



HU-CHEMS (069260)

Vertical Integration pays off

■ Maintain Buy with target price of W33,000

We maintain our Buy rating on HU-CHEMS with a target price of W33,000, offering upside of 57%. We employed a sum-of-parts method to arrive at a valuation for HU-CHEMS, adding the value of the company's chemical business to the value of its Clean Development Mechanism (CDM) unit. We arrived at a figure for the chemical business by applying a P/E of 7.3x to our 2009F EBITDA estimate of W82.2bn. We used a DCF analysis to value the company's CDM unit, using 12-year net emission credit revenue estimates. Although the target multiple is high compared to the respective market and chemical sector multiples of 6.9x and 6.2x, we think the stock deserves a premium due to the company's stable business structure, monopolistic market position, abundant free cash flow generation and exposure to the clean energy sector.

■ Solid sales and OP growth expected over the next two years

We forecast sales and operating profit growth for HU-CHEMS of 22% and 32% pa, respectively, over the next two years. We believe the following developments will boost the company's sales and profit margins going forward: 1) a June 8 agreement with major customers to reflect raw material price trends in DNT prices, 2) a 15-year MNB supply contract with Kumho Mitsui Chemical set to begin from next year, and 3) an expected increase in CDM revenue from this year.

We expect sales and earnings to continue to trend higher supported by a strong downstream polyurethane industry. Polyurethane industry growth has prompted makers of secondary raw materials (TDI, MDI) to increase capacity, which should continue to drive HU-CHEMS' growth.

■ Pursuing further integration

HU-CHEMS is believed to have the largest production facility and the greatest cost advantage in nitric acid among Asian producers. Nitric acid is the key basic material used in the production of polyurethane. HU-CHEMS is pursuing a growth strategy based on nitric acid to upstream (ammonia) or downstream business. Looking at future cash flow potential and the company's leading position in the nitric acid market, we believe the company's integration strategy will enhance shareholder value. HU-CHEMS is also seeking an opportunity to expand its CDM business in domestic and overseas markets seeking to leverage its operational experience. We believe such an expansion would provide a mid- to long-term growth engine.

FY	Sales (Wbn)	OP (Wbn)	OP Margin (%)	NP (Wbn)	EPS (W)	EBITDA (Wbn)	FCF (Wbn)	ROE (%)	P/E (x)	P/B (x)	EV/EBITDA (x)
12/06	301	21	7.1	15	711	42	18	9.2	12.5	1.1	3.1
12/07	302	38	12.5	28	1,328	54	28	15.5	14.3	2.1	5.9
12/08F	391	56	14.4	42	1,968	74	12	21.6	10.7	2.3	5.4
12/09F	479	70	14.6	52	2,443	87	47	24.2	8.6	1.9	4.2
12/10F	496	74	15.0	56	2,647	91	61	21.9	7.9	1.6	3.5

Source: Company data, Daewoo Securities Research estimates

Korea – Equity Research

Chemical

Buy

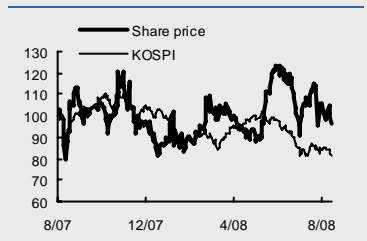
22 Aug 2008

Bloomberg: 069260 KS
 Target Price (12M, W): 33,000
 Share Price (08/21/08, W): 21,000
 Expected Return (%): 57.1
 Sector: Chemicals
 Sector Rating: Neutral

EPS Growth (08F, %): 48.2
 Market EPS Growth (08F, %): 11.7
 P/E (X): 10.7
 Market P/E (08/21/08F, X): 10.7
 Market Cap (Wbn): 447

Shares Outstanding (mn): 21
 Avg Trading Volume (60D, '000): 125
 Avg Trading Value (60D, Wbn): 5
 Margin Balance ('000 sh): 332
 Dividend Yield (08F, %): 2.7
 Free Float (%): 59.4
 52-Week Low/High: 18,200/27,000
 Beta (12M, Daily Rate of Return): 0.9
 Price Return Volatility (12M Daily, %,SD): 3.6
 Foreign Ownership (%): 3.5
 Major Shareholder(s):
 Y.C. Park et al. (36.56%)
 Nonghyup (10%)

Price Performance			
(%)	1M	6M	12M
Absolute	-8.3	1.0	5.4
Relative	-5.1	12.2	18.2



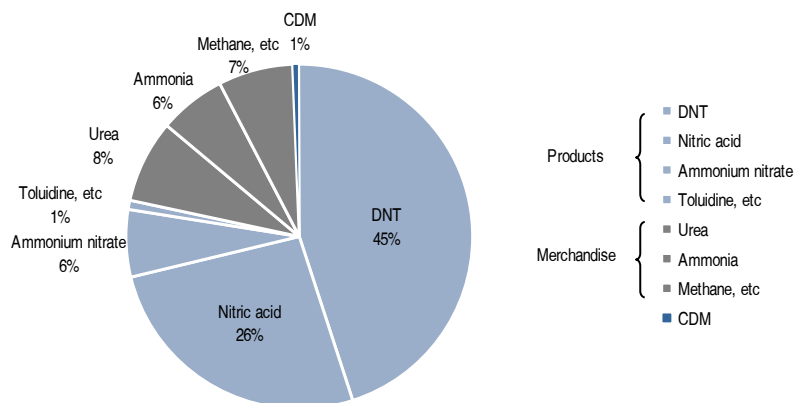
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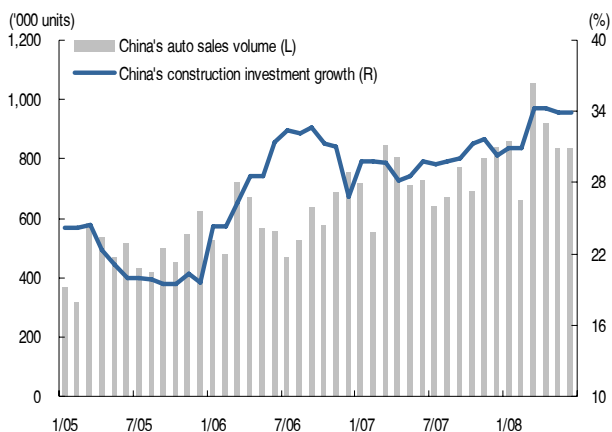
I. Key Charts

Figure 1. Revenue Breakdown (based on 2007 revenue)



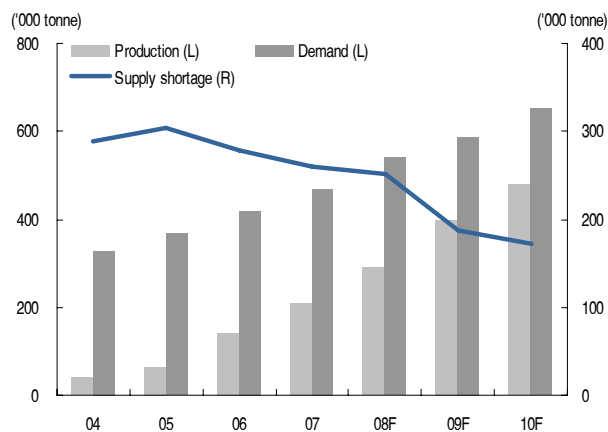
Source: Company Data

Figure 2. China's automobile and construction market growth



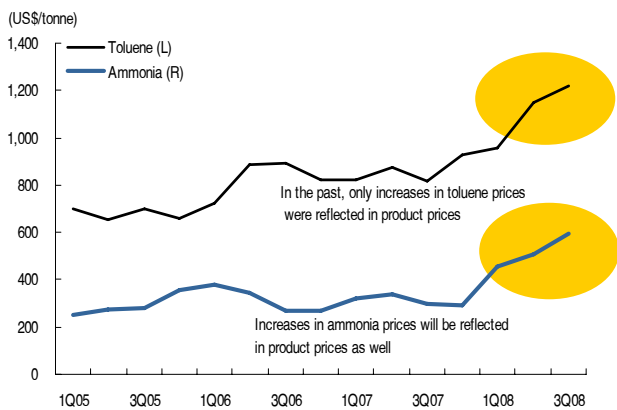
Source: CEIC

Figure 3. China's polyurethane production and demand forecast



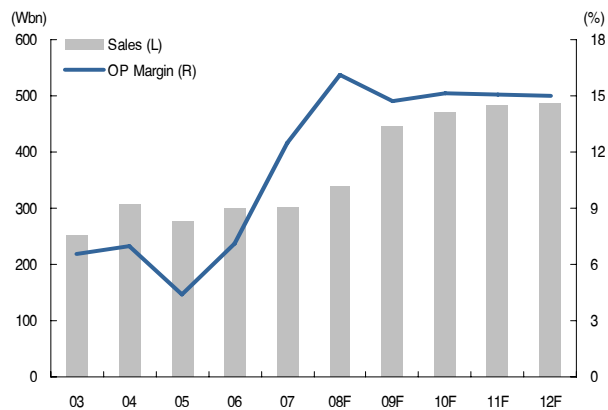
Source: Chemlocus, Cischem, Daewoo Securities Research estimates

Figure 4. Prices of raw materials for DNT



Source: Cischem

Figure 5. Sales and OP Margin



Source: Company Data, Daewoo Securities Research estimates

II. Valuation

1. Deserving of a market-leader premium

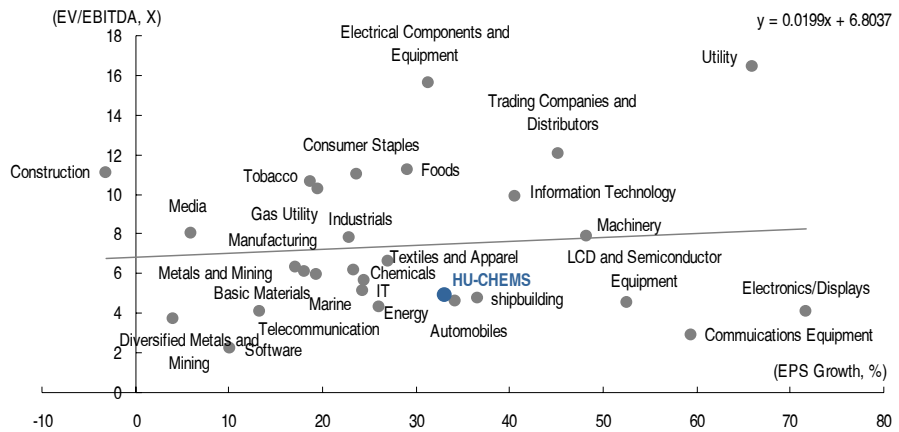
Recommend Buy with a target price of W33,000

We reiterate our Buy recommendation for HU-CHEMS with a target price of W33,000, indicating upside of 57%. The target price equates to a P/E of 13.5x and a P/B of 3.6x our 2009 earnings estimate. We derived the target price for HU-CHEMS by combining the value of the company’s chemical business (W599bn) with the present value of the CDM project (W67.2bn). We used an EV/EBITDA multiple to value the chemical business. Despite new growth prospects for the CDM business, the chemical business remains HU-CHEMS’ core asset, accounting for more than 84% of total equity value.

Applied 7.3X EV/EBITDA for the valuation of chemical division

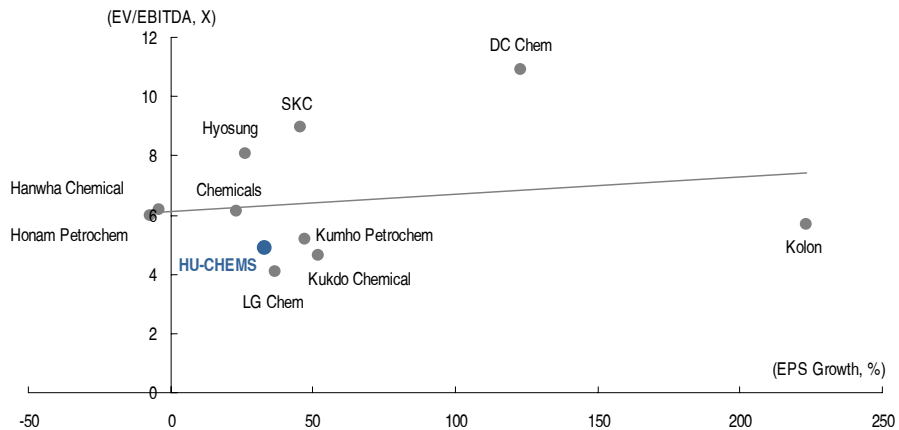
We applied a 7.3x target multiple to our 2009F EBITDA of W82.2bn to arrive at a valuation for the company’s chemical operation. Our target multiple was derived using the average two-year forward EPS growth rate and the average Daewoo Universe (ex finance) EV/EBITDA. We used the market multiple rather than the chemical sector average due to the presence of outliers in the chemical sector.

Figure 6. Average EPS growth (08~09F) vs EV/EBITDA multiple of Daewoo Universe



Source: Daewoo Securities Research estimates

Figure 7. Average EPS growth (08~09F) vs EV/EBITDA multiple of chemical peers



Source: Daewoo Securities Research estimates

Deserves premium in valuation due to low business risk and monopolistic position

Our target multiple for HU-CHEMS is higher than the market multiple (6.9X on average for 2008 and 2009 at a KOSPI of 1567.71) as well as the chemical sector (6.2X); however, we believe the stock should trade at a premium to the market and sector due to the company's low business risk (less cyclical) and monopolistic market position.

The chemical business will consistently generate operating profits in excess of W40bn from 2010, with excellent earnings visibility due to long-term supply contracts that run from eight to 15 years for major products. Furthermore, HU-CHEMS' contracts with customers include an added compensation clause if the company's capacity utilization ratio falls below a certain level (the company refuses to disclose the level). Going forward, we expect HU-CHEMS to maintain its leading position in the domestic market and to continue to enjoy profitable long-term relationships with customers.

Value of CDM business is derived using DCF method over the next 12 years

To value the CDM business we forecast W98.7bn in gross emission credit revenue over the next 12 years (from 2008 to 2019), we then discounted this amount by the three-year government bond yield of 5.66%. We assumed the company would continue to sell 1.45mn CO2 equivalent carbon credits from 2013 to 2019, but reflected only 50% of the credit in our revenue projection in order to account for risks outlined below.

Korea is currently not categorized as an industrialized country obligated to reduce gas emissions (referred to as an ANNEX 1 economy), but will likely join this group from 2013 when 100% ownership of the gas reduction facilities is transferred to HU-CHEMS from Carbon of Austria. When this occurs, HU-CHEMS will only be able to sell its remaining Certified Emissions Reductions (CER) after meeting emission reduction targets. We estimate the emission reduction target to be less than 290,000 tonnes of CER (20% of total CER sales volume) when Korea joins the Kyoto Protocol, but we placed a discount on this projection to be more conservative.

Table 1. Valuation details for HU-CHEMS

(Wbn)

	Amount	Multiple (X)	Value	Remarks
Chemical EBITDA(2009F)	82.2	7.3	599	
CDM Expected revenue (08~19F)	98.7		67.2	Present value of 2008~19F revenue
Net cash			29.5	As at the end of 2Q08
Target market cap.			695.7	
# of share outstanding ('000)			2,129	
Target price (W)			33,000	
Current price (W)			22,900	Closing price of Aug 18, 2008
Target return (%)			44.0	

Source: Daewoo Securities Research estimates

Table 2. Valuation of CDM business

(Wbn)

	08F	09F	10F	11F	12F	13F	14F	15F	16F	17F	18F	19F
Nominal revenue from CDM business (Wbn)	5.9	5.6	5.5	5.5	5.4	10.1	10.1	10.1	10.1	10.1	10.1	10.1
Volume (m tons)	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45	1.45
Price (Euro/ton)	10	10	10	10	10	10	10	10	10	10	10	10
HU-CHEMS ownership (%)	22.15	22.15	22.15	22.15	22.15	50.0	50.0	50.0	50.0	50.0	50.0	50.0
W/EURO	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395	1,395
Discount rate (%)	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66	5.66
Multiplier (1/n)	1.06	1.12	1.18	1.25	1.32	1.39	1.47	1.55	1.64	1.73	1.83	1.94
Present value of the revenue (Wbn)	5.6	5.0	4.7	4.4	4.1	7.3	6.9	6.5	6.2	5.8	5.5	5.2
Sum of nominal revenue (Wbn)	98.7											
Sum of present value (Wbn)	67.2											

Source: Daewoo Securities Research estimates

2. Valuation drivers

1) Low business risk: Earnings are highly stable thanks to the company's unique business and high barriers to entry. The company has inked 8~15-year supply contracts with key clients at prices linked to raw material costs. These contracts also guarantee a minimum utilization rate.

2) Rapid earnings improvement: The company's earnings are improving rapidly. Despite a high base of comparison for operating profit (76% YoY growth in 2007), we expect 2008 and 2009 operating profits to grow by 46% and 20% YoY, respectively. We believe the downstream market (polyurethane) will remain strong and the new MNB (Mono-Nitrobenzene) plant will be on stream from 1Q09. We expect MNB sales to come in around W160bn with W16bn in operating profit from 2010.

3) Excellent cash flow: As of June 2008, HU-CHEMS held net cash and cash equivalents amounting to W29.5bn, approximately 6.3% of current market cap. Other than a W51.8bn MNB plant investment, HU-CHEMS does not plan any large investments. We estimate the company will generate roughly W50bn in free cash flow on an annual basis. The company's superior cash generation capability should enhance shareholder value.

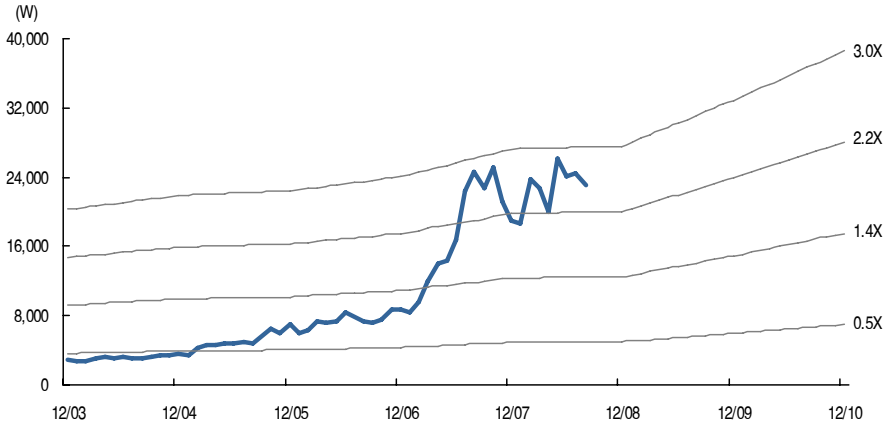
4) Overhang concern diminished: Investors who participated in the sale of the company by the National Agricultural Cooperative Federation (NACF) have already disposed of the majority of their shares. As of June 2008, the remaining stake held by these investors stood at only 34,000 shares, 1.6% of the total outstanding.

Figure 8. Share price trend of HU-CHEMS since Aug 2006



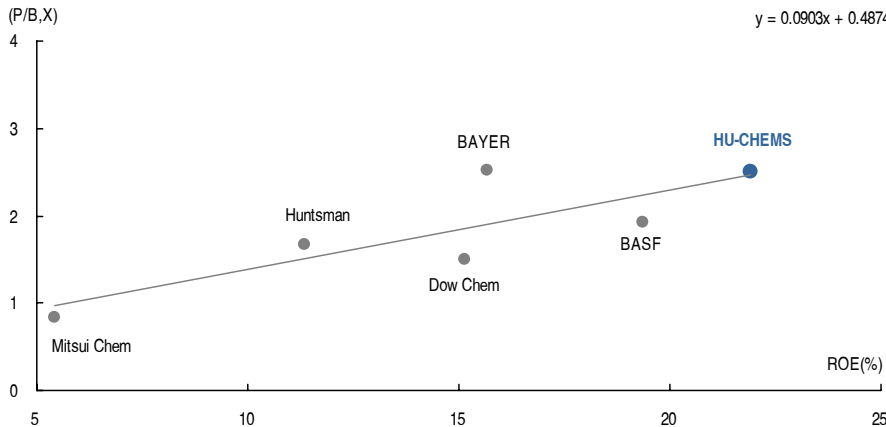
Source: Bloomberg

Figure 9. P/B trend



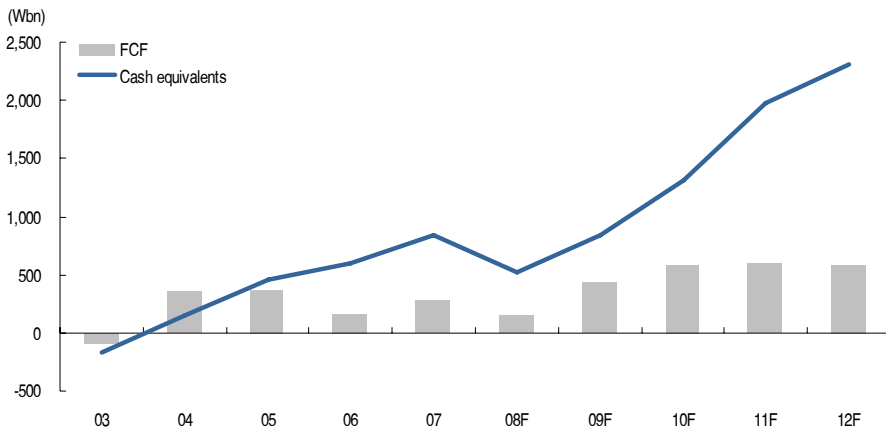
Source: Daewoo Securities

Figure 10. P/B-ROE Comparison of Global Polyurethane Companies (08F)



Source: Bloomberg, Daewoo Securities Research estimates

Figure 11. Annual free cash flow (FCF) and cash balance outstanding at each year end



Source: Company data, Daewoo Securities Research estimates

III. Company Profile

1. HU-CHEMS at a glance

Established in 2002 via a spin off from Namhae Chemical

HU-CHEMS was established in September 2002 after being spun off from Namhae Chemical Corporation (025860 KS), whose main businesses were fertilizers and fine chemicals. By splitting off into two companies, both could concentrate on their core competencies. Namhae Chemical has moved into the agricultural materials business with a concentration on fertilizers. HU-CHEMS became a provider of core materials for fine chemicals. The split ratio was 70% for Namhae Chemical and 30% for HU-CHEMS.

Dominant DNT & Nitric acid provider in Korea

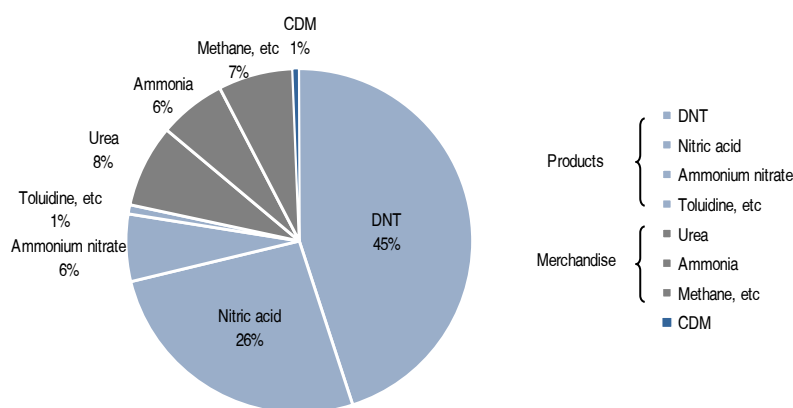
Vertically well-integrated, HU-CHEMS manufactures **Di-Nitro-Toluene (DNT)** and **Nitric acid**, and markets these two products to TDI and MDI producers. TDI and MDI are key raw materials for polyurethane. Hence, these materials are all members of the chemical feedstock associated with polyurethane production.

The company's major customers include BASF Korea, DC Chemical (010060 KS), Korea Fine Chemical (025850 KS) and Kumho Mitsui. The company's domestic market share is in excess of 80% for nitric acid and a complete monopoly on domestic DNT production. It also imports and sells basic chemical materials such as urea and ammonia for industrial use.

Entered CDM business in 2006 with Carbon from Austria

HU-CHEMS entered the Clean Development Mechanism (CDM) project with Austria's Carbon Corp. from 2006. The project started to generate profits from 2H of last year, but earnings from this business account for less than 5% of total operating profit. Nevertheless, we expect the contribution from this unit to rise to 11% this year.

Figure 12. Revenue Breakdown (based on 2007 revenue)



Source: Company data

Table 3. Key operation information of HU-CHEMS

	Capacity* ('000 tons)	07 Sales (Wbn)	% of sales	Major clients	Main usage	07 domestic market share (%)	
Products	DNT	173	135.7	45.0	DC Chem, Korea Fine Chemical	TDI, Interior materials for cars	100.0
	Nitric acid	600	79.4	26.3	BASF Korea, Kumho Mitsui, Invista	MDI, Paint	80.0
	Ammonium nitrate	33	19.3	6.4	Hanwha, Koryo Nobel Explosive	Ammunition	95.0
	Tolidine, etc.	11	2.5	0.8	Hannam, Changjin Chemical	Dyestuff, Pigment	60.0
Merchandise	Urea	-	23.4	7.8	Dongwha Chem, Hansol Homedeco	Adhesion for MDF	30.0
	Ammonia	-	18.6	6.2	Hanwha, Daesang	Polluted water treatment	10.0
	Methane, etc.	-	21.0	7.0	Hansol Chemical, Unid	Formalin, Reagent	10.0
CDM	-	1.8	0.6				
Total	-	301.8	100				

Note: capacity as of Dec 2007 Source: Company data

2. High barriers to entry

High entry barrier secures HU-CHEMS' monopolistic market position

HU-CHEMS has enjoyed a monopolistic position in the nitric acid market due to high entry barriers. Docks and storage tanks must be specially equipped to import ammonia, a raw material for nitric acid. However there are only a limited number of companies equipped with the necessary infrastructure in Korea, including Samsung Fine Chemical (004000 KS) in Ulsan and Namhae Chemical/HU-CHEMS in Yeosu. These companies both have solid client bases, providing little room for other companies to enter into this industry. As most clients for nitric acid are located in Yeosu, HU-CHEMS also enjoys high barriers to entry and is relatively free from the threat of competitors.

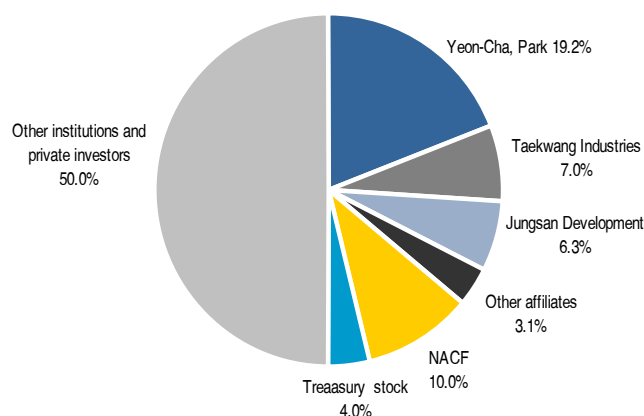
3. Ownership structure

Chairman and affiliates own 36% of the company

Mr. Yeon-Cha Park, the chairman of Taekwang Industry (unlisted) and affiliated companies are the major shareholders of HU-CHEMS, with a 36% stake. The second-largest shareholder is the NACF with a 10% stake as of July 28, 2008. Affiliates include Taekwang Industry (owns 6.96% of HU-CHEMS) and Jungsan Development Corp. (6.3%).

Taekwang Industry is one of the largest OEM manufacturers of Nike's athletic footwear. Taekwang set up Taekwang Vina in Dongnai, Vietnam in 1994, to produce sports footwear. The Vietnam subsidiary received an approval from the Vietnamese government to build an 1,800MW anthracite-fired power plant. Given Taekwang Industry's long-established business network in Vietnam, HU-CHEMS is also expected to invest in basic chemical product production or power plants in Vietnam sometime in the future.

Figure 13. Shareholders (as of July 28)



Note: Mr. Yeon-Cha Park is the chairman of Taekwang Industry and Jungsan Development
Source: Company data

IV. Business Overview

HU-CHEMS produces and sells DNT, Nitric acid, ammonium nitrate, and toluidine. These products generated 78% of total revenues last year. The company also imports or purchases urea, ammonia, and methane to meet customer demand. The sales of these products accounted for 21% of last year's total sales.

1. Chemical Business

Main products are Nitric acid and DNT, basic key materials for polyurethane

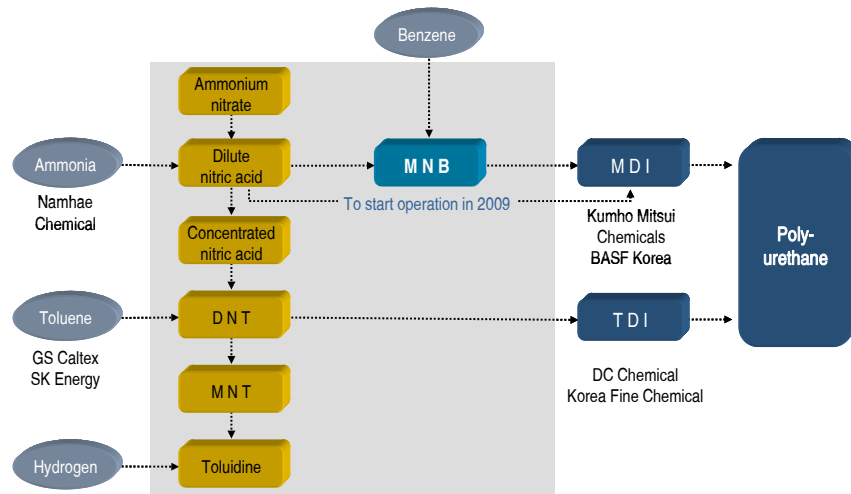
Nitric acid: Nitric acid, made by mixing nitrogen dioxide (NO₂) and water, is the basic chemical building block for Methylene Diphenyl Diisocyanate (MDI) and Toluene diisocyanate (TDI) production. MDI and TDI, respectively, are the main feedstocks for hard and soft polyurethane production.

HU-CHEMS purchases ammonia, sulphuric acid, urea, as well as other products from Namhae Chemical and manufactures nitric acid (annual capacity of 600,000 tonnes). Among them, HU-CHEMS supplies 450,000 tonnes to MDI manufacturers such as BASF Korea and Kumho Mitsui Chemicals, and consumes the remaining 150,000 tonnes internally to produce DNT, another chemical used in polyurethane production.

Nitric acid is very stable earning source with high profitability, as 100% of total nitric acid sales are made on a long-term contract basis. Hanwha Petrochemical (009830 KS) and Dongbu HiTek (000990 KS) are two major competitors in the market. However, given that both companies' annual production capacities are only 100,000 tonnes, HU-CHEMS' much greater annual capacity of 600,000 tonnes has provided a significant advantage in helping the company secure its current dominant market position.

DNT: DNT is synthesized from toluene and ammonia and used to produce TDI. HU-CHEMS is the only DNT provider in Korea and an exclusive supplier to both DC Chemical (010060 KS) and Korea Fine Chemical (025850 KS). Its annual production volume for DNT reached to 167,000 tonnes in 2007 from 152,000 tonnes in 2006 thanks to strong downstream (polyurethane) market.

Figure 14. HU-CHEMS' product chain



Note: Products in gray rectangle are produced by HU-CHEMS. MNB plant will start operation from 1Q 2009.
Source: Company data

1) Strong polyurethane demand to drive stable earnings growth

Polyurethane is a unique material that offers the elasticity of rubber combined with the toughness and durability of metal. It is widely used in common everyday products such as mattresses, thermal insulation for construction, and interior/exterior materials for automobiles.

Growing construction and automobile industries in China will lead polyurethane market growth

We believe the polyurethane market will continue to grow as the expanding construction and automobile industries in China stimulate demand. China's automobile market has grown to become the second largest in the world, with annual domestic sales volume of over 8mn units. China's construction investment also has been growing at a rapid annual pace in excess of 25% spurred by the Beijing Olympics in 2008 and Shanghai Expo in 2010. As a result, we believe the supply shortage in China is driving the polyurethane market boom in Asia.

HU-CHEMS benefits from production setbacks of competitors

Major polyurethane raw material suppliers have experienced difficulties maintaining their utilization ratios after a series of accidental shutdowns, exacerbating the shortages. For example, BASF's Schwarzheide site, Mitsui Chemicals Polyurethane, Taiwan's Nanya, India's Narmada, and local plants in China have all suffered from sudden outages. Operational troubles at competing firms benefits polyurethane manufactures in Korea including DC Chemical, Korea Fine Chemical, and HU-CHEMS. Polyurethane producers in Korea have increased their utilization ratios to meet rising demand, boosting HU-CHEMS' earnings as the supplier of the main feedstock for polyurethane production.

Global polyurethane demand will remain strong

Polyurethane demand will likely continue to be strong, in our view, for the foreseeable future due to the following:

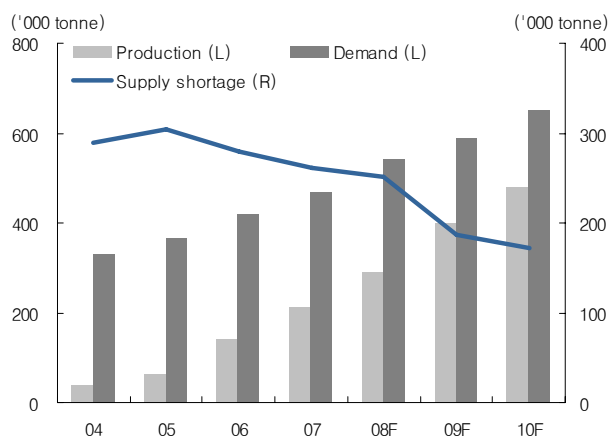
- 1) Polyurethane demand is growing globally. In addition to the eye-catching demand growth in China and other Asian markets, polyurethane demand in North America and Europe is also expected to expand by 8~10% annually through 2010.
- 2) Polyurethane production facilities are closing in the US and Europe due to environmental issues, limiting the growth of capex and polyurethane capacity outside of Asia (China).
- 3) Dominant suppliers control supply. The four major producers (BASF, Bayer, Huntsman, and Dow Chemical) have solid control over the market, which helps prevent a sharp deterioration in fundamentals.

Figure 15. China's automobile and construction market growth



Source: CEIC

Figure 16. China's polyurethane production and demand forecast



Source: Chemlocus, Ciscem, Daewoo Securities Research estimates

2) Favorable new pricing formula for DNT

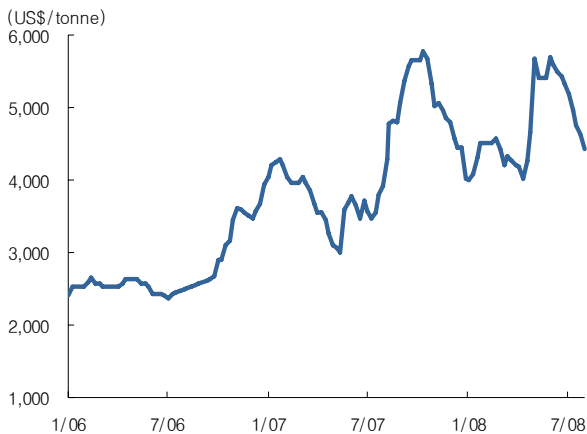
***New pricing formula:
DNT price fully inked to
raw materials, ammonia
and toluene***

HU-CHEMS is able to share in the explosive sales and profit growth of its clients thanks to the surge in polyurethane (TDI, MDI) prices. The company announced on June 8 that it had reached agreement with major customers to change the pricing formula for DNT to reflect the costs of raw materials ammonia and toluene in the sales price. Based on the new pricing policy, we anticipate up to W10bn in additional operating profit for 2H08 and W15bn for 2009.

In the past, prices of DNT were linked to the price of toluene. The formula used to calculate DNT supply prices is as follows: the ammonia price is fixed at \$180/tonne and 85% of the toluene price is linked to the market price. Since 2003, ammonia and toluene prices have surged by 69.8% and 15% YoY, respectively. As such, DNT business profitability has been undermined by a surge in ammonia prices amid an upturn in the fertilizer market.

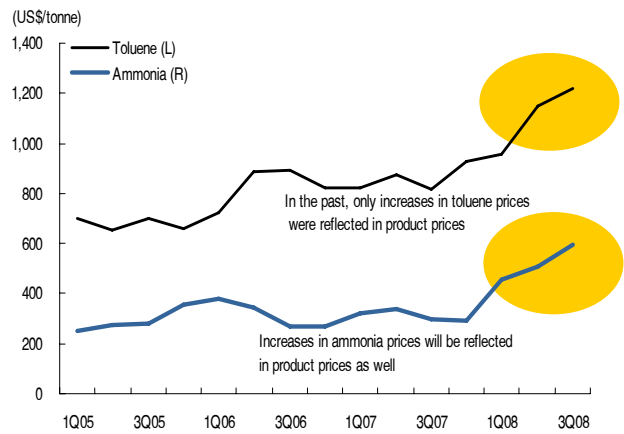
Taking full advantage of its monopolistic position in the nitric acid and DNT markets, HU-CHEMS' contracts with DC Chemical and Korea Fine Chemical include retroactive clauses providing for compensation to be linked to higher raw material prices from January of 2008.

Figure 17. TDI prices trend



Source: Cischem

Figure 18. Prices of raw materials for DNT



Source: Cischem

3) A new growth engine: MNB business

HU-CHEMS' business model is unique – very stable, but at the same time it requiring constant refiguring to boost growth potential. HU-CHEMS' two key products, nitric acid and DNT, generate relatively high and stable margins, but growth potential is limited. Additional sales are possible only when customers expand capacity.

***15-year MNB supply
contract to add sales
over W124bn from 2009***

HU-CHEMS entered the mono-nitrobenzene (MNB) business after securing a 15-year contract to supply 150,000 tonnes/year of MNB to Kumho Mitsui Chemicals from 2009. Kumho Mitsui Chemical, which has produced MNB using nitric acid supplied by HU-CHEMS, decided to increase its polyurethane (MDI) production capacity from 70,000 tonnes to 140,000 tonnes, and to stop the production of MNB. This will greatly benefit HU-CHEMS. The company will produce and supply the intermediate material MNB in addition to nitric acid. HU-CHEMS' MNB sales are expected to increase by W124bn in 2009 and by more than W160bn in 2010. HU-CHEMS' MNB plant investment is estimated at W52bn.

2. CDM business

1) What are CDM and CER?

CDM: an arrangement under the Kyoto Protocol whose central objective is to reduce greenhouse gasses

The Clean Development Mechanism (CDM) is an arrangement under the Kyoto Protocol with the central objective of reducing emissions of greenhouse gasses responsible for global climate change. The Kyoto Protocol separates nations into two general categories: industrialized countries obligated to reduce greenhouse gas emissions and developing countries without such obligations but participating in the CDM. The CDM is a mechanism that allows industrialized countries with a greenhouse gas reduction commitment to invest in emission reducing projects in developing countries as an alternative to emission reductions in their own countries. Korea is not categorized in the group obligated to reduce gas emissions, but is allowed to participate in the CDM scheme.

Table 4. Businesses Subject to CDM

Scale	Greenhouse Gas	GWP	Emission Source	Target area or companies
General CDM Project	CO2	1	Fossil fuels for industrial/transportation purposes	Most widely emitted in almost business plants
	CH4	21	Agricultural/animal waste	Landfill, sewage treatment plant, animal waste treatment plant
	N2O	310	Chemical industry, fertilizer	Rhodia plant in Onsan, HU-CHEMS
	HFCs	140~11,700	Semiconductor cleaner, refrigerant, foaming agent	Foosung
	PFCs	6,500~9,200	Semiconductor etching process	Samsung Electronics, Hinx, Fairchild Korea
	SF6	23,900	Insulation filler, LCD production	Samsung Electronics, LG Philips LCD
Small-scale CDM Project	Renewable energy business under 15Mw			
	Energy efficiency improvement business under 60Gwh/year			
	Greenhouse gas reduction business that curtails CO ₂ emissions by less than 60,000 tonnes a year			

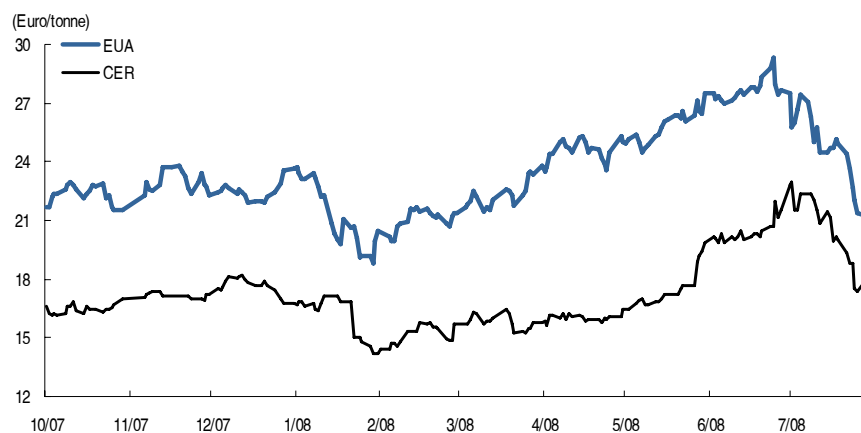
Note: GWP (Global Warming potentials) are used to convert greenhouse gases to carbon dioxide equivalents

Source: Korea Energy Management Corporation, Daewoo Securities Research

CER: reduced greenhouse gas emissions converted to CO2

The amount of reduced greenhouse gas emissions is converted to a Certified Emissions Reduction (CER), equivalent to one tonne of CO₂ that can be traded and sold in international markets at prevailing market prices. For many buyers, the value of CERs in developing countries without a Kyoto target is benchmarked to the EU emission allowance (EUA) price, the trading price between industrialized countries with greenhouse gas emission reduction obligations. Normally CER prices are decided at about 70% of EUA prices. HU-CHEMS' selling prices for greenhouse gas emissions is also applied to CER prices. Fully 60% of HU-CEHMS' total N₂O emission credits are sold at a fixed price of €10 and 40% at floating CER prices. Currently, the average price of an N₂O emission credit is €13.6.

Figure 19. Prices trends of EUA and CER



Source: Bloomberg

2) HU-CHEMS' CDM business

Current profit split among three: 75.85% to Carbon of Austria, 22.15% to HU-CHEMS, and 2% to UN

HU-CHEMS' entry into the CDM business should provide future earnings momentum. Last year HU-CHEMS installed an N₂O reduction facility at three nitric acid plants in cooperation with Carbon of Austria, its project partner, which began to generate profit through the sale of emission credits from 2H07. Carbon funded W11.5bn of the N₂O reduction facility, which is capable of reducing 1.45mn tonnes of CO₂ equivalent greenhouse gasses annually, and manages the entire sales process. As Carbon is responsible for the facility investment and annual operating costs, it claims 75.85% of the income. Of the remainder, 22.15% goes to HU-CHEMS and 2% to the UN. HU-CHEMS recorded W1.8bn in sales from the CDM business in 2H07. We expect the CDM business to begin making a meaningful contribution to operating profit from 2008.

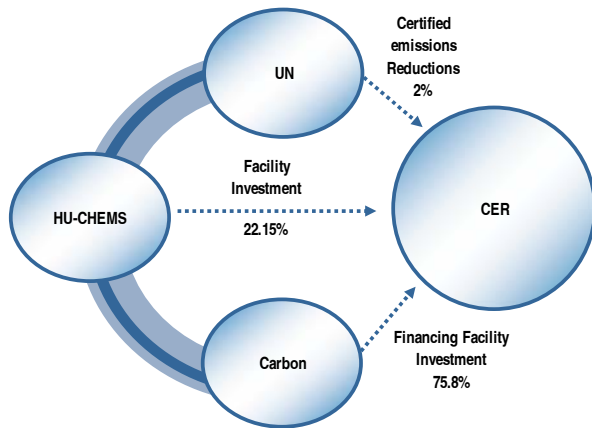
Ownership of CDM business will be transferred to HU-CHEMS in 2013

The current CDM business ownership structure will remain in place until 2012, but ownership of the emission-reducing equipment will be wholly transferred to HU-CHEMS in 2013. We believe HU-CHEMS will claim all revenues from 2013.

CDM business is forecast to generate sales in excess of W5.9bn from 2008 and W10.1bn from 2013

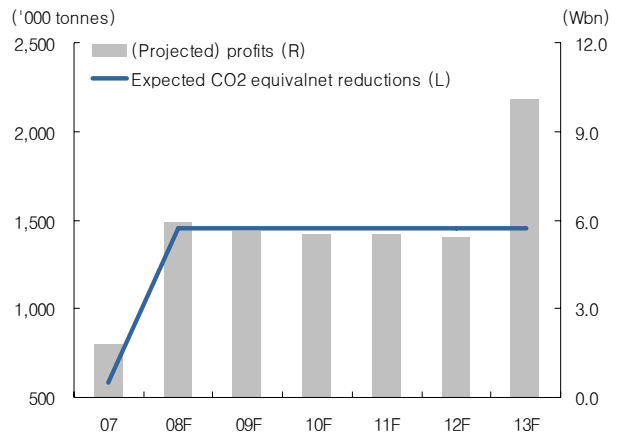
Profits from the CDM business have beaten expectations thanks to a strong Euro. Despite the recent drop in EUA and CER prices due to a decline in coal demand from Europe, we believe prices will continue to rise over the long term. A rise in CER spot price is positive for HU-CHEMS as 40% of the emission is sold at the market price. The other 60% of the CER is sold at €10 per tonne. We expect 2008 operating profit from the CDM business to come in at around W5.9bn based on a CER price of €10 per tonne (based on an exchange rate of W1,395/Euro), HU-CHEMS' 22.15% stake in sales. As Carbon will be responsible for operating costs, sales allotted to HU-CHEMS flow directly to operating profit without additional deduction. When the ownership of the N₂O reduction facility is transferred to HU-CHEMS in 2013, we believe profit from CDM business will expand significantly, to approximately W10.1bn (more details provided in the valuation section).

Figure 20. Mechanism of HU-CHEMS' CDM business



Source: UN, Company Data, Daewoo Securities Research

Figure 21. N₂O reductions by HU-CHEMS and related profit



Source: Company Data, Daewoo Securities Research estimates

V. Earnings Outlook

1. 2008 earnings outlook

Expect 13% top line growth with 46% operating profit growth

Riding a macro boom in the polyurethane market and benefiting from the robust profitability of its nitric acid and DNT businesses, we expect HU-CHEMS' sales to expand by 13% YoY, to W340.2bn this year. We also project operating profit to grow by 45%, to W55bn. Higher revenue from CDM business and additional revenue from new DNT pricing will contribute to faster operating profit growth. Earnings growth in 2H will be higher mainly due to retroactive revenue booking from new DNT pricing.

Table 5. 2008 Quarterly earnings outlook

	2007					2008F					(Wbn, %)
	1Q	2Q	3Q	4Q	Full year	1Q	2QF	3QF	4QF	Full year	2008 growth YoY
Sales	76.6	72.4	72.4	80.4	301.8	85.4	80.7	87.6	86.4	340.2	12.7
Product	61.0	54.1	61.2	60.7	237.0	67.4	62.4	70.4	67.7	267.8	13.0
Goods	15.6	18.2	10.6	18.6	63.0	18.1	16.4	14.3	17.4	63.3	0.5
CDM	--	--	0.6	1.2	1.8	0.0	1.9	3.0	1.2	5.9	227.8
Operating profit	9.4	8.4	11.0	8.9	37.7	12.0	12.4	18.4	12.1	54.7	45.1
Product	7.8	7.1	9.0	6.5	30.4	10.3	9.3	13.7	9.5	42.8	40.8
Goods	1.7	1.2	1.4	1.3	5.6	1.7	1.2	1.7	1.4	6.1	8.9
CDM	0.0	0.0	0.6	1.1	1.8	0.0	1.9	3.0	1.2	5.9	227.8
Pretax profit	9.4	9.6	10.5	10.4	39.9	13.2	13.3	19.3	13.4	59.2	48.4
Net profit	6.8	6.9	7.6	7.0	28.3	9.3	9.6	14.0	9.7	42.7	50.9
OP margin	12.3	11.6	15.2	11.1	12.5	14.0	15.3	21.0	14.0	20.4	63.2
Pretax profit margin	12.2	13.3	14.6	12.9	13.2	15.5	16.5	22.0	15.5	17.4	31.8
Net profit margin	8.9	9.6	10.5	8.7	9.4	10.9	11.9	16.0	11.2	12.6	34.0

Source: Company data, Daewoo Securities Research estimates

2. Mid- to long-term earnings outlook

Chemical division remains major cash cow with newly launched MNB business

We anticipate rapid growth for HU-CHEMS until 2009 helped by the MNB business. The sales contribution from the MNB business will be around W124bn in 2009 and W162bn in 2010. Moreover, we expect stable earnings in the range of W5-6bn from the CDM business. The chemical division will continue to be the company's cash cow and should enjoy stable polyurethane demand from China. We think polyurethane supply will tighten in China as key end-users (construction and automobile) are expected to grow over 10% p.a. over the next few years.

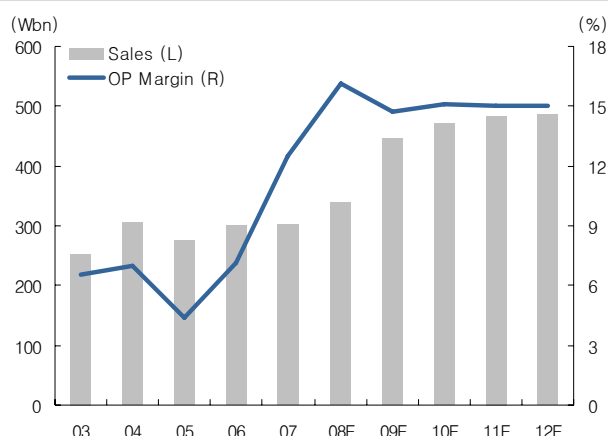
Table 6. Mid- to long-term earnings projection

(Wbn, %)

	03	04	05	06	07	08F	09F	10F	11F	12F
Sales	251.9	306.2	275.9	301.0	301.8	340.2	446.8	470.6	482.7	485.4
Product	165.6	232.2	208.5	233.0	237.0	267.8	375.6	399.8	411.3	413.8
DNT	97.6	125.5	110.0	124.6	135.7	146.6	137.1	129.3	134.5	131.4
Nitric acid	45.9	80.5	72.4	84.1	79.4	98.1	91.3	86.0	89.3	95.8
MNB							123.8	161.8	164.6	163.5
Others	22.1	26.2	26.1	24.4	21.9	23.1	23.3	22.8	23.0	23.2
Merchandise	86.3	74.0	67.4	68.0	63.0	66.2	65.6	65.2	65.9	66.2
CDM					1.8	6.1	5.6	5.5	5.5	5.4
Operating profit	16.4	21.3	12.1	21.4	37.7	54.9	65.8	71.2	72.7	72.8
Product	11.9	18.1	8.9	17.1	30.4	42.7	54.0	60.1	61.3	61.4
Goods	4.5	3.2	3.1	4.4	5.6	6.1	6.2	5.5	5.9	6.0
CDM					1.8	6.1	5.6	5.5	5.5	5.4
Pretax profit	15.3	21.6	12.1	20.6	39.9	59.2	67.8	74.8	78.7	81.2
Net profit	13.3	15.2	8.3	15.1	28.3	42.7	49.1	54.2	57.1	58.9
EPS (W)	624	716	389	711	1,328	2,004	2,308	2,547	2,680	2,765
OP margin	6.5	7.0	4.4	7.1	12.5	16.1	14.7	15.1	15.1	15.0
Product	7.2	7.8	4.3	7.3	12.8	15.9	14.4	15.0	14.9	14.8
Goods	5.2	4.4	4.7	6.4	8.8	9.2	9.5	8.4	9.0	9.1
CDM					99.5	99.9	99.9	99.9	99.9	99.9
Pretax margin	6.1	7.1	4.4	6.8	13.2	17.4	15.2	15.9	16.3	16.7
Net margin	5.3	5.0	3.0	5.0	9.4	12.6	11.0	11.5	11.8	12.1

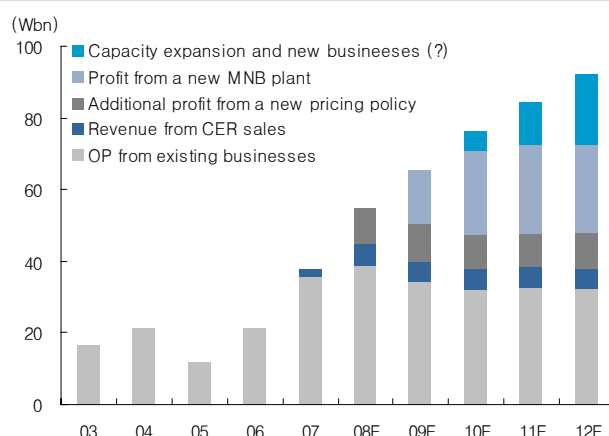
Source: Company data, Daewoo Securities Research estimates

Figure 22. Sales and OP Margin



Source: Company data, Daewoo Securities Research estimates

Figure 23. Breakdown of operating profit



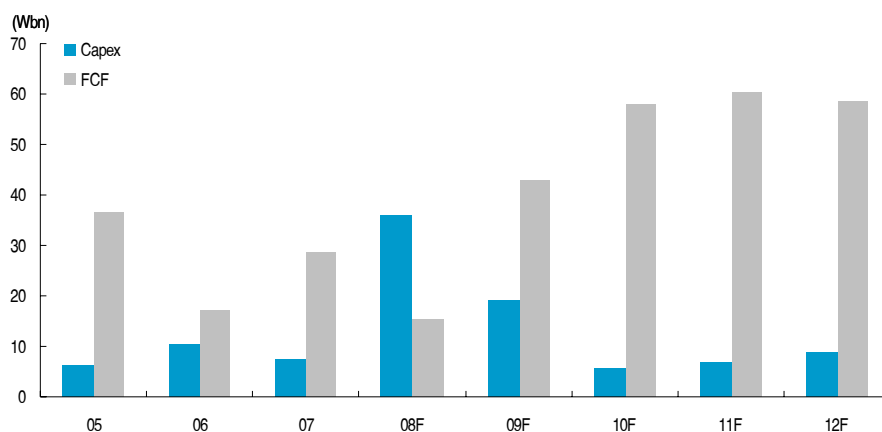
Source: Company data, Daewoo Securities Research estimates

Net cash is about W56.2n with annual EBITDA of over W70bn

1) Net cash to grow again from 2009

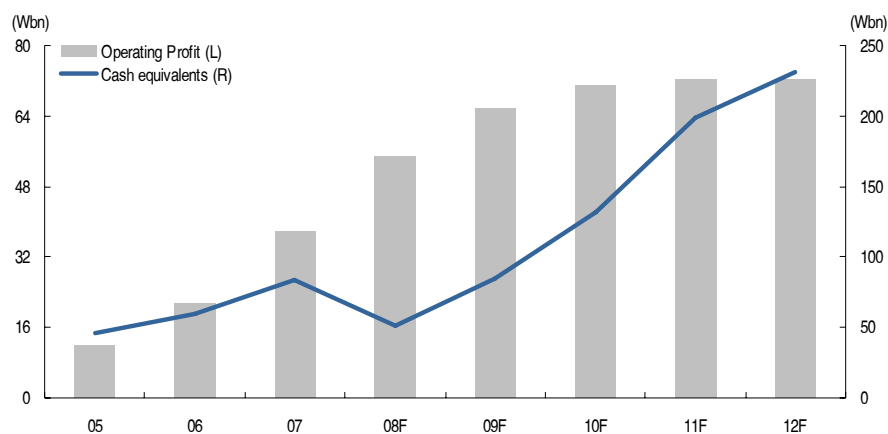
HU-CHEMS' investment in its MNB plant is estimated at around W52bn, while its net cash position stood at W29.5bn as of June 2008. Annual EBITDA is expected to be over W70bn this year. Due to capex the company's cash balance is forecast to decline this year, but should begin to record steady growth again from next year. Although we expect the company to pay out a generous dividend to shareholders, HU-CHEMS still needs to identify new profitable and productive businesses in which to invest its free cash.

Figure 24. HU-CHEM's Capex and FCF



Source: Company data, Daewoo Securities Research estimates

Figure 25. Operating profit and cash equivalents



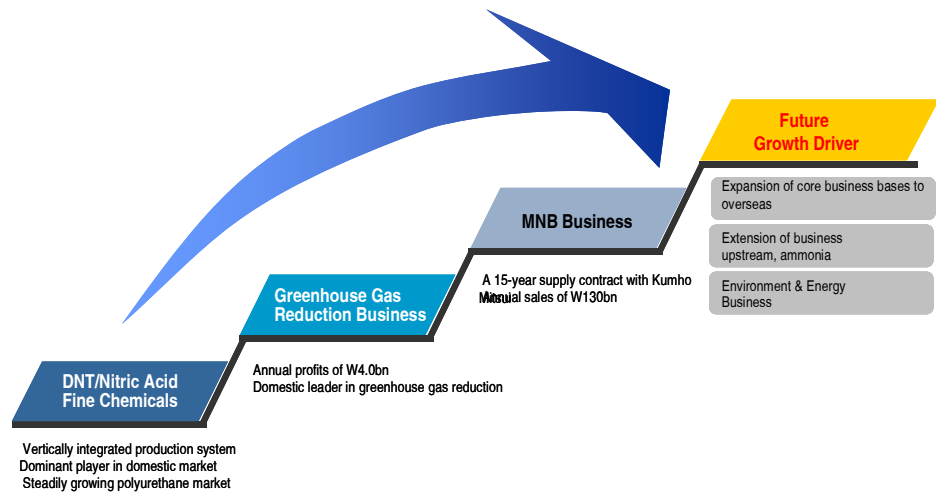
Source: Company data, Daewoo Securities Research estimates

2) Mid- to long-term growth road map

Using its hoard of cash, HU-CHEMS plans to look for growth opportunities in the following three areas:

- 1) Expand core businesses overseas: HU-CHEMS is considering expanding production overseas in line with its clients’ plans to expand capacity. HU-CHEMS’ competitive polyurethane feedstock technology should help the company build an overseas presence.
- 2) Extension of its business to upstream, ammonia: Nitric acid, HU-CHEMS’ flagship product, is made from ammonia, which comes from natural gas. Southeast Asia is a good place to build ammonia plants considering the region’s abundant natural gas reserves. The well-established business network of the company’s largest shareholder, Mr. Yeon-Cha Park, in Vietnam and other Southeast Asian nations should help HU-CHEMS find a good location.
- 3) Environment and Energy Business: HU-CHEMS began to take interest in the environment-friendly energy business through the sales of CER. The company’s experience in the CDM business is expected to serve as a strong mid- to long-term growth engine. The company’s environmental initiative should give HU-CHEMS a head start in other green gas reduction projects and environment-friendly energy businesses.

Figure 26. Mid- to long-term growth road map



Source: Company Data, Daewoo Securities

VI. Risk Factors

1. Slowdown in polyurethane market

China's polyurethane import from Korea could decrease from 2010, as China becomes more self-sufficient in polyurethane. Major polyurethane makers that experienced production setbacks are now setting aside capex to increase capacity.

However, we see little likelihood of a rapid collapse in polyurethane supply-demand globally as other regions have no plans to expand production capacity. We forecast global polyurethane demand will outstrip planned capex.

2. Non-renewal of CDM business contract

HU-CHEMS partial stake in the CDM business (22.15% of income) will continue until the end of 2012, at which point it will obtain full ownership. The UN CDM business license will expire in 2028. We do not foresee any problem in rolling over the CDM business. However, a sudden unexpected change could have an adverse impact on earnings.

3. Korea to be obligated to reduce gas emissions

Korea is currently not subject to gas emission reduction as it is not categorized in the industrialized country group. Nonetheless, there's a high possibility that Korea will be categorized in this group from 2013 when 100% ownership of greenhouse gas reduction facilities transfers to HU-CHEMS from Carbon of Austria. In that case, HU-CHEMS should meet part of their emission reduction targets under the Kyoto Protocol then sell the remaining CER units for profit. Therefore, revenue from the sale of CERs could be smaller than our current expectation.

However, we factored this risk in our valuation by discounting 50% of total estimated revenue from the CDM business. The 50% discount consists of operating costs of 10%, a 2% donation to the UN, and 38% of obligated gas emission reduction (550,000 tonnes equivalent). We estimate HU-CHEMS' maximum obligation at 290,000 tonnes if Korea is promoted to the industrial country group.

We factored this risk into our CDM business valuation



Financial Statement

Income Statement (Summarized)

(Wbn)	12/07	12/08F	12/09F	12/10F
Sales	302	391	479	496
Cost of Goods Sold	242	311	382	394
Gross Profit	59	80	97	102
SG&A	22	23	27	27
Operating Profit	38	56	70	74
Non-Operating Income	2	4	2	4
Interest Income/Expense	3	4	3	5
FX-Related Gain/Loss	0	0	0	0
Equity Method Gain/Loss	0	0	0	0
Asset Disposal Gains/Losses	0	0	0	0
Other Non-Operating	-1	0	-1	-1
Pretax Profit	40	60	72	78
Tax	12	18	20	21
Profit from Continuing Operation	28	42	52	56
Profit from Discontinued Operation	0	0	0	0
Tax Effect	0	0	0	0
Net Profit	28	42	52	56
Residual Income	28	42	52	56
EBITDA	54	74	87	91
Free Cash Flow	28	12	47	61
Gross Profit Margin (%)	19.7	20.4	20.2	20.5
EBITDA Margin (%)	18.0	18.8	18.1	18.3
Operating Margin (%)	12.5	14.4	14.6	15.0
Net Margin (%)	9.4	10.7	10.9	11.4

Cash Flow (Summarized)

(Wbn)	12/07	12/08F	12/09F	12/10F
Cash Flow from Operating	38	40	70	69
Net Profit	28	42	52	56
Non-Cash Income and Expense	18	18	17	17
Tangible Assets Depreciation	16	17	17	17
Intangible Assets Depreciation	0	0	0	0
Others	1	1	0	0
Chg in Working Capital	-8	-20	1	-4
Chg in Accounts Receivable	-1	-21	-12	-4
Chg in Inventories	0	-4	-2	-1
Chg in Accounts Payable	-9	7	9	0
Others	3	-2	6	1
Cash Flow from Investment	-5	-37	-79	-30
Chg in Tangible Assets	-8	-36	-19	-6
Chg in Intangible Assets	0	0	0	0
Chg in Investment Assets	-1	-11	-2	0
Others	4	10	-58	-24
Cash Flow from Financing	4	-11	-14	-17
Chg in Borrowings	10	19	-3	-3
Chg in Equity	-6	-30	-12	-13
Dividends	-6	-10	-12	-13
Others	0	0	0	0
Chg in Cash	38	-8	-24	22
Beginning Cash Balance	26	64	56	32
Ending Cash Balance	64	56	32	55

Balance Sheet (Summarized)

(Wbn)	12/07	12/08F	12/09F	12/10F
Current Assets	154	161	210	261
Cash and Cash Equivalents	64	56	32	55
Accounts Receivable	42	63	74	78
Inventories	15	18	21	21
Other Current Assets	34	24	83	107
Non-Current Assets	97	127	132	121
Investment Assets	9	21	23	24
Plant, Property and Equipment	88	106	108	98
Intangible Assets	0	0	0	0
Total Assets	251	288	342	383
Current Liabilities	53	88	101	99
Accounts Payable	22	29	37	37
Short-Term Borrowings	10	29	27	23
Current Long-Term Borrowings	0	0	0	0
Other Current Liabilities	21	30	37	39
Non-Current Liabilities	5	5	5	6
Bonds	0	0	0	0
Long-Term Borrowings	0	0	0	0
Other Non-Current Liabilities	5	5	5	6
Total Liabilities	58	93	107	105
Paid-In Capital	21	21	21	21
Capital Surplus	108	108	108	108
Retained Earnings	64	85	125	168
Stockholders' Equity	193	195	235	278

Forecasts/Valuations (Summarized)

	12/07	12/08F	12/09F	12/10F
P/E (X)	14.3	10.7	8.6	7.9
P/CF (X)	9.0	8.3	7.1	6.7
P/B (X)	2.1	2.3	1.9	1.6
EV/EBITDA (X)	5.9	5.4	4.2	3.5
EPS (W)	1,328	1,968	2,443	2,647
CFPS (W)	2,102	2,774	3,226	3,422
BPS (W)	9,084	9,159	11,055	13,068
DPS (W)	490	570	660	690
Payout Ratio (%)	36.9	27.8	25.9	25.0
Dividend Yield (%)	2.6	2.5	2.9	3.0
Sales Growth Rate (%)	0.3	29.6	22.6	3.4
EBITDA Growth Rate (%)	28.9	35.5	17.7	4.6
Operating Profit Growth Rate (%)	76.0	49.4	24.0	5.9
EPS Growth Rate (%)	86.7	48.2	24.2	8.3
Accounts Receivable Turnover	7.3	7.5	7.0	6.5
Inventory Turnover Ratio	21.0	23.7	24.5	23.7
Accounts Payable Turnover Ratio	11.5	15.5	14.5	13.3
ROA (%)	12.0	15.5	16.5	15.6
ROE (%)	15.5	21.6	24.2	21.9
ROIC (%)	25.2	33.1	36.4	39.0
Liability to Equity Ratio (%)	29.8	47.9	45.3	37.6
Current Ratio (%)	290.8	182.7	207.5	264.2
Net Debt to Equity Ratio (%)	-43.3	-23.9	-35.5	-47.9
Interest Coverage Ratio (X)	194.4	39.0	34.0	40.3

Source: Company data, Daewoo Securities Research estimates

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Hold	Relative Performance of -10% and +10%
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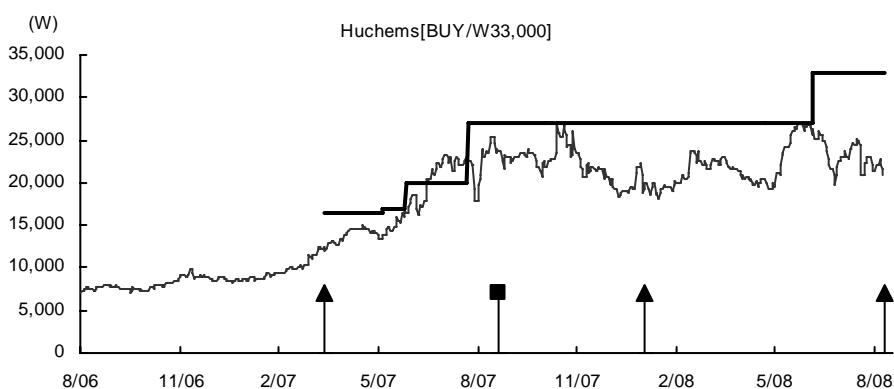
Overweight	Industry fundamentals are favorable or improving
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