired generators are back to playing a waiting game for SO_2 and NO_x standards now that a federal court has struck down the Cross-State Air Pollution Rule.

The rule was the Environmental Protection Agency's (EPA) response to the Clean Air Interstate Rule (CAIR), itself struck down by the court, which felt it was not strong enough to control emissions and had technical flaws. Both rules were an attempt to reduce the transport of air pollution across state boundaries to help downwind states meet federal air quality standards.

The DC Circuit Court of Appeals said at the end of August that the EPA used a flawed methodology to overstate the amount of emissions reductions each upwind state must make. The court also chided EPA for failing to allow states the opportunity to implement their own emissions reduction plans.

Most utilities that have not retired their coal-fired plants were going to reduce their SO_2 and NO_x emissions from retrofits they were making to comply with EPA's mercury rule by 2015. Much of the equipment to control mercury also limits SO_2 and NO_x output.

But there will still be some kind of rule or strategy designed to control SO_2 and NO_x emissions, as the mercury rule was issued under a different part of the Clean Air Act.

It is not clear yet what options EPA may consider to replace the cross-state rule. It could order the creation of individual state implementation plans, which would allow each state to handle its own emissions. But EPA would still have to determine appropriate control levels for each state.

Or EPA could design a new standard. It may also need to amend its regional haze rule, which primarily covers control of smog affecting national parks. EPA had determined that states would be considered in compliance with the haze rule if they met the cross-state rule requirements.

How EPA intends to proceed may not be known for a while, as it has 45 days to appeal the court's decision. It could be several months before EPA begins writing new rules, should it lose on appeal.

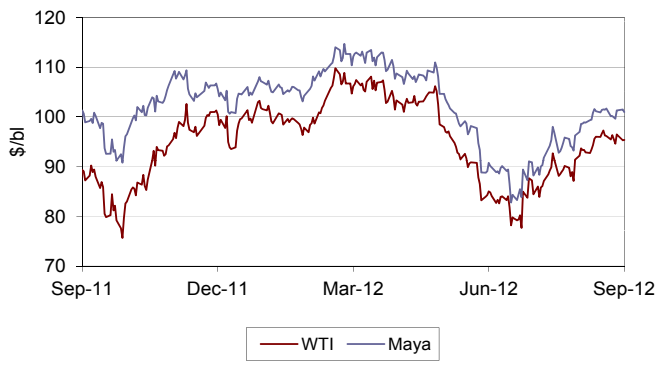
Those delays could give more time to utilities seeking to add emission controls. When CAIR was struck down in 2008, it took EPA three years to release a replacement rule.

But there is still uncertainty after the cross-state rule was overturned. EPA and the entire executive branch may get new leadership in January if Republican nominee Mitt Romney wins the presidential election. Attitudes toward the agency and its plan could shift radically.

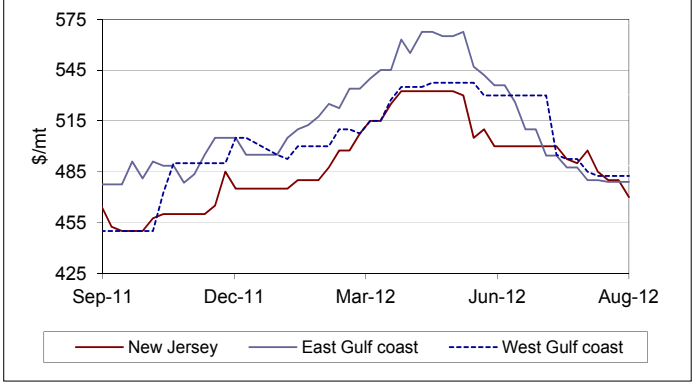
EPA needs to make a quick decision about how it plans to control SO_2 and NO_x emissions to limit further uncertainty for coal markets. Some coal-fired units have already been retired based on the expected costs of meeting cross-state and the mercury rule, and remaining operators need to know what the future looks like so they can plan.

Energy Market Overview

Nymex WTI vs Maya USGC



US asphalt prices



Coal Markets

Most international steam coal markets gained in August, halting losses experienced most of the year as demand faltered because of slower growth in China and Europe's economic struggles.

Average delivered prices in Europe were higher for the second month in a row, in part from a rail strike in Colombia that halted around half the country's exports between 23 July and 17 August. Coal cif Amsterdam-Rotterdam-Antwerp averaged $94.01/metric tonne for the prompt 90 days, jumping up from $89.46/mt in July and $86.79/mt in June.

Higher European delivered prices supported markets for coal loading at the South African terminal of Richards Bay. Coal fob Richards Bay for the next 90 days rose to $89.16/mt on average in August, up by $2.01/mt from July.

The Colombian rail strike lifted Atlantic basin steam coal markets, but ongoing pressures on China's economic growth have kept inventories there firm. Buyers are still said to be deferring or delaying some import cargoes there, which some sources say is keeping ships floating off the coast of China. Coal cfr south China with NAR 5,500 kcal/kg fell to an average $80.19/mt in August, down from $82.60/mt the previous month.

Crude Markets

Outright crude oil prices continued to firm, showing large gains for a second consecutive month. Prices averaged $94.16/bl in August, for a gain of $6.23/bl from the previous month.

Prices firmed on the back of supply side fears as North Sea field maintenance curbed European availabilities and as US crude inventories fell by some 9mn bl over the month.

In the US, the gap between sweet and sour grades narrowed by 32c/bl in August to average $4.60/bl for the month. The spread narrowed as light grades softened on increasing supply as growing volumes of light crude arrive into the US Gulf coast from shale formations such as the Bakken and Eagle Ford. Heavier grades fared better as demand remained healthy with refiners looking to increase middle distillate production.

The spread between sweet and sour grades in Europe remained inverted but improved as lighter grades gained ground. For August, sweet crudes were on average around $1.40/bl below their heavier counterparts, narrowing the gap by more than $1.05 from July.

Heavy crudes were under pressure in August because of softer fuel oil margins and as refiners with the capability to make a switch choose to run the more-economic lighter crudes. Maintenance at the North Sea also curtailed supply of lighter crude, helping to boost values.

In west Africa, lighter sweet grades widened their premium over heavier crudes by over 30c/bl in August to an average of $2.05/bl. Medium and heavy grades out of the region were weighed down by subdued Chinese buying while Indian demand for lighter crudes continued to support their values over the month. Healthy demand out of Europe also helped to clear light crude shipments for September faster than the market was anticipating.

US Clean Product Markets

US products prices firmed, as Hurricane Isaac shut down significant refining capacity in Louisiana, and Venezuela's Amuay refinery shut down following an explosion late in the month.

Gasoline values firmed, especially on the Atlantic coast, as

Energy Market Overview

imports out of the Gulf coast slowed and the arbitrage from Europe also remained closed. Refinery closures in Europe have limited available cargo shipments of gasoline for delivery to the US. At least five Louisiana refineries shut down completely ahead of Hurricane Isaac.

Damage from the storm was insignificant, but re-start time took at least a day at most of the refineries. Diesel exports to Latin America were also slowed by the storm, but Latin American buyers were active in the market, looking to offset potential supply disruptions because of the Amuay closure.

US Fuel Oil Markets

Fuel oil prices fell at the end of August despite the effects of Hurricane Isaac and the Amuay refinery explosion.

Venezuela's PdV supplies Chinese PetroChina with up to 250,000 b/d of fuel oil, largely from Amuay. Most of the refinery's fuel oil supplies are stored off site, and exports were running on schedule from PdV stocks.

But Gulf coast fuel oil producers were watching PdV exports closely in anticipation of an opening arbitrage to Singapore.

The arbitrage to Singapore from the Gulf coast was closed in August, keeping supplies in the region.

Thin domestic demand for fuel oil and weak margins meant that refiners were looking to avoid fuel oil-rich crudes to run as feedstock.

EU Emissions Markets

Prices in the EU emissions trading scheme (ETS) allowance market strengthened over August.

The December 2012 allowance contract reached €8.00/mt CO2 equivalent (CO2e) on 28 August, up by €1.04/mt CO2e from the end of July.

Allowance prices were buoyed by utility hedging, strengthening power prices as the profitability of burning coal increased, which increased demand for emissions allowances.

Australia's proposed linking of its domestic ETS with the EU ETS from 1 July 2015 was announced at the end of August and gave a strongly bullish impetus to the market. But the sentiment quickly faded after market analysts said extra demand from the Australian scheme was likely to be less than initially assessed.

The secondary clean development mechanism (CDM) certified emission reduction (CER) market was mostly unchanged in August, after failing to track the allowance market's substantial gains.

The CER December 2012 contract ended August at €2.96/mt CO2 equivalent (CO2e), up by only €0.05/mt CO2e from the end of July.

The CER December 2012 contract traded in a relatively narrow range, hitting a low of €2.63/mt CO2e on 30 July and reaching a high of €3.07/mt CO2e on 23 August.

US Emissions Markets

The Cross-State Air Pollution Rule was struck down by the US Circuit Court of Appeals for the District of Columbia on 21 August, causing prices for SO2 and NOx allowances issued under the rule to fall drastically, while prices for Clean Air Interstate Rule (CAIR) allowances firmed.

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Prices for vintage 2012 group 1 SO2 allowances tumbled to $30/mt from $200/mt on the day the rule was vacated, while group 2 allowances dropped to $30/mt from $250/mt. Forward contracts for December 2012 delivery have retained some residual value because market participants are looking to close out positions before the allowance transfer mechanism is shut down.

Prices for CAIR annual and ozone season NOx allowances picked up following the demise of the cross-state rule with several trades reported.

Prices for vintage 2012 annual NOx allowances rose to $40/mt from $25/mt, following the court's ruling, while ozone season NOx prices spiked to $20/mt from $7.50/mt before easing to $12.50/mt at the close of the month.

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Contact us at coke@argusmedia.com.

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