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Australian Government
**Australian Customs and
Border Protection Service**

TRADE MEASURES BRANCH CONSIDERATION REPORT NO. 174

APPLICATION FOR CONTINUATION OF ANTI-DUMPING MEASURES

**POLYVINYL CHLORIDE HOMOPOLYMER RESIN
(PVC)**

EXPORTED FROM

THE UNITED STATES OF AMERICA (USA)

23 May 2011

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1 Summary and recommendations

This report provides the results of the consideration of an application lodged by Australian Vinyls Corporation Pty Ltd (AVC) for the continuation of anti-dumping measures that apply to polyvinyl chloride homopolymer resin (PVC) exported to Australia from the United States of America (USA).

1.1 Recommendations

It is recommended that the delegate of the Chief Executive Officer (CEO) of the Australian Customs and Border Protection Service (Customs and Border Protection) decide not to reject the application.

If the delegate accepts this recommendation, to give effect to that decision, the delegate must publish the attached notice at **Appendix A** indicating that Customs and Border Protection will inquire into whether the continuation of the anti-dumping measures is justified.

1.2 Application of law to facts

Division 6A of Part XVB of the *Customs Act 1901* (the Act¹) sets out among other things, the procedures to be followed by the CEO in dealing with an application for the continuation of measures.

The Division empowers the CEO to reject or not reject an application for continuation of anti-dumping measures.

Depending on the CEO's decision, it may be necessary for the CEO to publish a notice indicating that it is proposed to inquire whether continuation of the measures is justified.

The CEO's powers have been delegated to certain officers of Customs and Border Protection.

1.3 Findings and conclusions

AVC's application for the continuation of anti-dumping measures applying to PVC exported to Australia from the USA has been examined and considered.

The application lodged by AVC complies with the requirements of s.269ZHC.

Having regard to the applicant's claims and other relevant information, there appears to be reasonable grounds for asserting that the expiration of the anti-dumping measures might lead, or might be likely to lead, to a continuation of, or a recurrence of, the material injury that the measures are intended to prevent. This is based on Customs and Border Protection accepting that there are reasonable grounds for asserting that should measures expire, this might be likely to lead to an increase in the volume of PVC at dumped prices from the USA that undercut the selling prices of the Australian industry and cause price suppression and/or lost sales.

¹ A reference to a division, section or subsection in this report is a reference to a provision of the Act, unless otherwise specified.

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2 Background

On 4 March 2011, Customs and Border Protection published a notice in *The Australian* newspaper inviting certain persons to apply to the CEO of Customs and Border Protection for the continuation of anti-dumping measures on PVC exported from the USA².

On 3 May 2011, AVC, the sole manufacturer of PVC in Australia, lodged an application for the continuation of the measures³.

2.1 Existing measures

Since 1992 there have been a number of anti-dumping investigations, continuation inquires and reviews of measures in respect of PVC. Measures have been imposed on Brazil, Canada, China, France, Hungary, Israel, Japan, Korea, Mexico, Norway, Saudi Arabia, Thailand, and the USA.

Anti-dumping measures currently apply to exports from Japan and the USA (since 1992).

Since 1999, the following reports have been published:

Report	Type	Date of report	Countries	Result/comment
10	Investigation	5 Oct 1999	Hungary, Indonesia, Korea and Singapore	Measures imposed on Hungary and Korea
36	Review of normal values and non-injurious prices	28 Mar 2001	Thailand	Measures re-ascertained for Thailand
46	Continuation	8 Nov 2001	USA	Measures continued on USA
54	Investigation	22 Jun 2002	Indonesia and Israel	Measures imposed on Israel.
57	Continuation	10 Jul 2002	Japan and Thailand	Measures continued on Japan and Thailand.
91	Continuation	11 Mar 2005	Hungary and Korea	Measures continued on Hungary and Korea
100	Review of normal values, export prices and non-injurious prices	14 Sep 2005	Hungary, Korea, Israel, Japan, Thailand and USA	Measures re-ascertained for Hungary, Korea, Israel, Japan, Thailand and USA
115	Continuation	3 Nov 2006	USA	Measures continued on USA
123	Continuation	6 Jul 2007	Japan and Thailand	Measures continued on Japan
151	Continuation	25 Feb 2010	Korea	Measures discontinued on Korea

² In accordance with s.269ZHB.

³ In accordance with s.269ZHC(2).

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The current measures on imports from the USA are due to expire on 22 January 2012.

2.2 The goods subject to the measures

The goods covered by the dumping duty notice are PVC.

The goods subject to the measures do not include PVC compounds, pastes or emulsion grades.

PVC is a white free flowing powder that is used in combination with other chemicals to produce a variety of products.

The main input into the production of PVC is vinyl chloride monomer (VCM). VCM is manufactured by combining ethylene and chlorine to form ethylene dichloride that is 'cracked' in a furnace. PVC is made in a batch process in which VCM droplets are polymerised, while suspended in water, in the presence of an initiator and other additives.

PVC is sold to a range of processors who either extrude, inject, mould or blow mould the PVC to make a wide variety of goods. The major end-use of PVC based products is in the building and construction sector (e.g. pipes and fittings, cables, house cladding, gutters, down pipes, flooring and window frames). PVC based products are also used in packaging, upholstery and domestic appliances.

2.3 Tariff classification of the goods

PVC is classified under sub-heading 3904.10.00, statistical code 18, in Schedule 3 to the *Customs Tariff Act 1995*. The rate of duty from the USA is free under the Australia-United States Free Trade Agreement.

2.4 Australian industry producing like goods

AVC is the sole manufacturer of PVC in Australia. Its production facilities are in Laverton, Victoria. The company manufactures PVC and wood-plastic compounds, as well as supplying a range of imported chemicals including caustic soda, PVC processing additives, synthetic rubbers and speciality elastomers.

2.5 Australian market

During the previous continuation inquiry, Customs and Border Protection found that the market was approximately 200,000MT per annum in 2005. The applicant estimates that the market size increased to 220,000MT per annum in 2007/2008 before contracting to approximately 160,000MT per annum with the onset of the global financial crisis in 2008/2009.

The applicant now considers the market to have grown again to 180,000MT per annum in 2010.

An assessment of the volume of imports from 2007 and market size using data from Customs and Border Protection's import database is at **confidential attachment 1**.

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3 Compliance with section 269ZHC

The application lodged by AVC complies with the requirements of s.269ZHC.

3.1 Legislative framework

Section 269ZHC(1) specifies that an application under s 269ZHB must:

- (a) be in writing;
- (b) be in an approved form;
- (c) contain such information as the form requires; and
- (d) be signed in the manner indicated in the form.

Sections 269ZHC(2) and (3) cover procedural matters in relation to lodgement of the application.

3.2 Our assessment

The application lodged by AVC was in writing, in the approved form, contained such information as the form required and was signed in the manner indicated in the form.

The applicant also provided non-confidential versions of the application for distribution to interested parties. The non-confidential version of the application adequately reflects the reasons for seeking continuation of the anti-dumping measures.

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4 Consideration of reasonable grounds

Having regard to the applicant's claims and other relevant information, there appear to be reasonable grounds for asserting that the expiration of anti-dumping measures might lead, or might be likely to lead, to a continuation of, or a recurrence of, the material injury that the measures are intended to prevent.

4.1 Legislative framework

Section 269ZHD(2)(b) requires consideration of whether there appear to be reasonable grounds for asserting that the expiration of the anti-dumping measures to which the application relates might lead, or might be likely to lead, to a continuation of, or a recurrence of, the material injury that the measures are intended to prevent.

For the purposes of considering s.269ZHD(2)(b), the applicant's claims have been examined and assessed according to whether it is reasonable to assert that, in the absence of anti-dumping measures, exports of the goods might:

- 1) continue or recur;
- 2) be at dumped prices; and
- 3) lead to a continuation of, or recurrence of material injury.

4.2 Is it reasonable to assert that exports of the goods might continue or recur?

4.2.1 Applicant's claims

While there is currently no imports of PVC from the USA the applicant argues that in the absence of measures imports from the USA would recur in significant volumes. It claims that the manufacturers of PVC in the USA are export driven and as a result would seek to supply the Australian market if measures were removed.

AVC argues that manufacturing capacity in the USA has increased by 10% since 2006 as demonstrated by a market report which shows the PVC supply/demand balance in the USA over the course of a decade. AVC asserts that, at the same time, due to a deterioration of economic conditions in the USA domestic sales have decreased. As a result, AVC argues that manufacturers increasingly turned to export markets to sell their goods in order to maintain capacity utilisation. Accordingly, American export volumes have increased by 100% from 2008. AVC provided evidence of this increase in the form of a market report, which summarised American export volumes from 2008 to the start of 2011.

In addition, despite the recent absence of imports, the applicant claims that there are established distribution links in the region and in Australia that exporters could use to once again commence importing into Australia.

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4.2.2 Our assessment

Customs and Border Protection has reviewed the documents the applicant provided to support its claims regarding manufacturing capacity, domestic sales volume and export sales volume for manufacturers in the USA. Customs and Border Protection notes that the export volumes listed in the PVC supply/demand report are not consistent with the second market report which only summarises export volumes. Furthermore, the PVC supply/demand report appears to be prospective, as it lists supply/demand values several years into the future and it is unclear which, if any, information it contains is actual data as opposed to future estimates. Nevertheless, open source research confirms that that PVC manufacturing capacity has increased in the USA in the past few years and that the market currently has excess capacity (**non-confidential attachment 1**). A chemicals market intelligence company ICIS (Chemical Industry News and Intelligence) reported in 2008 that several American PVC manufacturers had recently increased their capacity and further increases were planned⁴. In 2011, the Plastics News reported that the collapse of the housing market in the USA had resulted in excess capacity⁵.

The second document provided by AVC, which summarised export volumes from the USA, appears to be based on actual, rather than prospective data. This document shows that export sales have increased over the past few years. ICIS also comments on the increased reliance on exports by American manufacturers and states that in the past five years exports have increased seven-fold⁶. The Plastics News also argues that American manufacturers are currently relying heavily on exports in the face of domestic recession⁷. Based on the indications of overcapacity in the American domestic market and evidence of reliance on export sales, it is reasonable to assert that in the absence of measures the volume of PVC exported to Australia may increase.

4.3 Is it reasonable to assert that exports of the goods might be at dumped prices?

4.3.1 Applicant's claims

The applicant argues that US manufacturers are exporting PVC at dumped prices to other markets and if measures expire it is likely that imports to Australia will also be at dumped prices.

The applicant provided industry publications that listed both the domestic selling price of PVC in the USA and the export price. The applicant asserts that these publications show that in the period of April 2010 to March 2011 exports of PVC from the USA had dumping margins of 15-79%.

⁴ *PVC Overcapacity May Last Long*, 2008, <http://www.icis.com/Articles/2008/02/04/9095928/us-pvc-overcapacity.html> ;

⁵ *Exports Prop up PVC Sales, 2011*, <http://plasticsnews.com/headlines2.html?id=21617>.

⁶ *Prospects for North American Petrochemical Producers Improve, 2011*, <http://www.icis.com/Articles/2011/03/21/9444238/prospects-for-north-american-petrochemical-producers.html>.

⁷ *Exports Prop up PVC Sales, 2011*, <http://plasticsnews.com/headlines2.html?id=21617>.

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The applicant examined the export price of American PVC to New Zealand, as information restrictions prevented it from identifying imports into Australia by source. AVC observed that the New Zealand market is in the same geographic region and does not have any import barriers or duties in place.

The applicant compared the import price of American PVC into New Zealand with the American domestic prices listed in the industry publications and found that these shipments were also at dumped prices of between 42-79%.

The applicant concluded from these calculations that the dumping duties in Australia have the desired effect of preventing the importation of dumped PVC from the USA. In the absence of measures, it would therefore be likely that dumping into Australia would resume.

The applicant also states that there are anti-dumping duties in place against PVC from the USA in Argentina, Brazil, China, India, Mexico and South Africa.

4.3.2 Our assessment

The industry publications provided by the applicant show that the domestic price of PVC in the USA is significantly higher than the price of PVC exported to other countries. While there is currently little information available regarding the differences between domestic and export sales that may affect the price comparison, it is reasonable to conclude that exports are at dumped prices.

The information provided by the applicant regarding the New Zealand market also indicates that exports of PVC from the USA are dumped in this market (**non-confidential attachment 2**).

Customs and Border Protection's import database shows that there was very little PVC from the USA imported into Australia in the last few years (**confidential attachment 1**). Therefore, it is reasonable at this stage to consider New Zealand import data as part of the assessment of the propensity to dump.

Customs and Border Protection has found that Mexico, China and Brazil continue to have dumping duties in place which also indicates the propensity of American PVC exporters to dump. Therefore, there are reasonable grounds for asserting that the expiration of measures might lead to dumping.

4.4 Is it reasonable to assert that exports of the goods might lead to a continuation of, or recurrence of material injury?

4.4.1 Applicant's claims

The applicant claims that the expiration of the anti-dumping measures in relation to PVC might lead, or be likely to lead to a continuation of, or a recurrence of, the material injury the measures are intended to prevent.

AVC argues that in the absence of measures the price of dumped PVC from the USA will undercut the price of imports from other countries and sales by the Australian industry. AVC asserts that in many cases, American manufacturers export PVC at prices that are below cost. The industry publications provided by

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the industry show that the export price of PVC is generally below the price of PVC's main input, vinyl chloride monomer (VCM). Therefore, AVC argues that imports at these prices will cause injury.

The applicant argues that it is currently in a vulnerable financial position and therefore is particularly susceptible to injury. It provided information which showed that its financial position has deteriorated since 2009.

The applicant claims that due to these factors, the expiration of measures will likely lead to an increased volume of dumped imports from the USA and that these imports will undercut industry's selling prices leading to reduced profits and profitability at a time at which the company is already vulnerable.

4.4.2 Our assessment

The price undercutting analysis provided by AVC shows that the price of dumped imports from the USA would undercut industry's selling prices. This analysis used the FOB price of PVC imported into New Zealand, plus an amount for ocean freight, import costs and trader's margin, as would be incurred with sales in Australia, and compared them with sales by AVC (**confidential attachment 2**). The level of price undercutting demonstrated is significant. It is possible that it would lead to the recurrence of material injury to the Australian industry through lost sales or price suppression and depression, if the volume of exports of was significant enough to influence market prices.

In assessing whether possible dumped export prices would be injurious to the Australian industry, Customs and Border Protection typically calculates and undertakes a comparison to an equivalent non-injurious price. That is, prices at which exports are unlikely to cause material injury. This price is calculated by estimating an unsuppressed selling price (USP) that the industry could be expected to achieve in a market unaffected by dumping, less adjustments for post-exportation expenses to derive the free-on-board non-injurious price.

In the 2005 review of anti-dumping measures applying to PVC⁸, Customs and Border Protection established a USP having regard to AVC's vinyl chloride monomer (VCM) costs in the review period plus the difference between the VCM costs and PVC selling prices in the year ending 30 June 1999, a previously identified period unaffected by dumping.

Given that there have been no imports of PVC from the USA since the start of 2009, it is reasonable to expect that the Australian market is unaffected by dumped imports and therefore AVC's selling prices would equally be unaffected by dumping. Customs and Border Protection considers that the industry's weighted average selling price of PVC during 2010 would provide a reasonable basis for estimating the USP.

After deducting post-exportation expenses provided by AVC in its application, Customs and Border Protection has calculated a non-injurious price and compared this to AVC's estimates of allegedly dumped export prices from the USA to New Zealand. It shows that the export price is below the non-injurious price (**confidential attachment 3**).

⁸ Trade Measures Report No.100

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Customs and Border Protection intends seeking the views of interested parties on the appropriateness of the USP estimate during the inquiry.

Based on the undercutting found above and indications of likely American export prices being at injurious levels, there are reasonable grounds for asserting that should measures expire, it may lead to a reoccurrence of material injury.

4.5 Conclusion on “reasonable grounds”

There appear to be reasonable grounds for asserting that the expiration of anti-dumping measure to which the application relates might lead, or might be likely to lead, to a continuation of, or a recurrence of, the material injury that the measures are intended to prevent.

Accordingly as the delegate of the CEO you are recommended not to reject the application.

In accordance with s 269ZHD(4) you will need to publish a notice indicating that it is proposed to inquire into whether continuation of the measures is justified.

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5 List of Attachments

Appendix A	Public notice under s. 269ZHD(4)
Non-Confidential Attachment 1	Articles on PVC capacity in the USA
Non-Confidential Attachment 2	Analysis of Import Data and Dumping Margins for New Zealand
Confidential Attachment 1	Volume of Imports and market size
Confidential Attachment 2	Price undercutting analysis
Confidential Attachment 3	Non-injurious price and undercutting analysis

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Appendix A

Customs Act 1901 – Part XVB

Polyvinyl Chloride Homopolymer Resin (PVC) exported from the United States of America (USA)

Initiation of continuation inquiry

Notice under s. 269ZHD(4)

The Chief Executive Officer (CEO) of the Australian Customs and Border Protection Service (Customs and Border Protection) will inquire into whether the continuation of anti-dumping measures in respect of polyvinyl chloride homopolymer resin (PVC), exported from the United States of America (USA) is justified. The inquiry will commence on 23 May 2011.

The goods subject to anti-dumping measures, in the form of a dumping duty notice, are PVC. The goods subject to the measures do not include PVC compounds, pastes or emulsion grades.

PVC is classified under sub-heading 3904.10.00, statistical code 18, in Schedule 3 to the *Customs Tariff Act 1995*. The rate of duty from the USA is free.

Anti-dumping measures applying to PVC exported from the USA were initially imposed by the then Minister responsible for Customs and Border Protection following consideration of Anti-Dumping Authority (ADA) Report No.52 in 1992. The measures have subsequently been continued for a further five years on three occasions (ADA Report No.160, Trade Measures Report No.46 and Trade Measures Report No.115 relate). The measures are in the form of anti-dumping duties on all exporters from the USA.

Interested parties are invited to lodge written submissions concerning the continuation of the measures not later than **2 July 2011** with:

The Director
Operations 1, Trade Measures Branch
Customs and Border Protection
5 Constitution Avenue
Canberra ACT 2601

or by email tmops1@customs.gov.au, or by fax number 02 6275 6990.

Confidential submissions must be clearly marked "In-Confidence" and be accompanied by two non-confidential versions suitable for placement on the public record. All non-confidential submissions will be placed on the public record for this inquiry together with a copy of all relevant correspondence between Customs and Border Protection and other persons.

A statement of the essential facts on which the CEO proposes to base a recommendation to the Minister for Home Affairs (the Minister) will be placed on the public record by 10 September 2011, or such longer period as the Minister allows under s. 269ZHI of the *Customs Act 1901* (the Act). Interested parties are invited to lodge submissions in response to the statement of essential facts within 20 days of that statement being placed on the public record. These submissions should also be lodged with Customs and Border Protection at the above mail, fax or email addresses.

A report and recommendation to the Minister will be made on or before 25 October 2011 (or such longer period as the Minister allows under s. 269ZHI of the Act).

Unless the Minister, after considering that report, decides to take steps to secure the continuation of the anti-dumping measures, they will expire on 22 January 2012. Therefore, on and from 23 January 2012, the anti-dumping measures would no longer apply.

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Particulars of the reasons for the decision to initiate this inquiry are shown in Consideration Report No. 174 (CON 174) held on the public record. Interested parties wishing to examine the public record may do so on the internet at adpr.customs.gov.au/Customs or at Customs House, 5 Constitution Avenue, Canberra ACT during business hours by contacting Trade Measures office management on telephone number 02 6275 6547. CON 174 and all Australian Customs Dumping Notices are also available on the Customs and Border Protection website at www.customs.gov.au.

Enquiries about this notice may be directed to the case team on telephone number 02 6275 6729 or email tmops1@customs.gov.au.

Justin Wickes
Delegate of the Chief Executive Officer

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Non-Confidential Attachment 1

US PVC overcapacity

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US PVC overcapacity

Trusted market intelligence for the
global chemical and energy industries

PVC overcapacity may last long

28 January 2008 09:25 [Source: ICIS]

Roughly 1.5bn lbs/year of new capacity is projected to come on in North America in 2008. The timing could be a lot better

Ivan Lerner/New York

RECENT CAPACITY increases by several **polyvinyl chloride** (PVC) producers in the US have raised concerns about overcapacity, especially with housing construction down. That excess PVC may lead to a downturn in pricing, and to a hit to already thin margins.

Houston, Texas-based **Shintech**, part of Japan's **Shin-Etsu** Group, plans to have its new PVC facility in Plaquemine, Louisiana, up and running this quarter. The plant will have an initial capacity of 300,000 tonnes/year (661m lbs/year) and will be expanded to 600,000 tonnes/year by 2010. This will increase Shintech's North American capacity to 2.34m tonnes/year.

Another Houston-based producer, **Westlake Chemical**, is investing \$90m to expand PVC capacity at its Calvert City, Kentucky, plant by 136,000 tonnes/year by 2009, increasing **total** company capacity to around 771,000 tonnes/year.

Atlanta, Georgia-based **Georgia Gulf** began a \$100m, 20,400 tonne/year PVC expansion at its Plaquemine site in the summer of 2006. This will increase capacity to roughly 580,400 tonnes/year. The expanded facility is now in its testing phase.

Market participants are hopeful that a series of temporary plant closures by Georgia Gulf will relieve PVC capacity pressure, however. The company has begun to shut down about 317,600 tonnes of capacity at several facilities.

North American nameplate PVC capacity is about 6.2m tonnes for 2007, according to Houston-based consultancy **Chemical Market Associates Inc.** (CMAI). CMAI forecasts global demand for PVC to increase by 4%/year through 2012, with developing nations having higher growth rates.

According to the consultancy, a total of 5.5m tonnes of capacity have been added to the global market from 2004-2007, representing 14.4% of current global capacity (estimated at 44m tonnes).

According to market research firm **Frederonia Group**, US PVC demand in 2006 was 15.8bn lbs, and the US PVC industry was worth about \$5.3bn.

WINTERTIME BLUES

The PVC market is routinely characterized by cyclicality, note several industry participants. "It is true we are in a downturn now, but we have been through this before and we know it is cyclical," says Allen Blakey, senior director of public affairs for the Arlington, Virginia-based PVC trade association **The Vinyl Institute**.

While acknowledging that some in the vinyls industry are estimating that a downturn could last a year or two, he adds that there was a previous market downturn in 2001-2002, followed by, in 2003-2004, an 8% upturn in vinyls production.

However, overall demand (domestic sales plus exports) for PVC in 2008 should be about the same as 2007, estimates CMAI. "Not much growth is expected, but also a decline is not expected," says Steven Brien, CMAI's global business director for chlor-alkali and vinyls.

"The unusual item this winter is that PVC prices have been moving upward due to cash cost increases [but] not due to demand increases [and] PVC margins have been shrinking due to higher cash costs to produce," says Brien.

Overall, the manufacture of PVC is still not profitable due to the increased pressure on margins from higher raw material costs, notes Dick Heinle, vice president of PVC at **Formosa Plastics**, based in Livingston, New Jersey. Heinle does note that the commercial market has compensated for weakness in the residential market.

Bank of America estimates that every \$10/tbl increase in the price of oil means a corresponding increase of about 5 cents/lb in PVC. ICIS pricing notes that PVC producers took a hit when feedstock **ethylene** increased by roughly 50% in 2007.

Heinle states that as a result of compressed margins, price increases have been announced and implemented.

But about 70-75% of PVC is used in housing construction, and the **National Association of Home Builders** expects new home construction in the US in 2008 to fall about 20% to 1.08m units compared to 2007's 1.35m new housing starts. US housing peaked in 2005, with 2.1m units constructed.

FINANCIAL FROWNS

Financial analysts at JPMorgan, HSBC and Bank of America express concern about new PVC capacity being added at a time when none seems needed.

Bank of America analyst Kevin McCarthy expects industry operating rates to decline seasonally to 82% this winter, from 90%.

Additionally worrisome, McCarthy believes nonresidential construction, which has been relatively unaffected, could begin to soften in mid-2008. "We still expect a highly competitive PVC landscape in 2008 with net capacity expansion of 4.5% into a shrinking market," says McCarthy.

Domestic sales have declined approximately 6% from 2006 to 2007, "making PVC the worst-performing resin along with **polystyrene**," says McCarthy. "The only good news this year has been the increase in net exports."

SELLING GLOBALLY

According to ICIS pricing, US producers have been able to match prices in foreign markets, irrespective of US market dynamics. Bank of America notes that Western Europe now has the highest-priced PVC market, giving US producers opportunities to export.

Rising prices in China, Taiwan and Thailand also spurred a recovery in the US export price, and ICIS pricing notes that the weak dollar has helped move PVC exports.

The Vinyl Institute believes much of the new American capacity will be used as export, also somewhat driven by the current low value of the dollar.

The **US International Trade Commission** said US PVC exports in November (the latest month for which statistics are available) were up 21% from the year-ago period, to 99,563 tonnes, and up 1% from the previous month. Canada received 26% of US PVC exports, followed

<http://www.icis.com/Articles/Article.aspx?liArticleID=9095928&PrinterFriendly=true> 20/05/2011

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by Brazil and Egypt.

As of mid-January, US export spot prices for PVC were \$1,000-1,050/tonne, with most deals done within the \$1,020-1,030/tonne range according to ICIS pricing. Domestic spot prices and contract prices are holding at 46-52 cents/lb. and 54-60 cents/lb. respectively.

One source has told ICIS pricing that export prices in 2008 will climb into the \$1,050-1,100/tonne range, and will continue to rise until oil prices drop dramatically.

BIG BOX BLACKBALLING

PVC's misfortunes grew in December, when Sears Holding, the parent corporation of retail giants Sears and Kmart, announced it would be joining Target, Wal-Mart, Microsoft and several other large retail-oriented companies in phasing out PVC.

In response, The Vinyl Institute will begin a campaign to further educate consumers regarding the lower quantities of energy PVC needs to be produced, as well as the fewer greenhouse gases it emits during production.

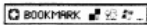
While the phaseouts will "hurt the image" of PVC, CMAI's Brien feels the actions of these retailers will have "a very small impact on demand." Formosa's Heinle says: "Once the facts are carefully considered, PVC will prove itself to be the sustainable and preferred choice."

PVC producers in North America

Major producers	Total North American capacity (bn lbs)	% of North American nameplate capacity
Shintech	4,533	25
Occidental	3,217	18
Georgia Gulf	2,7	15
Formosa	2,628	15

Source: Deutsche Bank

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PLASTICSNEWS^{EE}.COM

Exports prop up PVC sales

By Frank Esposito

April 5, 2011

PLASTICS NEWS STAFF



HOUSTON (April 5, 11:50 a.m. ET) — Exports saved the day for the U.S./Canadian PVC market in 2010. And that story might repeat itself in 2011.

“The U.S. has a special situation in PVC,” said market analyst Mike Smith with Chemical Market Associates Inc. “There’s low domestic demand, excess capacity and lower production costs” from ethylene and ethane derived from abundant natural gas in the region.

“It also has lower electric costs to make chlorine, and most PVC production is on the Gulf Coast, which makes it easier to export,” Smith said at CMAI’s World Petrochemical Conference, held March 23-24 in Houston.

Of course, the reason that North America has so much excess capacity is the collapse of the U.S. housing market. In recent years, annual U.S. housing starts have fallen from more than 2 million to less than 600,000. That’s a big deal for the PVC market, where roughly 60 percent of demand comes from construction.



Smith

“With the recession, domestic [PVC] demand plummeted,” Smith said. “Pipe producers are having another bad year, operating at 55-60 percent. They’re trying to sell pipe to municipalities that don’t have any money.

“On paper, this looks like it will be a several-year issue, through 2011-12, if not longer. PVC is a good product but it’s in a tough situation.”

Smith added that he expects low U.S. PVC costs — vs. the rest of the world — to continue for at least the next four or five years. At times, the U.S. advantage approaches 10 cents per pound. U.S.-made PVC can command higher prices overseas than it can in its own backyard.

Most PVC exported from North America ends up in South America and the Middle East. Although the Middle East also has low-priced natural gas feedstocks, resin makers there would rather use that resource on materials that are less complicated to make than PVC, Smith said. North American PVC exports totaled almost 5.3 billion pounds, with Smith expecting that number to reach almost 6.2 billion pounds by 2015.

Globally, Smith said that PVC profit margins in China remain poor because of excess capacity from coal-based production. PVC profit margins in Western Europe also remain low. Global PVC capacity expansions are expected to slow down, averaging less than 3.8 billion pounds per year.

In 2013-15, global capacity will get less than the 3.3 billion pounds of new supply needed to keep up with demand, according to Smith. This trend will reduce the amount of excess PVC capacity available. Overall, global PVC demand should average 4.6 percent growth annually between 2010 and 2015, he said.

The ranks of the world’s largest PVC makers also are likely to change by 2015, with two Chinese firms — China Salt Industries in Beijing and Xinjiang Zhongtai Chemical Co. Ltd. of Urumqi — joining the top 10. Shin-Etsu Chemical Co. Ltd. of Tokyo will remain the world’s largest PVC maker, but its share of capacity will decrease from 7.8 percent in 2010 to 6.9 percent in 2015.

Shin-Etsu and Solvay Group, the No. 4 player, remain the only true global PVC suppliers, with

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production in multiple regions, Smith said. Shin-Etsu leads the PVC market in North America as Shintech Inc. of Houston.

A major Shin-Etsu plant with 1.2 billion pounds of annual capacity in Kashima, Japan, has been taken off-line by the terrible earthquake and tsunami there, but excess capacity in the region should be able to handle demand, said CMAI analyst Steve Brien. Shin-Etsu's Kashima plant is expected to be out of commission for at least three months.

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Trusted market intelligence for the global chemical and energy industries

Prospects for North American petrochemical producers improve
17 March 2011 16:40 [Source: ICB]

Ethane cracking from abundant shale gas boosts worldwide competitiveness, but what are the challenges?

It was not long ago that the North American chemical market was considered to be low growth and low margin. However, in 2010 that changed dramatically for major producers.

US-based **ExxonMobil Chemical's** US chemical profits more than tripled to a record \$3.14bn (€2.25bn). US-based **Dow Chemical's** North American sales increased by 16% to \$19.4bn, which is the fastest growth of all geographic regions.

Netherlands-based **LyondellBasell's** global EBITDA (earnings



Jim Sneddon

before interest, tax, depreciation and amortization) increased by 80% to \$4bn, led by particularly strong results in the US. **Georgia Gulf**, a smaller US chemical company focused in North America on the challenging vinyls industry, saw its sales grow by 40% to \$2.8bn, and its operating income increase to \$114m from essentially breaking even in 2009.

What has caused this turnaround, and is it sustainable? While there has been a recovery in regional demand, it has only been a return to demand levels of 2008 at best. **Nexant** would assert that the primary driver of renewed profitability and growth in the North American chemical industry has been the emergence of shale gas and the accompanying gas liquids.

SHALE PROVIDES BOOST

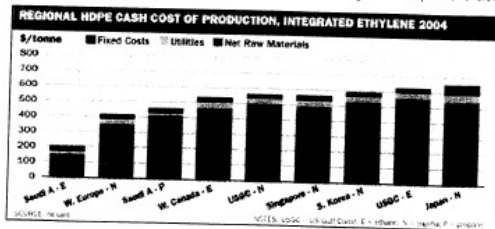
Shale gas production in the US has grown eightfold in the past 10 years, and now accounts for some 12% of total gas production.

This rapid growth in gas supply has resulted in the decoupling of natural gas prices from oil and refined product prices. US natural gas prices are currently about one-quarter that of oil on an equivalent energy basis.

Even more important than the lower-priced energy source has been the impact on natural gas liquids production, commonly found in shale gas. Ethane is the most economical feedstock for the largest-volume petrochemical, **ethylene**. At low natural gas costs, there is even more incentive to extract ethane from the gas. US ethane production has increased by one-third to 17m tonnes/year in the past five years.

US ethylene producers have been taking advantage of increasing ethane supplies. About 63% of 2010 US ethylene production of 24m tonnes was based on ethane - up from 46% five years ago, while the C5+ ethylene feedstocks accounted for only 19%, compared to 32% five years ago.

The result of these developments has been a significant increase in the competitiveness of US petrochemical manufacturers in global markets. The charts compare the integrated cash cost of high density polyethylene (**HDPE**) from numerous global sources including both HDPE produced from ethylene via ethane cracking, and naphtha cracking as it was in 2004 and as it is now.

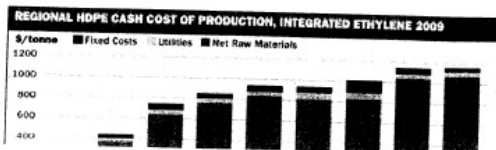


In 2004, US natural gas prices were equal to that of crude oil on an energy-equivalent basis, and US ethylene cash costs from ethane were actually higher than those from naphtha. Now integrated HDPE cash costs from ethane have moved dramatically down the global cost curve.

Evidence for this can be seen in trends in US chemical exports. The US has gone from being a net importer of polyethylene (PE) five years ago, to a major net exporter today, especially in HDPE.

Polyvinyl chloride (PVC), a product in which the US was losing its export position, has shown a seven-fold increase in net exports over the past five years. One-third of US PVC production is currently exported, even in the face of dramatic increases in PVC

capacity in China.



The reaction of the US petrochemical industry has been to initiate investments to increase feedstock flexibility to utilize light feedstocks, as opposed to heavier naphtha or gas oil. The tougher question is whether to actually increase petrochemical capacity significantly, when the incremental market to be served is the export market.

SHALE GAS PRODUCTION DRIVERS

<http://www.icis.com/Articles/Article.aspx?liArticleID=9444238&PrinterFriendly=true> 20/05/2011

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How is one to address this question? First, there is the issue of the longer-term outlook for shale gas and other unconventional natural gas production and pricing in North America. North American shale gas production will be driven by:

Production wells - Due to the intrinsic characteristics of unconventional natural gas deposits, the transmissibility (flow) of fluids from the formations is severely constrained by the low permeability of the rock formations. In order to contact and effectively drain the reservoirs, more wells are required than for conventional gas reservoirs. The higher number of production wells also increases the production infrastructure and corresponding costs. Horizontal-drilling technology has helped to reduce the number of wells needed, however, as the cost of a horizontal well is substantially higher than that of a vertical well.

Fracture stimulations - The lower permeability of unconventional gas reservoirs also reduces the individual well productivities, resulting in a slower cost recovery. The improvements in hydraulic fracture stimulation technology - through new fluid systems, multistage and simultaneous stimulations - reduced damage to the proppant pack, and three-dimensional fracture simulators have significantly increased the production rates. However, the stimulations are expensive, requiring a substantial mobilization of equipment, materials and manpower.

Environmental protection - The management of produced waters, especially in coal seam gas operations, is a critical issue that can significantly impact the economics of unconventional gas projects.

Developers are employing innovative solutions to treat and dispose of the produced waters, including re-injection into reservoirs to enhance oil recovery.

OPERATIONAL CHALLENGES

The technical and operational challenges associated with shale gas development include:

Groundwater contamination - Because shale deposits are thick, the application of massive fracture programs increases the risk of generating and extending fractures into adjacent strata, potentially contaminating groundwater formations.

Land use - The development of shale gas deposits requires thousands of wells requiring numerous well sites, roads for access, water transport pipelines, and transmission lines for delivering the gas offsite.

All of these compromise large surface areas and could be detrimental to the competing use or interests of the landowners.

The tougher question is whether to actually increase petrochemical capacity significantly, when the incremental market to be served is the export market

Water availability - The fracture stimulations require hundreds of thousands of gallons of water for each fracture stage. In areas that have seasonal variations in the availability of water, the operators must construct reservoirs that are used to store diverted river water during periods of higher flow. The potential impacts include fresh aquifer and stream flow depletion, and disruption and shortages of drinking water.

Water disposal - One of the biggest challenges facing the operators is the cost to transport and dispose of wastewater from drilling and fracturing operations to offsite treatment plants. A typical hydraulic fracture for a well in the Marcellus Shale deposit in Western Pennsylvania returns between 2m and 3m gallons of water.

In addition, there is the outlook for overall energy demand and the role of natural gas in power generation as an alternative to coal. This will be another key driver in the long-term price of natural gas and gas liquids in North America.

Finally, there are the developments in the global chemical industry in which North America operates.

William Tittle, principal and director of Strategy, Americas and Asia at Nexant, has worked in the chemical business arena for more than 35 years in various capacities. He can be reached at wtittle@nexant.com.

Nexant is initiating a multi-client study on North American shale gas and its impact. Contact Heidi Coleman at hcoleman@nexant.com

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Non-Confidential Attachment 2

Month	Lowest US Domestic Price* (USD/MT)	Highest US Domestic Price* (USD/MT)	Exchange rate#	Lowest US Domestic Price* (AUD/MT)	Highest US Domestic Price* (AUD/MT)	^NZ Export Prices (AUD)	Dumping Margin** (AUD/MT)	%
Apr-10	1477	1620	0.92649	1594	1749	1003	591	59%
May-10	1477	1598	0.87171	1694	1833	1025	669	65%
Jun-10	1411	1532	0.85291	1654	1796	1043	611	59%
Jul-10	1367	1488	0.87431	1564	1702	1052	511	49%
Aug-10	1345	1466	0.90005	1494	1629	1013	482	48%
Sep-10	1345	1466	0.93580	1437	1567	909	529	58%
Oct-10	1345	1466	0.98119	1371	1494	830	541	65%
Nov-10	1389	1510	0.99015	1403	1525	895	507	57%
Dec-10	1389	1510	0.99095	1402	1524	951	451	47%
Jan-11	1433	1554	0.99407	1442	1563	888	553	62%
Feb-11	1411	1532	1.00860	1399	1519	870	529	61%

*Prices taken from industry publications provided by AVC

^Export prices taken from NZ export statistics

#Exchange rate is RBA monthly average

** Dumping Margin is calculated by comparing the export price to the lowest normal value of the same month