

# LNG insulation panels

## Bright earnings outlook

### Machinery

Industry Report  
May 7, 2013

Daewoo Securities Co., Ltd.

Small Cap

Seung-hyeon Park  
+822-768-4194  
seunghyeon.park@dwsec.com

### Largest beneficiary of LNG demand growth

Global liquefied natural gas (LNG) traffic volume has grown at a CAGR of 7% over the past 10 years, outpacing crude oil traffic volume growth (3-4%). The nuclear power plant accident in Japan and the shale gas boom are sharply boosting LNG demand. We believe that global E&P, liquefaction plant engineering, procurement, and construction (EPC), heavy industries, and equipment firms stand to benefit from increased LNG demand.

In Korea, shipbuilders that construct LNG carriers and floating LNG (FLNG) facilities as well as LNG insulation panel producers are expected to be key beneficiaries. In this regard, we believe Dongsung FINETEC and Hankuk Carbon deserve attention for their positive earnings outlooks based on sufficient order backlogs.

### Strong order backlogs, high earnings visibility, and continuing order momentum

LNG insulations panels are mainly used in LNG carriers, but they are being increasingly used in FLNG facilities (LNG FPSO/FSRU) and offshore storage. During 2009-2012, 85 LNG carrier orders were placed globally, which is a 183% jump from the orders placed in the three years preceding that period.

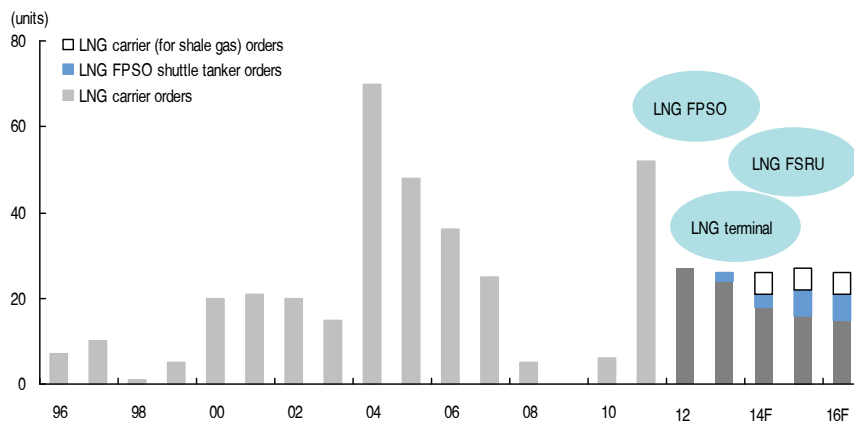
As a result, the aforementioned two LNG insulation panel producers' combined order backlogs surged by 376% from the end-2010 level to a record-high level of W633.6bn as of end-2012. Including orders received in 1Q13, they have already secured work for 2014. Orders received after 1Q13 will be executed starting in 2015.

We expect insulation panel producers to maintain strong order momentum in line with LNG demand growth. Assuming a global LNG traffic CAGR of 6% over the next three-four years, more than 80 LNG carrier orders are projected to be placed annually. In addition, companies' efforts to reduce boil-off rates (BOR) are boosting product prices.

### Recommend Dongsung FINETEC and Hankuk Carbon

We initiate our coverage of Dongsung FINETEC with a Buy rating and a target price of W12,800. In deriving our target price, we applied a target P/E of 17x to our 2013F EPS of W750. Our investment recommendation is based on the following: 1) Dongsung FINETEC should be the biggest beneficiary of global LNG demand growth, 2) earnings visibility is high thanks to a large order backlog, 3) the company's financial position is projected to improve this year on the back of strong operating cash flow, and 4) technological innovations should help boost insulation orders. As for Hankuk Carbon, we maintain our Buy rating and target price of W11,000. The company is anticipated to display sharp earnings growth this year due to the strength of the LNG insulation panel market.

### Global LNG carrier order volume



Source: Clarksons, KDB Daewoo Securities Research

## Industry overview and value chain

### LNG insulation panels

LNG insulation panels are designed to cool down natural gas to -163 degrees Celsius to facilitate the storage and transport of LNG. They are mainly used in LNG carriers, but are increasingly being used in FLNG facilities (LNG FPSO/FSRU), fixed offshore platforms, and offshore storage.

LNG carrier tank systems can be divided into self-supporting and membrane types. Membrane tank systems can again be divided into two types: Mark III and NO 96. The former (which uses the raw material R-PUF) has been adopted by Samsung Heavy Industries (SHI) and Hyundai Heavy Industries (HHI), whereas the latter (which uses the raw material perlite) is internally produced by Daewoo Shipbuilding & Marine Engineering (DSME\_ and STX Offshore & Shipbuilding. Dongsung FINETEC and Hankuk Carbon account for over 90% of the Mark III-type insulation market.

Table 1. LNG insulation panels by type

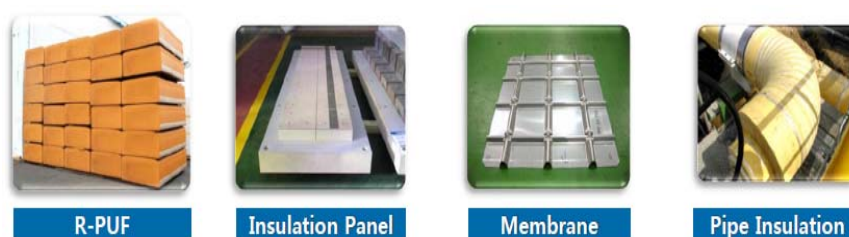
		Features	Key differentiating factor	Shipbuilders
Self-supporting	MOSS type	Hull side and tank are separated	Sphere-shaped cargo tank	Rarely used
	SPB type	Resistant to external impact	Assembly of insulation panels	
Membrane type	Mark III type	Hull side and box-shaped tank are integrated	Uses R-PUF as raw material	SHI, HHI
	NO 96 type	More energy-efficient thanks to lightweight nature; Greater safety	Uses perlite as raw material	DSME, STX Offshore & Shipbuilding

Source: KDB Daewoo Securities Research

### Competition dynamics and value chain

LNG insulation panel modules consist of insulation materials (R-PUF, insulation panels), primary containment (membranes, pipeline insulators), and secondary containment (triplexes). R-PUF is a high-density polyurethane foam reinforced by glass fiber. While Dongsung FINETEC produces insulation materials and primary containment in-house and outsources secondary containment manufacturing, Hankuk Carbon internally produces insulation materials and secondary containment and outsources primary containment.

Figure 1. LNG insulation panel value chain



Source: KDB Daewoo Securities Research

Table 2. LNG insulation panel modules

Module	Name	Comments
Insulation materials	R-PUF	A high-density polyurethane foam infused with glass fiber to improve tank durability
	Insulation panel	Plywood attached to both sides of R-PUF; Installed in cargo tanks directly
Primary containment	Membrane	Core equipment exposed to LNG and resistant to extremely low temperatures and external impact
	Pipeline insulation	Pipe insulation panels used in LNG storage tanks and LNG/LPG carriers
Secondary containment	Triplex	Jointly developed by Hankuk Carbon and SHI

Source: KDB Daewoo Securities Research

## Industry issue 1: BOR reduction

The current buzzword for the LNG transportation industry is “boil-off rate (BOR) cut.” BOR is the daily rate of LNG evaporation during maritime transportation. Put simply, BOR is a daily loss ratio for cargo owners.

The BOR is taking on more importance in light of efforts to improve: 1) profitability, 2) stability, and 3) environmental friendliness. First, cargo owners are striving to reduce the loss ratio as much as possible amid rising LNG prices. In terms of the stability and environmental friendliness of ship operation, reducing BOR is also important. LNG carriers typically use fuel obtained by liquefying natural gas that evaporates during the course of their voyage (boil-off gas (BOG)). However, shipowners have recently started to prefer traveling at low speeds, which is more fuel-efficient and environmentally friendly. And, when LNG carriers reduce their speed, the amount of BOG used as fuel decreases. As such, it is necessary to lower the BOR to ensure both the stability and environmental friendliness of ship operations.

As one of the ways to reduce the BOR, thicker cryogenic insulation panels are being increasingly adopted. For Mark III insulation, if the thickness of the panels is increased from 270mm to 400mm, the BOR will drop from 0.15% to 0.10%. According to GasLog, a Greek operator of LNG carriers, the increase in the panel thickness (to 400mm) would save the company W5.5bn annually. Assuming that a LNG carrier’s service life is 30 years, the use of thicker insulation panels could save W80bn, equivalent to 30-40% of the price of a LNG carrier (around US\$200mn).

With regard to LNG carrier orders, over the past two years, some shipowners have requested change orders to increase the thickness of insulation panels. Such a change order is equivalent to a price hike of 15-20% for LNG insulation panel makers. For NO 96 insulation, perlite, the existing raw material for the panels, is being increasingly replaced by a combination of polyurethane foam (R-PUF) and glass wool in order to reduce the BOR.

On a positive note, LNG insulation panel makers will be able to diversify their customer base (currently HHI and SHI) to include DSME, in our view

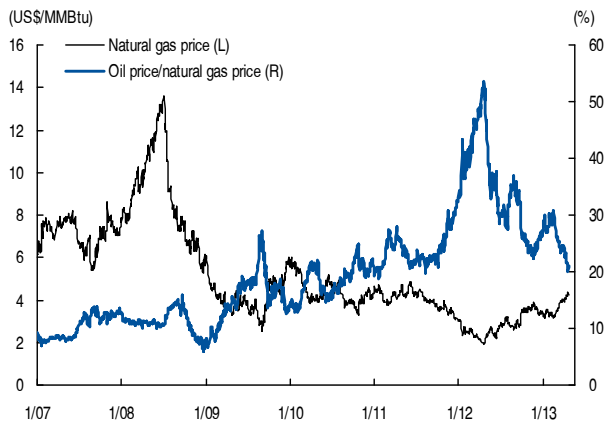
**Table 3. BOR comparison by LNG insulation panel thickness**

Thickness	Insulation panel	
	270mm	400mm
BOR	0.15%	0.10%
LNG loss (m <sup>3</sup> /day)	240	160
LNG loss (m <sup>3</sup> /year)	41,760	27,840
Loss difference(m <sup>3</sup> /year)	13,920	
Value (US\$/year)	5,345,000	
Difference in CO <sub>2</sub> emissions (mt/year)	48,720	

Note: Based on LNG carriers (LNG storage capacity of 160,000m<sup>3</sup>, dual-fuel diesel engine (DFDE)), 16 knots, built in 2013, operating 10 times, or 174 days, per year

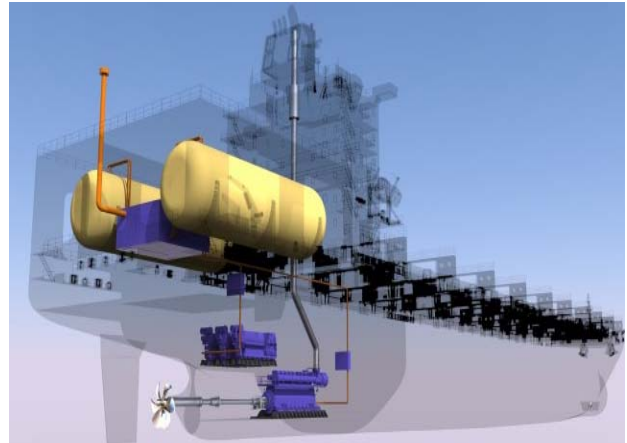
Source: GasLog, KDB Daewoo Securities Research

Figure 2. Natural gas price



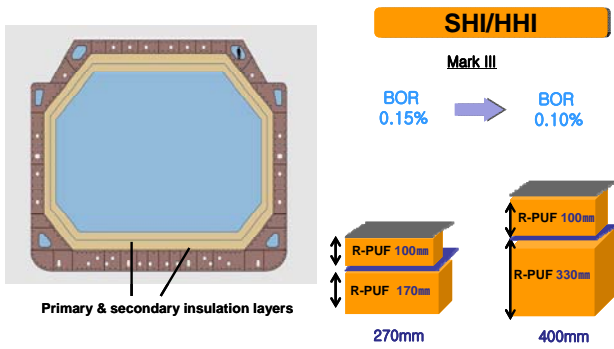
Source: Bloomberg, KDB Daewoo Securities Research

Figure 3. LNG-fueled ship



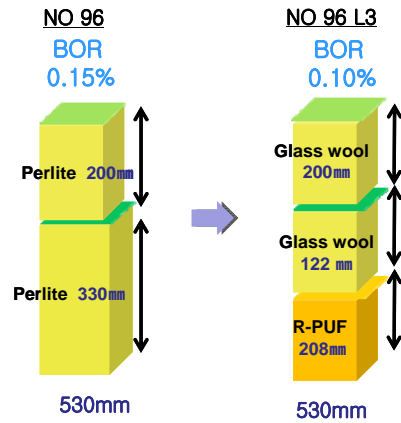
Source: KDB Daewoo Securities Research

Figure 4. BOR reduction: Mark III



Source: Dongsung FINETEC, KDB Daewoo Securities Research

Figure 5. BOR reduction: NO 96 type



Source: Dongsung FINETEC, KDB Daewoo Securities Research

## Industry issue 2: Potential entry into above-ground insulation market

With LNG trade volume expanding, we anticipate a boom in LNG terminals, which are used to load, store, and distribute LNG. In Korea, Korea Gas (KOGAS) is pushing to build three more terminals and related pipelines over the next four years. Private-sector companies (e.g., SK and GS companies) are also increasing LNG terminal investments. And, in China, the government plans to build 17 more terminals with an aim of tripling LNG terminal capacity from 15mn tonnes in 2011 to 51mn tonnes in 2015.

LNG storage tanks can be placed either in or above ground. In-ground tanks (mostly membrane-type) are stable, but their construction expenses are heavy. As such, these days, companies prefer building tanks above ground (nickel-type). These nickel above-ground tanks use thick nickel plates and perlite. In Korea, though costs for membrane-type and nickel-type tanks are now similar, companies prefer nickel tanks, which have been proven safe. However, in countries with high labor costs like Australia, membrane-type tanks are preferred, since building nickel tanks requires more human resources such as welding engineers.

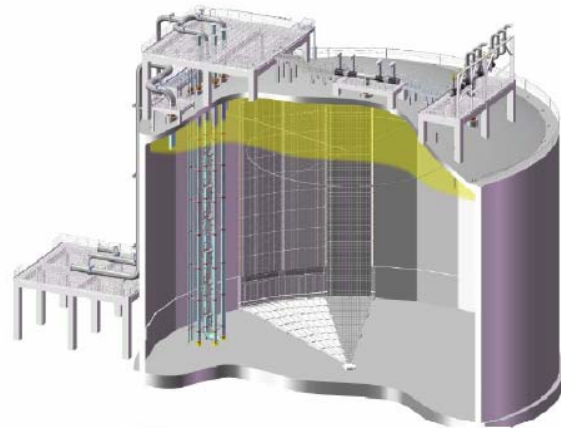
Due to high costs and technological barriers, it is difficult for Korean insulation materials producers to enter the above-ground LNG tank-use materials market. Nevertheless, it should be noted that Dongsung FINETC supplied materials for use in 10 above-ground tanks at KOGAS' LNG Terminal 1 in Pyeongtaek. Hankuk Carbon is also a potential player, given its experience in supplying materials to Tokyo Gas.

Figure 6. In-ground LNG storage tank



Source: KOGAS, KDB Daewoo Securities Research

Figure 7. Above-ground LNG storage tank



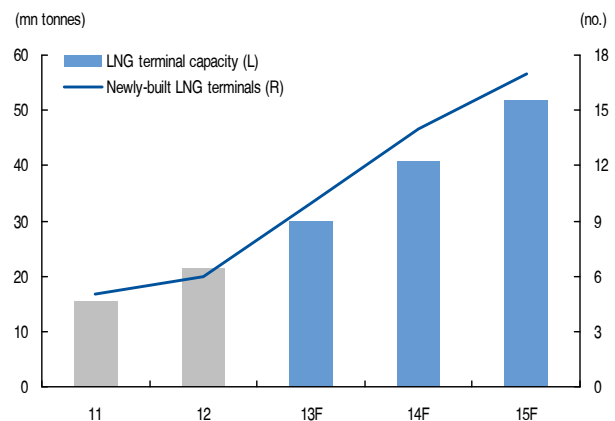
Source: KDB Daewoo Securities Research

Figure 8. LNG terminal



Source: KDB Daewoo Securities Research

Figure 9. LNG terminal expansion plans in China



Source: Chinese media, KDB Daewoo Securities Research

## Dongsung FINETEC (033500 KQ)

### Biggest beneficiary of global LNG demand growth

#### Machinery

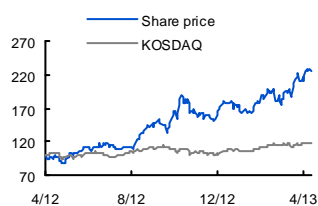
(Initiate)	<b>Buy</b>
Target Price (12M, W)	<b>12,800</b>
Share Price (05/06/13, W)	9,820
Expected Return	30%

OP (13F, Wbn)	30
Consensus OP (13F, Wbn)	31

EPS Growth (13F, %)	99.5
Market EPS Growth (13F, %)	20.8
P/E (13F, x)	13.1
Market P/E (13F, x)	9.4
KOSDAQ	567.13

Market Cap (Wbn)	265
Shares Outstanding (mn)	27
Free Float (%)	61.5
Foreign Ownership (%)	1.9
Beta (12M)	0.57
52-Week Low (W)	3,705
52-Week High (W)	10,250

(%)	1M	6M	12M
Absolute	15.0	20.9	129.4
Relative	13.2	19.2	130.8



#### Biggest beneficiary of global LNG demand growth

LNG demand has been steadily rising globally in the wake of Japan's nuclear disaster and growing shale gas development. Indeed, global LNG freight volume has increased by an average of 7% per year over the past decade, which is faster than crude oil volume growth. Along with rising LNG demand, sales of insulation materials essential to LNG carriers, FLNG, and onshore storage tanks are also picking up.

Dongsung FINETEC, established in 1985, is the world's largest LNG cryogenic insulation maker. By business, the company is anticipated to generate 68% of its revenue from LNG cryogenic insulation and 32% from non-LNG cryogenic insulation this year. The company's maximum revenue from LNG cryogenic insulation is around W250bn per year (which can satisfy the needs of up to 17 LNG carriers). Due to surging orders, the company is estimated to be operating at full capacity.

#### High earnings visibility and steady order momentum

Dongsung FINETEC has seen its orders surge over the past three years, from W37.3bn to W226.6bn and then to W290bn. This year, the company's order target is W350bn, W92bn of which has already been recorded (as of April). Given the large demand this year, the company should be able to comfortably meet its target.

Dongsung FINETEC's earnings visibility is high, as the company has already secured orders that are sufficient to keep its factories busy through next year. Order backlogs came in at W435.7bn at end-2012 (+67% YoY), and should hit a record of W470bn at end-1Q13.

We forecast Dongsung FINETEC to post historic-high earnings in 2013, with revenue of W376.8bn (+57% YoY), operating profit of W29.7bn (+91% YoY), and net profit of W20.2bn (YoY +100%) under non-consolidated K-IFRS. We expect sales of LNG insulation materials, the company's earnings driver, to climb toward 2H in light of its customers' ship construction schedules. Profitability may fluctuate depending on the US\$/W rate. However, OP margin will likely improve YoY to 7.9% even based on our conservative estimates.

#### Initiate coverage with Buy and TP of W12,800

We initiate our coverage of Dongsung FINETEC with a Buy rating and a target price of W12,800. In deriving our target price, we applied a target P/E of 17x to our 2013F EPS of W750. The multiple represents a 15% discount to the average P/E of Dongsung FINETEC's peers; we applied a discount because the company is currently experiencing a high debt ratio and tight cash flow due to increased capacity utilization. However, we expect the valuation discount to gradually dissipate this year, as the company's financial position will likely begin to improve thanks to strong operating cash flow.

FY (Dec.)	12/10	12/11	12/12	12/13F	12/14F	12/15F
Revenue (Wbn)	181	178	239	377	418	450
OP (Wbn)	16	-2	16	30	36	41
OP Margin (%)	8.5	-1.0	6.5	7.9	8.5	9.0
NP (Wbn)	1	-9	10	20	25	28
EPS (W)	49	-345	376	750	924	1,027
ROE (%)	1.9	-13.3	14.6	24.2	24.0	21.8
P/E (x)	84.3	-	20.0	13.1	10.6	9.6
P/B (x)	1.5	1.5	2.7	2.9	2.3	1.9

Notes: All figures are based on non-consolidated K-IFRS; NP refers to profit attributable to controlling interests

Source: Company data, KDB Daewoo Securities Research estimates

# I. Valuation

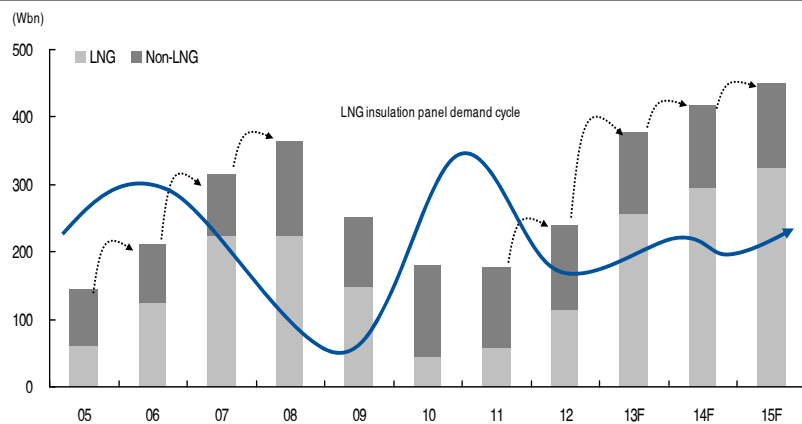
## Initiate coverage with a Buy call and target price of W12,800

We initiate our coverage of Dongsung FINETEC with a Buy rating and a target price of W12,800. In deriving our target price, we applied a target P/E of 17x to our 2013F EPS of W750. The multiple represents a 15% discount to the average P/E of Dongsung FINETEC's peers; we applied a discount because the company is currently experiencing a high debt ratio and tight cash flow due to increased capacity utilization.

However, we expect the valuation discount to gradually dissipate this year, as: the company's earnings are anticipated to pick up full swing through the end of 2014 given its large order backlog, and deleveraging will likely start this year. The target price implies a 40% upside from the current stock price, which corresponds to a 2013F P/E of 12.2x.

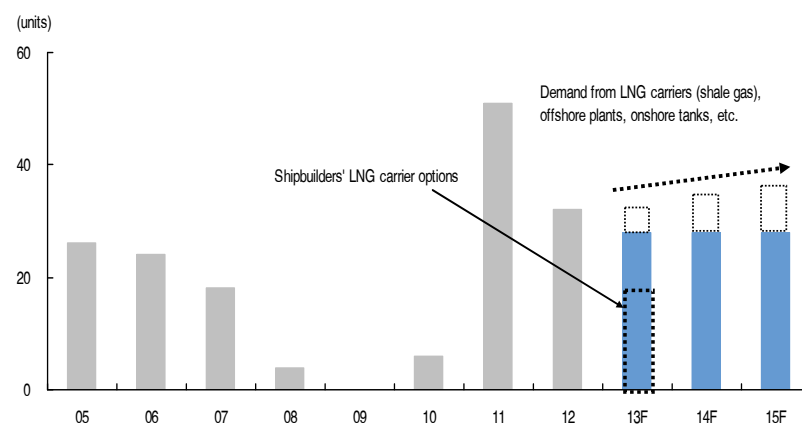
Our investment recommendation is based on the following: 1) Dongsung FINETEC is the biggest beneficiary of global LNG demand growth, 2) earnings visibility is high thanks to its large order backlog, 3) the company's financial position is projected to improve this year thanks to strong operating cash flow, and 4) the company's technological innovations should help boost insulation orders.

**Figure 10. LNG insulation panel demand cycle and Dongsung FINETEC's earnings forecasts**



Source: Company data, KDB Daewoo Securities Research

**Figure 11. LNG carrier order trend and LNG insulation panel demand**



Source: Clarksons, KDB Daewoo Securities Research

## II. Company overview

### World's largest LNG insulation materials maker

Dongsung FINETEC, established in 1985, is the world's largest LNG cryogenic insulation maker. In 1996, the company became the third company in the world to successfully develop polyurethane foam materials for use in LNG carriers, and started to supply insulation materials for use in the LNG carriers of SHI. Since then, utilizing its competitiveness in chemical materials, the company has diversified its businesses to include construction materials (panels), high-pressure gas cylinders, and refrigerants.

By business, the company is anticipated to generate 68% of its revenue from LNG cryogenic insulation, 14% from sandwich panels, 9% from PU systems, 4% from high-pressure gas cylinders, and 5% from refrigerants/other. LNG cryogenic insulation made only a 24% contribution to revenue in 2010, when the downstream industry was experiencing a severe slowdown, but, as demand is high now, we believe that the business' revenue contribution will remain at around 70% for the time being. Non-LNG businesses including sandwich panels and PU systems, which are highly sensitive to construction market conditions, report steady revenue flows every year.

The company's maximum revenue from LNG cryogenic insulation is around W250bn per year (corresponding to the needs of up to 17 LNG carriers). Compared to other industrial materials, oversupply concerns are not significant, because the company's capacity has remained flat since its major capacity ramp-up in 2005-2007, and there are only two major suppliers in the industry. The company's LNG insulation facilities are estimated to be operating at full capacity due to surging orders.

Table 4. History of Dongsung FINETEC

Year	Event
1990	Established a polyurethane foam factory
1997	Produced R-PUF, merged with FINETEC, entered insulation panel business (for LNG tanks)
1998	Entered insulation panel business (for LNG carriers)
2001	Started production of LNG-use membranes
2002	Entered sandwich panel and high-pressure gas cylinder business
2009	Merged into Dongsung Group
2012	Won world's first order for insulation panes for LNG FPSO
2013	Changed company name to Dongsung FINETEC

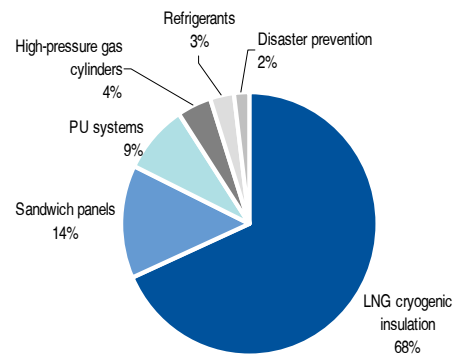
Source: Company data, KDB Daewoo Securities Research

Figure 12. Product applications



Source: KDB Daewoo Securities Research

Figure 13. Revenue by division (2013F)



Source: Company data, KDB Daewoo Securities Research

### III. Solid orders, earnings momentum, and technological innovation

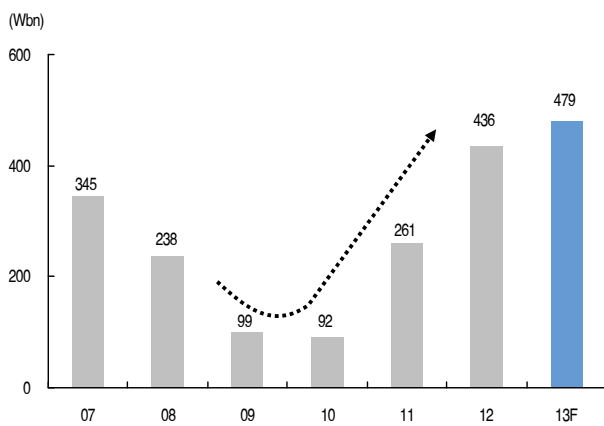
#### Three components of earnings growth in full play

Dongsung FINETEC has seen its new orders surge over the past three years, from W37.3bn to W226.6bn and then to W290bn. This year, the company's order target is W350bn, W92bn of which has already been recorded as of April. Given the large number of projects up for bid, including HHI's Shell LNG FPSO top-side order, LNG carrier options (13 carriers), 2013 new orders (10 carriers), as well as the Yamal project in Russia, the company should be able to comfortably meet its target.

Dongsung FINETEC's earnings visibility is high, as the company has already secured orders sufficient to keep its factories busy through next year. Order backlog reached W435.7bn at end-2012 (+67% YoY), and should hit a record of W470bn at end-1Q13.

The company is actively responding to the demand of the LNG industry to improve BOR. Indeed, Mark III insulation is getting thicker, from 270mm to 400mm, to reduce boil-off. However, the company is developing a product that can significantly reduce the BOR without thickening the material. Although the new product will need GTT certification, if commercialized, it should strongly appeal to shippers, shipbuilders and shipowners alike.

Figure 14. Dongsung FINETEC's order backlogs



Source: Company data, KDB Daewoo Securities Research

Figure 15. Dongsung FINETEC at the LNG 17 Conference



Source: KDB Daewoo Securities Research

## IV. Earnings forecasts

### Record-high earnings likely in 2013; Beginning of deleveraging

We forecast FINETEC to post record-high earnings in 2013, with revenue of W376.8bn (+57% YoY), operating profit of W29.7bn (+91% YoY), and net profit of W20.2bn (+100% YoY) under non-consolidated K-IFRS. We expect sales of LNG insulation materials, the company's growth driver, to climb toward 2H in light of shipbuilders' ship construction schedules. Profitability may fluctuate depending on the US\$/W rate. However, OP margin will likely improve YoY to 7.9% even based on our conservative estimates.

In 1Q, we project the company to display sharp earnings improvement, posting revenue of W85.9bn (+125% YoY), operating profit of W6.2bn (+248% YoY), and net profit of W3.9bn (turning to black YoY) under non-consolidated K-IFRS. The won's recent weakness against the US dollar is easing concerns about a slowdown in profitability. New orders reached a solid W92bn during the quarter.

Although the company is exhibiting a high debt ratio, we expect its financial structure to improve on the strong operating cash flow that should start to be generated full swing this year. We project net debt to fall from W158.7bn in 2012 to less than W100bn in 2015, while the net debt ratio will likely drop from 214% in 2012 to 100% in 2015. De-leveraging will accelerate net profit improvement, going forward.

Figure 16. Dongsung FINETEC's earnings forecasts

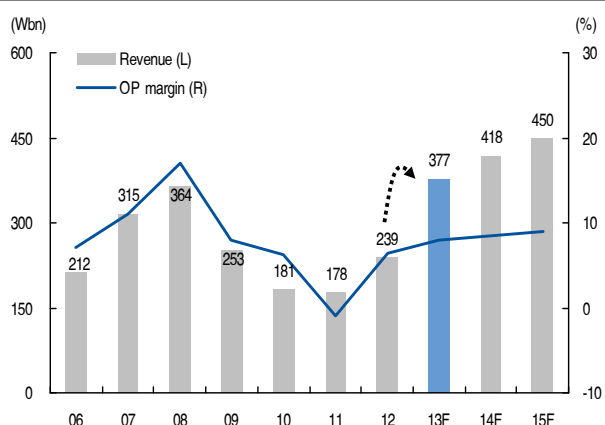
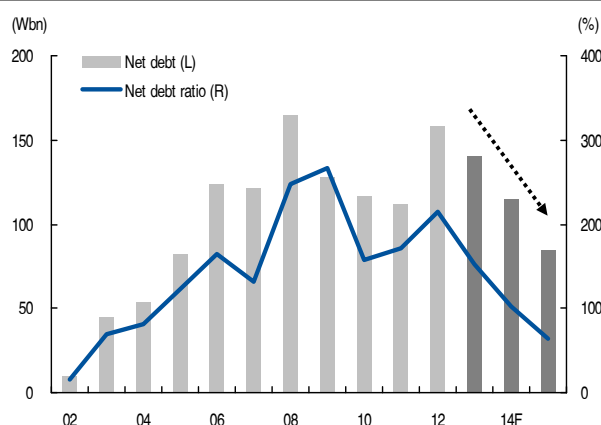


Figure 17. Dongsung FINETEC's net debt



Source: Company data, KDB Daewoo Securities Research

Source: Company data, KDB Daewoo Securities Research

Table 5. Quarterly and annual earnings

	2012				2013F				(Wbn, %)		
	1Q	2Q	3Q	4Q	1QF	2QF	3QF	4QF	2012	2013F	2014F
Revenue	38.2	50.1	74.4	76.7	85.9	90.7	100.7	99.5	239.4	376.8	417.7
QoQ growth	6	31	48	3	12	6	11	-1	-	-	-
YoY growth	-25	-5	95	113	125	81	35	30	35	57	11
<b>LNG</b>	<b>11.2</b>	<b>20.5</b>	<b>37.4</b>	<b>46.2</b>	<b>60.0</b>	<b>62.0</b>	<b>65.0</b>	<b>70.0</b>	<b>115.3</b>	<b>257.0</b>	<b>295.6</b>
Non-LNG	26.9	29.6	37.0	30.5	25.9	28.7	35.7	29.5	124.1	119.8	122.1
Operating profit	1.8	3.6	9.6	0.5	6.2	7.1	8.5	8.0	15.5	29.7	35.5
QoQ growth	TTB	101	170	-94	1,046	14	20	-6	-	-	-
YoY growth	-43	40	TTB	TTB	248	98	-12	1,374	TTB	91	20
Pretax profit	-1.1	1.6	7.7	1.7	4.3	5.2	6.8	6.3	10.0	22.5	29.3
Net profit	-1.1	1.6	8.0	1.6	3.9	4.7	6.1	5.6	10.1	20.2	24.9
QoQ growth	RR	TTB	401	-80	138	21	31	-7	-	-	-
YoY growth	TTR	93	TTB	TTB	-454	191	-24	248	TTB	100	23
OP margin	4.7	7.1	12.9	0.7	7.2	7.8	8.4	8.0	6.5	7.9	8.5
Net margin	-2.9	3.2	10.8	2.1	4.5	5.1	6.0	5.7	4.2	5.4	6.0

Source: Company data, KDB Daewoo Securities Research

## Dongsung FINETEC (033500 KQ/TP: W12,800)

## Comprehensive Income Statement (Summarized)

(Wbn)	12/12	12/13F	12/14F	12/15F
<b>Revenue</b>	<b>239</b>	<b>377</b>	<b>418</b>	<b>450</b>
<b>Cost of Sales</b>	<b>205</b>	<b>321</b>	<b>354</b>	<b>380</b>
<b>Gross Profit</b>	<b>34</b>	<b>56</b>	<b>64</b>	<b>70</b>
<b>SG&amp;A Expenses</b>	<b>19</b>	<b>26</b>	<b>28</b>	<b>29</b>
<b>Operating Profit (Adj)</b>	<b>16</b>	<b>30</b>	<b>36</b>	<b>41</b>
<b>Operating Profit</b>	<b>16</b>	<b>30</b>	<b>36</b>	<b>41</b>
<b>Non-Operating Profit</b>	<b>-6</b>	<b>-7</b>	<b>-6</b>	<b>-5</b>
Net Financial Income	8	7	6	5
Net Gain from Inv in Associates	-1	0	0	0
Pretax Profit	10	23	29	36
Income Tax	0	-2	-4	-8
Profit from Continuing Operations	<b>10</b>	<b>20</b>	<b>25</b>	<b>28</b>
Profit from Discontinued Operations	0	0	0	0
<b>Net Profit</b>	<b>10</b>	<b>20</b>	<b>25</b>	<b>28</b>
Controlling Interests	10	20	25	28
Non-Controlling Interests	0	0	0	0
<b>Total Comprehensive Profit</b>	<b>9</b>	<b>20</b>	<b>25</b>	<b>28</b>
Controlling Interests	9	20	25	28
Non-Controlling Interests	0	0	0	0
EBITDA	23	38	44	49
FCF (Free Cash Flow)	12	27	30	32
EBITDA Margin (%)	9.7	10.0	10.5	10.9
Operating Profit Margin (%)	6.5	7.9	8.5	9.0
Net Profit Margin (%)	4.2	5.4	6.0	6.2

## Cash Flows (Summarized)

(Wbn)	12/12	12/13F	12/14F	12/15F
<b>Cash Flows from Op Activities</b>	<b>-42</b>	<b>38</b>	<b>36</b>	<b>37</b>
Net Profit	10	20	25	28
Non-Cash Income and Expense	19	18	19	21
Depreciation	8	8	8	8
Amortization	0	0	0	0
Others	4	0	0	0
Chg in Working Capital	-63	2	-4	-4
Chg in AR & Other Receivables	-19	-11	-7	-6
Chg in Inventories	-65	-5	-2	-3
Chg in AP & Other Payables	10	20	5	4
Income Tax Paid	0	-2	-4	-8
<b>Cash Flows from Inv Activities</b>	<b>-7</b>	<b>-12</b>	<b>-10</b>	<b>-9</b>
Chg in PP&E	-4	-11	-10	-9
Chg in Intangible Assets	0	0	0	0
Chg in Financial Assets	-3	0	0	0
Others	-1			
<b>Cash Flows from Fin Activities</b>	<b>52</b>	<b>-24</b>	<b>-24</b>	<b>-24</b>
Chg in Financial Liabilities	52	-15	-15	-15
Chg in Equity	0	0	0	0
Dividends Paid	0	-1	-3	-4
Others	0	-7	-6	-5
<b>Increase (Decrease) in Cash</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>4</b>
Beginning Balance	2	4	6	7
Ending Balance	4	6	7	11

Source: Company data, KDB Daewoo Securities Research estimates

## Statement of Financial Condition (Summarized)

(Wbn)	12/12	12/13F	12/14F	12/15F
<b>Current Assets</b>	<b>161</b>	<b>179</b>	<b>190</b>	<b>202</b>
Cash and Cash Equivalents	4	6	7	11
AR & Other Receivables	59	71	78	84
Inventories	89	94	96	99
Other Current Assets	5	5	5	5
<b>Non-Current Assets</b>	<b>136</b>	<b>140</b>	<b>142</b>	<b>143</b>
Investments in Associates	2	2	2	2
Property, Plant and Equipment	125	128	130	131
Intangible Assets	2	2	2	2
<b>Total Assets</b>	<b>297</b>	<b>319</b>	<b>332</b>	<b>345</b>
<b>Current Liabilities</b>	<b>214</b>	<b>217</b>	<b>208</b>	<b>197</b>
AP & Other Payables	35	54	59	62
Short-Term Financial Liabilities	165	150	135	120
Other Current Liabilities	14	13	14	15
<b>Non-Current Liabilities</b>	<b>8</b>	<b>8</b>	<b>8</b>	<b>8</b>
Long-Term Financial Liabilities	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Other Non-Current Liabilities	6	6	6	6
<b>Total Liabilities</b>	<b>223</b>	<b>226</b>	<b>216</b>	<b>206</b>
<b>Controlling Interests</b>	<b>74</b>	<b>93</b>	<b>115</b>	<b>139</b>
Capital Stock	<b>14</b>	<b>14</b>	<b>14</b>	<b>14</b>
Capital Surplus	43	43	43	43
Retained Earnings	18	37	59	83
<b>Non-Controlling Interests</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Stockholders' Equity</b>	<b>74</b>	<b>93</b>	<b>115</b>	<b>139</b>

## Forecasts/Valuations (Summarized)

	12/12	12/13F	12/14F	12/15F
P/E (x)	20.0	13.1	10.6	9.6
P/CF (x)	11.3	9.3	8.0	7.3
P/B (x)	2.7	2.9	2.3	1.9
EV/EBITDA (x)	15.6	10.8	8.9	7.6
EPS (W)	376	750	924	1,027
CFPS (W)	662	1,052	1,233	1,339
BPS (W)	2,747	3,447	4,271	5,148
DPS (W)	0	50	100	150
Payout ratio (%)	0.0	6.7	10.8	14.6
Dividend Yield (%)	0.0	0.5	1.0	1.5
Revenue Growth (%)	34.8	57.4	10.9	7.6
EBITDA Growth (%)	265.3	62.8	16.0	11.6
Operating Profit Growth (%)	TTB	91.3	19.8	14.0
EPS Growth (%)	TTB	99.5	23.3	11.1
Accounts Receivable Turnover (x)	5.1	6.1	5.8	5.8
Inventory Turnover (x)	4.2	4.1	4.4	4.6
Accounts Payable Turnover (x)	12.7	11.5	9.6	9.4
ROA (%)	4.0	6.6	7.7	8.2
ROE (%)	14.6	24.2	24.0	21.8
ROIC (%)	6.1	11.9	13.3	13.6
Liability to Equity Ratio (%)	300.2	242.8	187.7	148.2
Current Ratio (%)	75.0	82.5	91.4	102.4
Net Debt to Equity Ratio (%)	213.0	151.0	107.6	75.8
Interest Coverage Ratio (x)	1.9	4.1	5.7	8.1

## Hankuk Carbon (017960 KS)

### Earnings to stay stellar

#### Machinery

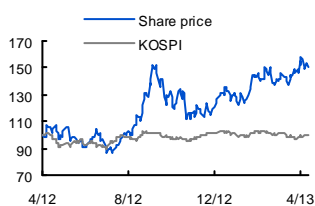
(Maintain)	<b>Buy</b>
Target Price (12M, W)	<b>11,000</b>
Share Price (05/06/13, W)	8,600
Expected Return	28%

OP (13F, Wbn)	26
Consensus OP (13F, Wbn)	26

EPS Growth (13F, %)	88.8
Market EPS Growth (13F, %)	20.8
P/E (13F, x)	15.7
Market P/E (13F, x)	9.4
KOSPI	1,961.48

Market Cap (Wbn)	323
Shares Outstanding (mn)	38
Free Float (%)	53.8
Foreign Ownership (%)	10.5
Beta (12M)	0.88
52-Week Low (W)	4,885
52-Week High (W)	9,210

(%)	1M	6M	12M
Absolute	7.5	12.4	42.6
Relative	5.7	10.7	44.0



#### Growth driver + cash cows

Hankuk Carbon was established in 1984 and expanded into the LNG-carrier insulation materials business in 2001. And it began supplying materials to SHI and HHI in 2002 and 2005, respectively. Capitalizing on its materials production technology, the company has diversified its business to include glass paper, dry film, material R&D, and electrons.

For 2013, we anticipate the company's revenues to stem from LNG-carrier insulation materials (63%), carbon (8%), glass paper (12%), material R&D (5%), and other units (12%). In short, while engineering growth with LNG-carrier insulation materials, the company has secured cash cows like carbon and glass paper to improve earnings stability.

#### 1Q preview: Earnings to stay stellar

We project Hankuk Carbon to deliver significant earnings growth in 1Q (under non-consolidated K-IFRS), with revenue of W58.5bn (+78% YoY), an operating profit of W5.7bn (+564% YoY), and a net profit of W4.9bn (+183% YoY). LNG-carrier insulation materials revenues are forecast to soar 214% YoY to W38bn, leading overall earnings growth. In light of a rebound in the US\$/W rate, the company's OP margin is likely to remain at a double-digit figure (10.7%).

Hankuk Carbon achieved new orders of W51bn in 2010, W168.4bn in 2011, and W96bn in 2012. And its 2013 target is W150bn. Although 1Q new orders (approximately W30bn) seem somehow weak relative to the target figure, we anticipate the company's new orders to increase YoY thanks to shipbuilders' strong order books.

For 2013, we forecast the company's non-consolidated earnings to hit a historic high, with revenue of W230.5bn (+41% YoY), an operating profit of W26.3bn (+104% YoY), and a net profit of W22.6bn (+142% YoY). Hankuk Carbon's order backlogs were W220bn as of end-1Q, which should keep the company busy for 1.5 years.

#### Valuation: Maintain Buy with TP of W11,000

We maintain our Buy call with a target price of W11,000. Hankuk Carbon's earnings are likely to stay robust this year thanks to the robust LNG-carrier insulation materials business. Considering the LNG market is in an unprecedented up cycle, we used the high-level P/E during previous up-cycle and a 2013 EPS estimate of W549 to derive our target price.

FY (Dec.)	12/10	12/11	12/12	12/13F	12/14F	12/15F
Revenue (Wbn)	131	108	163	230	255	280
OP (Wbn)	6	5	13	26	32	37
OP Margin (%)	4.8	4.4	7.9	11.4	12.5	13.2
NP (Wbn)	6	6	9	23	27	32
EPS (W)	218	189	291	549	664	838
ROE (%)	3.7	3.1	4.5	9.4	10.4	11.0
P/E (x)	26.4	29.9	24.9	15.7	13.0	10.3
P/B (x)	1.0	0.9	1.2	1.4	1.3	1.1

Note:s All figures are based on non-consolidated K-IFRS; NP refers to profit attributable to controlling interests  
Source: Company data, KDB Daewoo Securities Research estimates

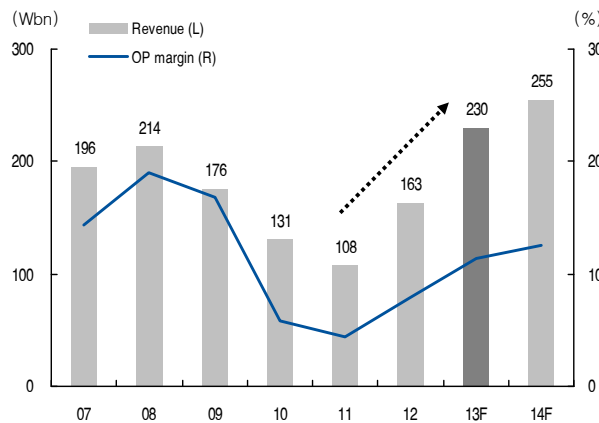
Table 6. Quarterly and annual earnings

(Wbn, %)

	2012				2013F				2012	2013F	2014F
	1Q	2Q	3Q	4Q	1QF	2QF	3QF	4QF			
Revenue	30.0	39.9	34.8	58.5	53.3	61.3	55.7	60.0	163.3	230.5	255.0
QoQ growth	-7	33	-13	68	-9	15	-9	8	-	-	-
YoY growth	27	50	37	82	78	54	60	3	51	41	11
LNG division	<b>10.5</b>	<b>21.9</b>	<b>14.9</b>	<b>38.0</b>	<b>33.0</b>	<b>40.0</b>	<b>36.0</b>	<b>37.0</b>	<b>85.3</b>	<b>146.0</b>	<b>165.8</b>
Non-LNG division	19.5	18.0	19.9	20.5	20.3	21.3	19.7	23.0	77.9	84.5	89.3
Operating profit	0.9	4.1	0.2	7.8	5.7	7.1	6.4	7.1	12.9	26.3	31.9
QoQ growth	-39	379	-96	4,756	-27	25	-11	12	-	-	-
YoY growth	43	98	-73	447	564	73	3,872	-8	175	104	21
Pretax profit	1.9	0.7	0.6	8.7	6.3	7.7	7.1	7.8	11.8	28.9	35.0
Net profit	1.7	0.6	0.3	6.7	4.9	6.0	5.5	6.1	9.3	22.6	27.3
QoQ growth	12	-68	-46	2,143	-27	22	-9	11	-	-	-
YoY growth	98	-76	-61	334	183	975	1,734	-9	68	142	21
OP margin	2.9	10.3	0.5	13.3	10.7	11.6	11.4	11.9	7.9	11.4	12.5
Net margin	5.8	1.4	0.9	11.5	9.2	9.8	9.9	10.2	5.7	9.8	10.7

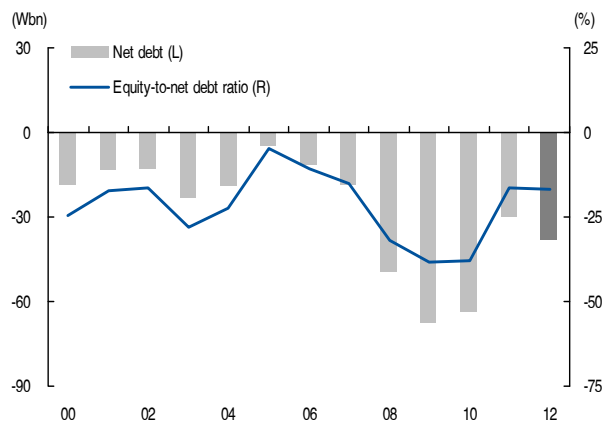
Source: Company data, KDB Daewoo Securities Research

Figure 18. Annual earnings



Source: Company data, KDB Daewoo Securities Research

Figure 19. Net debt and net debt ratio



Source: Company data, KDB Daewoo Securities Research

## Hankuk Carbon (017960 KS/TP: W11,000)

## Comprehensive Income Statement (Summarized)

(Wbn)	12/12	12/13F	12/14F	12/15F
<b>Revenue</b>	<b>163</b>	<b>230</b>	<b>255</b>	<b>280</b>
<b>Cost of Sales</b>	<b>134</b>	<b>183</b>	<b>200</b>	<b>218</b>
<b>Gross Profit</b>	<b>29</b>	<b>48</b>	<b>55</b>	<b>62</b>
<b>SG&amp;A Expenses</b>	<b>16</b>	<b>21</b>	<b>23</b>	<b>25</b>
<b>Operating Profit (Adj)</b>	<b>13</b>	<b>26</b>	<b>32</b>	<b>37</b>
<b>Operating Profit</b>	<b>13</b>	<b>26</b>	<b>32</b>	<b>37</b>
<b>Non-Operating Profit</b>	<b>-1</b>	<b>3</b>	<b>3</b>	<b>3</b>
Net Financial Income	-1	-1	-2	-2
Net Gain from Inv in Associates	0	0	0	0
Pretax Profit	12	29	35	40
Income Tax	-3	-6	-8	-9
Profit from Continuing Operations	<b>9</b>	<b>23</b>	<b>27</b>	<b>32</b>
Profit from Discontinued Operations	0	0	0	0
<b>Net Profit</b>	<b>9</b>	<b>23</b>	<b>27</b>	<b>32</b>
Controlling Interests	9	23	27	32
Non-Controlling Interests	0	0	0	0
<b>Total Comprehensive Profit</b>	<b>9</b>	<b>23</b>	<b>27</b>	<b>32</b>
Controlling Interests	9	23	27	32
Non-Controlling Interests	0	0	0	0
EBITDA	20	33	39	44
FCF (Free Cash Flow)	10	21	25	29
EBITDA Margin (%)	12.1	14.4	15.2	15.7
Operating Profit Margin (%)	7.9	11.4	12.5	13.2
Net Profit Margin (%)	5.7	9.8	10.7	11.3

## Cash Flows (Summarized)

(Wbn)	12/12	12/13F	12/14F	12/15F
<b>Cash Flows from Op Activities</b>	<b>-12</b>	<b>33</b>	<b>19</b>	<b>25</b>
Net Profit	9	23	27	32
Non-Cash Income and Expense	12	11	12	13
Depreciation	6	6	6	6
Amortization	1	1	1	1
Others	3	-1	-1	-1
Chg in Working Capital	-32	6	-12	-10
Chg in AR & Other Receivables	-21	4	-8	-6
Chg in Inventories	-18	-5	-9	-8
Chg in AP & Other Payables	4	10	5	3
Income Tax Paid	-2	-6	-8	-9
<b>Cash Flows from Inv Activities</b>	<b>-7</b>	<b>-11</b>	<b>-9</b>	<b>-7</b>
Chg in PP&E	-1	-10	-8	-8
Chg in Intangible Assets	0	-1	-1	-1
Chg in Financial Assets	-10	-1	-2	0
Others	3	1	2	2
<b>Cash Flows from Fin Activities</b>	<b>-1</b>	<b>-3</b>	<b>-4</b>	<b>-4</b>
Chg in Financial Liabilities	0	-3	0	0
Chg in Equity	2	3	0	0
Dividends Paid	-2	-4	-4	-4
Others	-1	0	0	0
<b>Increase (Decrease) in Cash</b>	<b>-23</b>	<b>18</b>	<b>6</b>	<b>15</b>
Beginning Balance	48	26	44	50
Ending Balance	26	44	50	65

Source: Company data, KDB Daewoo Securities Research esti

## Statement of Financial Condition (Summarized)

(Wbn)	12/12	12/13F	12/14F	12/15F
<b>Current Assets</b>	<b>177</b>	<b>196</b>	<b>222</b>	<b>249</b>
Cash and Cash Equivalents	26	44	50	65
AR & Other Receivables	53	49	57	63
Inventories	63	67	77	84
Other Current Assets	4	6	7	7
<b>Non-Current Assets</b>	<b>108</b>	<b>116</b>	<b>120</b>	<b>124</b>
Investments in Associates	0	0	0	0
Property, Plant and Equipment	64	68	70	72
Intangible Assets	6	6	6	6
<b>Total Assets</b>	<b>285</b>	<b>312</b>	<b>342</b>	<b>373</b>
<b>Current Liabilities</b>	<b>36</b>	<b>44</b>	<b>50</b>	<b>54</b>
AP & Other Payables	26	36	41	44
Short-Term Financial Liabilities	0	0	0	0
Other Current Liabilities	10	8	9	9
<b>Non-Current Liabilities</b>	<b>22</b>	<b>19</b>	<b>19</b>	<b>19</b>
Long-Term Financial Liabilities	<b>18</b>	<b>15</b>	<b>15</b>	<b>15</b>
Other Non-Current Liabilities	3	3	3	3
<b>Total Liabilities</b>	<b>57</b>	<b>63</b>	<b>69</b>	<b>72</b>
<b>Controlling Interests</b>	<b>228</b>	<b>250</b>	<b>273</b>	<b>301</b>
Capital Stock	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>
Capital Surplus	50	53	53	53
Retained Earnings	175	193	217	244
<b>Non-Controlling Interests</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Stockholders' Equity</b>	<b>228</b>	<b>250</b>	<b>273</b>	<b>301</b>

## Forecasts/Valuations (Summarized)

	12/12	12/13F	12/14F	12/15F
P/E (x)	24.9	15.7	13.0	10.3
P/CF (x)	14.4	12.0	10.3	8.4
P/B (x)	1.2	1.4	1.3	1.1
EV/EBITDA (x)	11.9	8.0	6.7	5.6
EPS (W)	291	549	664	838
CFPS (W)	504	718	831	1,024
BPS (W)	6,050	6,087	6,656	7,994
DPS (W)	70	100	100	100
Payout ratio (%)	26.6	17.3	14.3	12.3
Dividend Yield (%)	1.0	1.2	1.2	1.2
Revenue Growth (%)	51.4	41.0	10.7	9.8
EBITDA Growth (%)	74.2	68.0	16.6	13.7
Operating Profit Growth (%)	173.2	103.4	21.0	16.3
EPS Growth (%)	54.2	88.9	20.8	26.2
Accounts Receivable Turnover (x)	4.0	4.6	4.9	4.8
Inventory Turnover (x)	3.1	3.5	3.6	3.5
Accounts Payable Turnover (x)	9.0	9.5	8.2	8.1
ROA (%)	3.4	7.5	8.3	8.8
ROE (%)	4.5	9.4	10.4	11.0
ROIC (%)	7.5	14.2	16.4	17.6
Liability to Equity Ratio (%)	25.2	25.1	25.3	24.1
Current Ratio (%)	495.3	447.1	441.1	466.0
Net Debt to Equity Ratio (%)	-17.4	-23.6	-24.1	-26.8
Interest Coverage Ratio (x)	6.4			

## Important Disclosures & Disclaimers

### Disclosures

Daewoo Securities Co., Ltd.'s analyst attended the IR meeting held by Dongsung FINETEC within recent one month. Expenses related to the meeting were covered by Dongsung FINETEC.

Stock Ratings		Industry Ratings	
Buy	Relative performance of 20% or greater	Overweight	Fundamentals are favorable or improving
Trading Buy	Relative performance of 10% or greater, but with volatility	Neutral	Fundamentals are steady without any material changes
Hold	Relative performance of -10% and 10%	Underweight	Fundamentals are unfavorable or worsening
Sell	Relative performance of -10%		

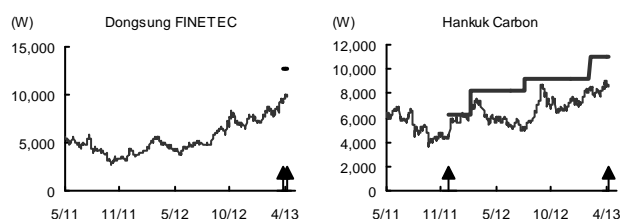
\* Ratings and Target Price History (Share price (----), Target price (----), Not covered (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆))

\* Our investment rating is a guide to the relative return of the stock versus the market over the next 12 months.

\* Although it is not part of the official ratings at Daewoo Securities, we may call a trading opportunity in case there is a technical or short-term material development.

\* The target price was determined by the research analyst through valuation methods discussed in this report, in part based on the analyst's estimate of future earnings.

The achievement of the target price may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.



### Analyst Certification

The research analysts who prepared this report (the "Analysts") are registered with the Korea Financial Investment Association and are subject to Korean securities regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws and regulations thereof. Opinions expressed in this publication about the subject securities and companies accurately reflect the personal views of the Analysts primarily responsible for this report. Daewoo Securities Co., Ltd. policy prohibits its Analysts and members of their households from owning securities of any company in the Analyst's area of coverage, and the Analysts do not serve as an officer, director or advisory board member of the subject companies. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. No part of the compensation of the Analysts was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report but, like all employees of Daewoo Securities, the Analysts receive compensation that is impacted by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading and private client division. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or Daewoo Securities Co., Ltd. except as otherwise stated herein.

### Disclaimers

This report is published by Daewoo Securities Co., Ltd. ("Daewoo"), a broker-dealer registered in the Republic of Korea and a member of the Korea Exchange. Information and opinions contained herein have been compiled from sources believed to be reliable and in good faith, but such information has not been independently verified and Daewoo makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein or of any translation into English from the Korean language. If this report is an English translation of a report prepared in the Korean language, the original Korean language report may have been made available to investors in advance of this report. Daewoo, its affiliates and their directors, officers, employees and agents do not accept any liability for any loss arising from the use hereof. This report is for general information purposes only and it is not and should not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws and accounting principles and no person whose receipt or use of this report would violate any laws and regulations or subject Daewoo and its affiliates to registration or licensing requirements in any jurisdiction should receive or make any use hereof. Information and opinions contained herein are subject to change without notice and no part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of Daewoo. Daewoo, its affiliates and their directors, officers, employees and agents may have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. Daewoo and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making or other financial services as are permitted under applicable laws and regulations. The price and value of the investments referred to in this report and the income from them may go down as well as up, and investors may realize losses on any investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur.

**Distribution**

**United Kingdom:** This report is being distributed by Daewoo Securities (Europe) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as "Relevant Persons"). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.

**United States:** This report is distributed in the U.S. by Daewoo Securities (America) Inc., a member of FINRA/SIPC, and is only intended for major institutional investors as defined in Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934. All U.S. persons that receive this document by their acceptance thereof represent and warrant that they are a major institutional investor and have not received this report under any express or implied understanding that they will direct commission income to Daewoo or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Daewoo Securities (America) Inc., which accepts responsibility for the contents of this report in the U.S. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.

**Hong Kong:** This document has been approved for distribution in Hong Kong by Daewoo Securities (Hong Kong) Ltd., which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong (Cap. 571, Laws of Hong Kong) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong to any person.

**All Other Jurisdictions:** Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact Daewoo or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject Daewoo and its affiliates to any registration or licensing requirement within such jurisdiction.

**KDB Daewoo Securities International Network****Daewoo Securities Co. Ltd. (Seoul)**

Head Office  
34-3 Yeouido-dong, Yeongdeungpo-gu  
Seoul 150-716  
Korea  
Tel: 82-2-768-3026

**Daewoo Securities (Hong Kong) Ltd.**

Two International Finance Centre  
Suites 2005-2012  
8 Finance Street, Central  
Hong Kong  
Tel: 85-2-2514-1304

**Daewoo Securities (America) Inc.**

600 Lexington Avenue  
Suite 301  
New York, NY 10022  
United States  
Tel: 1-212-407-1022

**Daewoo Securities (Europe) Ltd.**

Tower 42, Level 41  
25 Old Broad Street  
London EC2N 1HQ  
United Kingdom  
Tel: 44-20-7982-8016

**Tokyo Representative Office**

7th Floor, Yusen Building  
2-3-2 Marunouchi, Chiyoda-ku  
Tokyo 100-0005  
Japan  
Tel: 81-3- 3211-5511

**Beijing Representative Office**

Suite 2602, Twin Towers (East)  
B-12 Jianguomenwai Avenue  
Chaoyang District, Beijing 100022  
China  
Tel: 86-10-6567-9699

**Shanghai Representative Office**

Unit 13, 28<sup>th</sup> Floor, Hang Seng Bank Tower  
1000 Lujiazui Ring Road  
Pudong New Area, Shanghai 200120  
China  
Tel: 86-21-5013-6392

**Ho Chi Minh Representative Office**

Centec Tower  
72-74 Nguyen Thi Minh Khai Street  
Ward 6, District 3, Ho Chi Minh City  
Vietnam  
Tel: 84-8-3910-6000