Doosan Engine

Investor Relations
'10 Operating Results & '11 Business Plan

March 2011
Doosan Engine

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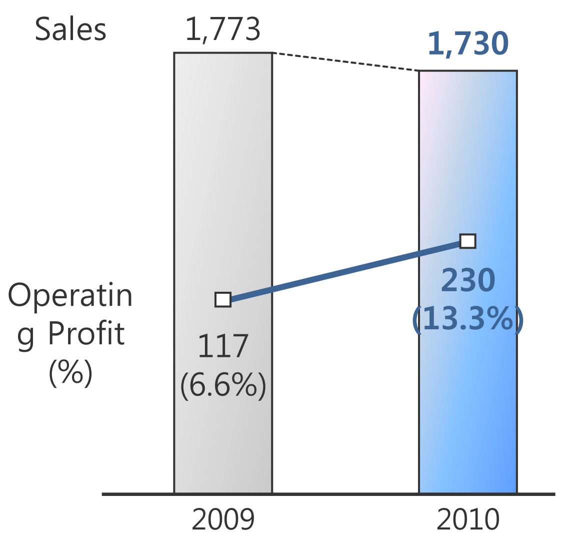
Disclaimer

These forward-looking statements are based on a number of assumptions about the future, some of which are beyond Doosan Engine's control. Such forward-looking statements are subject to certain risks and uncertainties that could cause actual results to differ materially from those contemplated by the relevant forward-looking statements.

2010 Operating Result Summary

Revenue & Operating Profit

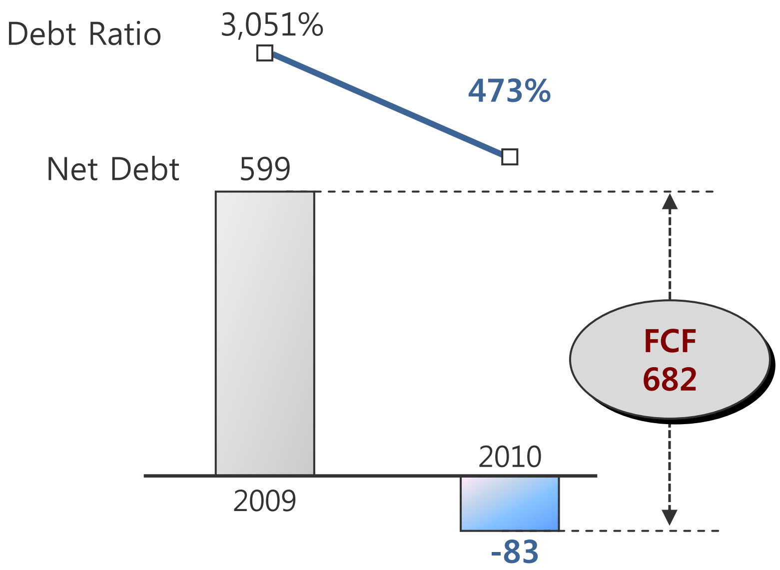
(Unit : Wbn)



- Sales declined by 2.4%
- OP grew 98% : OPM expanded 6.7%p
  - Benefit from strong FX (53Wbn)
  - Reducing RM cost and OP cost (41Wbn)
  - Product mix improvement (14Wbn)
  - Royalty reduction from weakener Euro (13Wbn)

Leverage ratios

(Unit : Wbn)



- Improving cash flow: 2010-end Net cash of 83Wbn
- 2010 FCF of 682Wbn
  - Operating cash flow (278Wbn)
  - Gain on DI stake disposal (272Wbn)
  - Proceeds from IPO (132Wbn)

2010 Business Result – 4Q

‘10 4Q Result

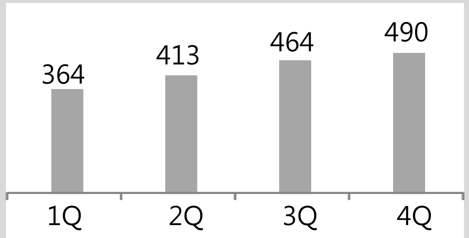
(Unit : Wbn)

	09.4Q	10.3Q	**10.4Q**	QoQ	YoY
Sales	504	464	**490**	5.7%	-2.8%
COGS Ratio(%)	85.8%	80.7%	**84.6%**	3.9%p	-1.2%p
SG&A	15	12	**15**		
Operating Profit	56	77	**60**	-22.0%	7.0%
OP Margin(%)	11.2%	16.7%	**12.3%**	-4.4%p	1.1%p
Non-operating Profit	87	6	**135**		
Interest income	1	2	**2**		
Equity method gains	0	0	**0**		
Derivatives gains	2	0	**1**		
Gain on disposal of investment asset	40	0	**120**		
Non-operating Expense	86	31	**35**		
Interest expense	13	9	**6**		
Equity method loss	66	11	**25**		
Derivatives loss	3	0	**3**		
Pretax Profit	57	52	**160**	210.9%	179.5%
Net Profit	33	36	**128**		

’10 4Q Highlights

Sales

- Continued growth in QoQ sales



OPM

- 4Q OPM: 12.3% (-4.4%p QoQ)
  - Provision for construction losses increased (9Wbn)
  - Engine parts’ASP hike (7Wbn)
  - Labor cost rose from bonus payment 5Wbn

Non-OP

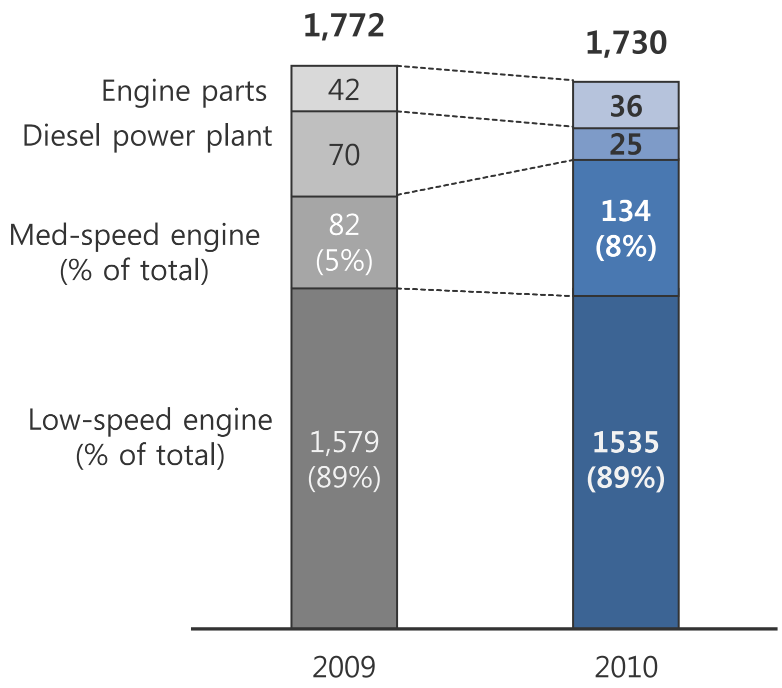
- Gain on DI stake disposal (120Wbn)
- Equity method gain (-25Wbn; ’10 FY -129Wbn)
- Derivatives gain (-2Wbn; ’10 FY +8Wbn)

Revenue analysis

- **Sales declined due mainly to the changes in delivery schedule (-2.4% YoY)**
- **Medium-speed engine sales (started from '08) soared (+64% YoY)**

Sales breakdown

(Unit : Wbn)



Sales & Operating Profit by Division

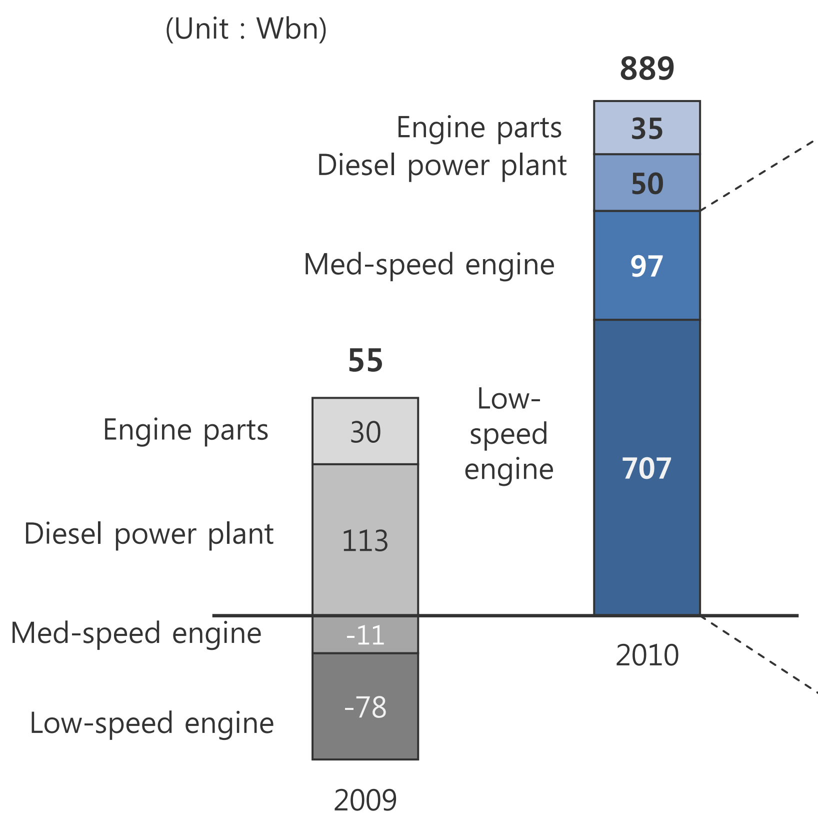
(Unit : Wbn)

	FY 2009		**FY 2010**		Sales
	Sales	OPM	Sales	OPM	
Marine Engine (Low&Med speed)	1,661	6.4%	**1,670**	**13.2%**	0.5%
Diesel power plant & Engine parts	112	8.9%	**61**	**16.2%**	-46.0%
Total	**1,773**	**6.6%**	**1,730**	**13.3%**	**-2.4%**

New orders

- **New orders recover to 889Wbn from 55Wbn in 2009**

New orders*



Marine engine (Low&Med-speed) new orders

(Unit : Wbn)

By Ship type

	FY 2009	FY 2010
Container	-116	439
Bulker	-7	73
Tanker	-37	284
Other	71	2
Offshore	0	5
Total	**-89**	**804**

By Customers

	FY 2009	FY 2010
SHI & DSME	46	312
Other domestic	-13	28
China	9	426
Other exports	-131	38
Total	**-890**	**804**

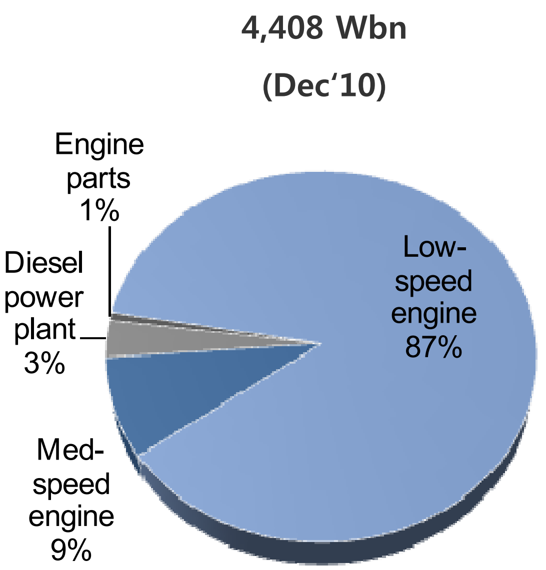
* New orders : Recognized upon receiving prepayment deposit (post-reflection of cancellation and order changes)

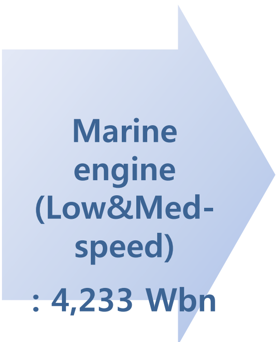
Order backlog

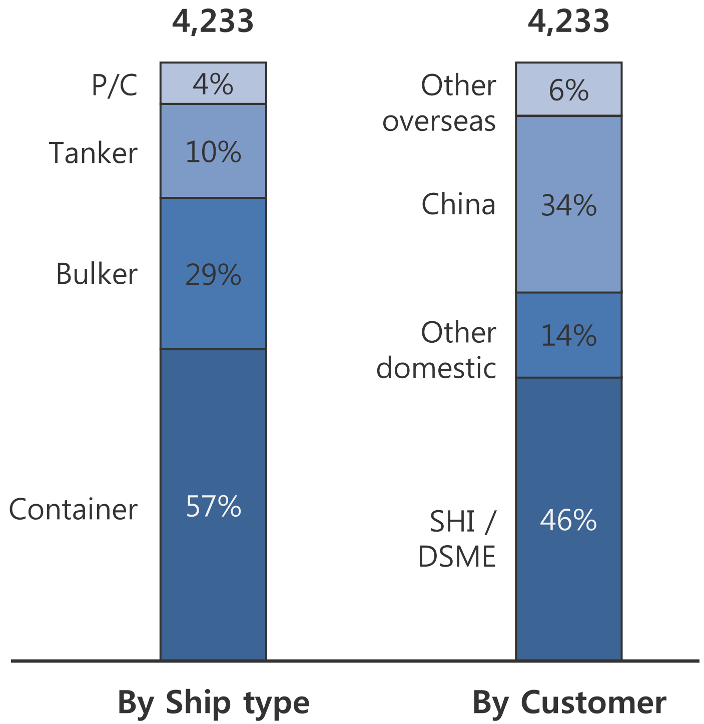
- **Order backlog : 4.4 trn won (2.5 yrs of backlog based on '10 sales)**

Orderbook breakdown

(Unit : Wbn, %)







※ Order backlog : based on advance payments deposit
(4,665 Wbn based on contract amount)

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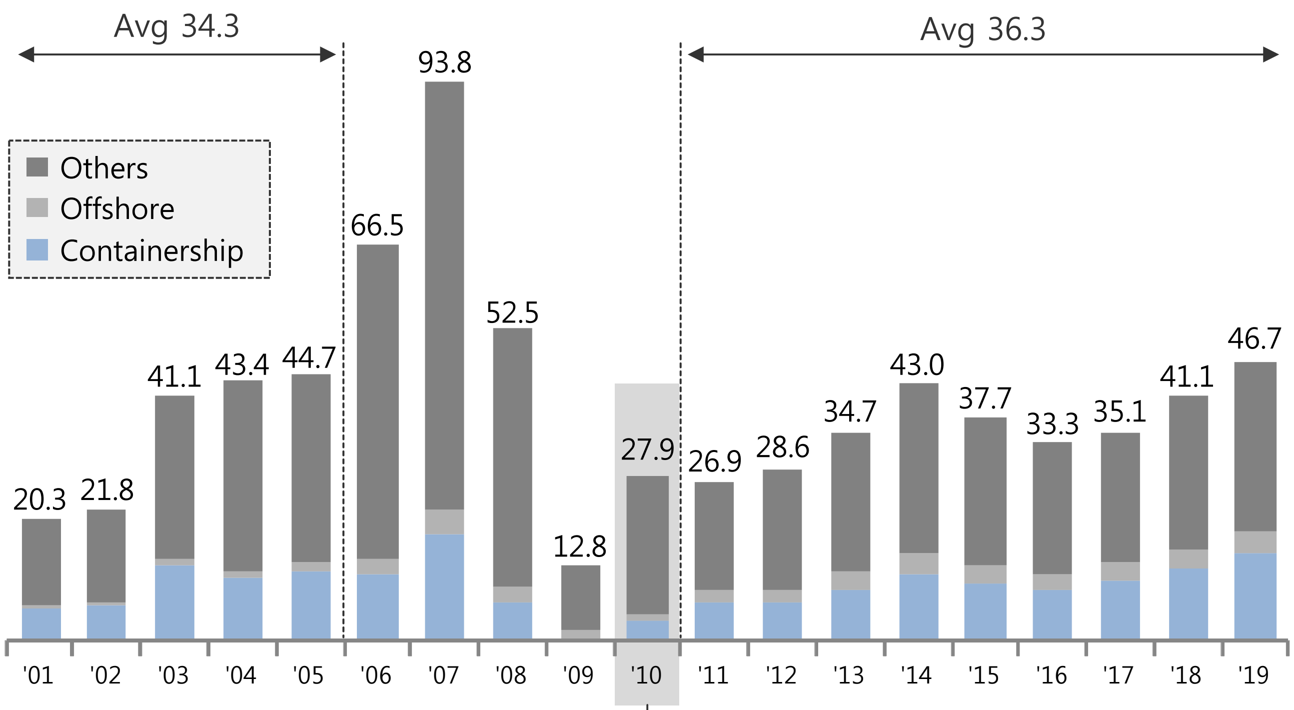
Shipbuilding market outlook

Global shipbuilding market should recover to pre-upcycle (normalized) market level from 2011

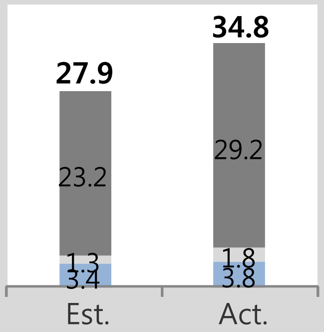
Global new order outlook

(Unit : mCGT)



'10 Actual vs. Estimates

- 25% higher than Clarkson forecast of 27.9mCGT



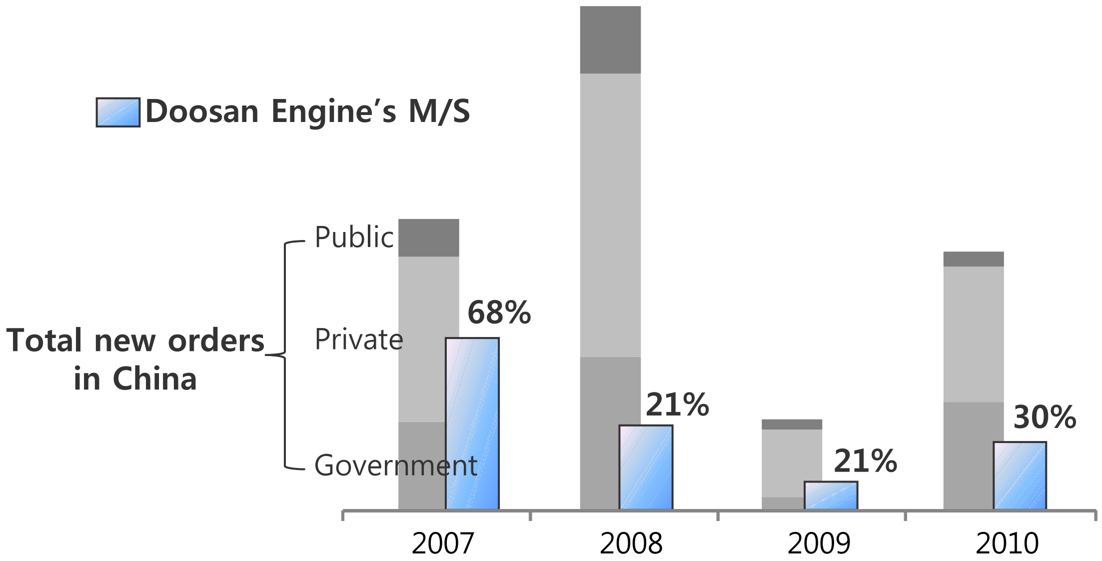
* Source : Clarkson Forecast Report('10. 9)

China market

M/S in China recovered to 30% in 2010; expected to sustain 30% level

Doosan engine new order M/S in China

(Unit: '000 HP)



	2007	2008	2009	2010
Total new orders in China	7,748	13,400	2,407	6,879
New order to Doosan Engine	5,247	2,800	500	2,026
(M/S)	68%	21%	21%	30%

Doosan Engine's performance ('07~'10)

- **Avg 35% M/S in China**

※ Past M/S : Based on actual engine new order from 42 shipyards in china (Based on 50+ Bore segments) (2008 detail not available; calculated M/S based on Doosan Engine's new order vs. Clarkson's total new order data)

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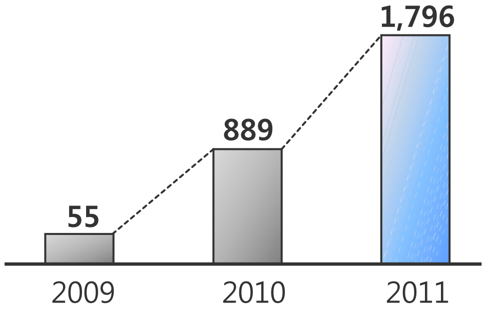
2011 Business plan summary

(Unit : Wbn)

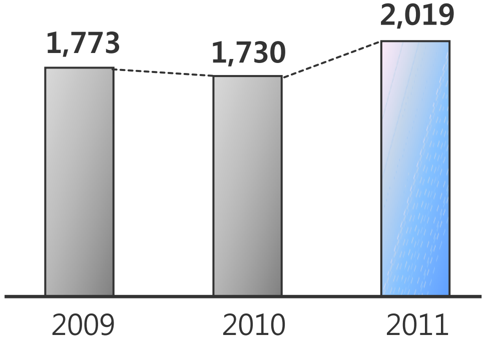
	2010 (K-GAAP)	**2011(E) (IFRS)**	YoY
New orders*	889	**1,796**	102.1%
Revenue	1,730	**2,019**	16.7%
COGS Ratio(%)	84%	**83%**	-0.1%p
SG&A	54	**69**	
Operating Profit	230	**260**	12.8%
OP Margin(%)	13.3%	**12.9%**	-0.4%p
Non-op Profit	196	**9**	
Interest income	7	3	
Equity method gains	1	6	
Derivatives gains	13	0	
Non-op Expense	190	**17**	
Interest expense	35	15	
Equity method loss	130	0	
Derivatives loss	6	0	
Pretax Profit	237	**252**	6.2%
Net Profit	166	**192**	16.2%
Net Debt	-83	**-184**	
Liability ratio	473%	**269%**	

* New order recognition : Booked after recognizing prepayment deposit

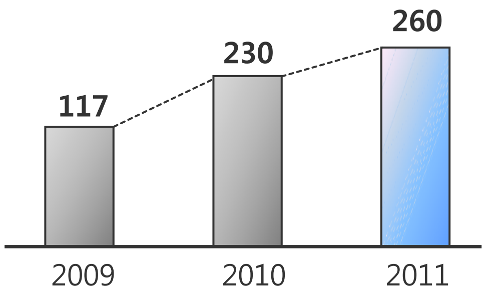
New orders +102%



Sales +16.7%



Operating Profit +12.8%

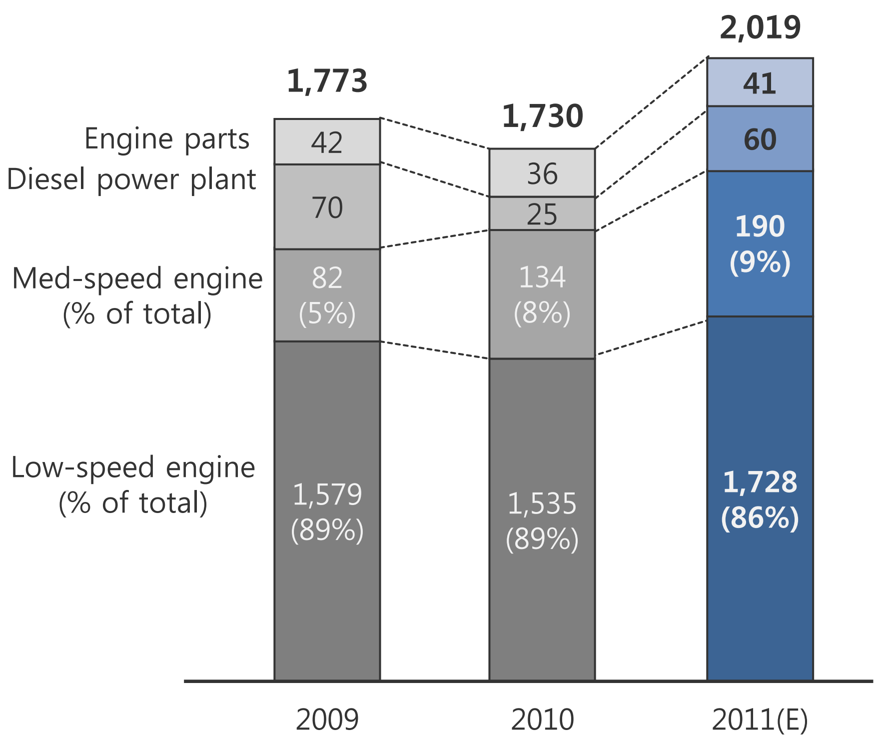


Revenue & OPM target

- **2,019Wbn (+16.7% YoY) expected**
  : Low-speed engine +13% YoY, Med-speed engine +41% YoY

Sales breakdown

(Unit : Wbn)



Sales & Operating profit by division

(Unit : Wbn)

	FY 2010		FY 2011(E)		Sales growth
	Sales	OPM	Sales	OPM	
Marine Engine (Low&Med-speed)	1,670	13.2%	**1,918**	**12.9%**	14.9%
Diesel power plant & Engine parts	61	16.2%	**101**	**12.7%**	67.1%
Total	**1,730**	**13.3%**	**2,019**	**12.9%**	**16.7%**

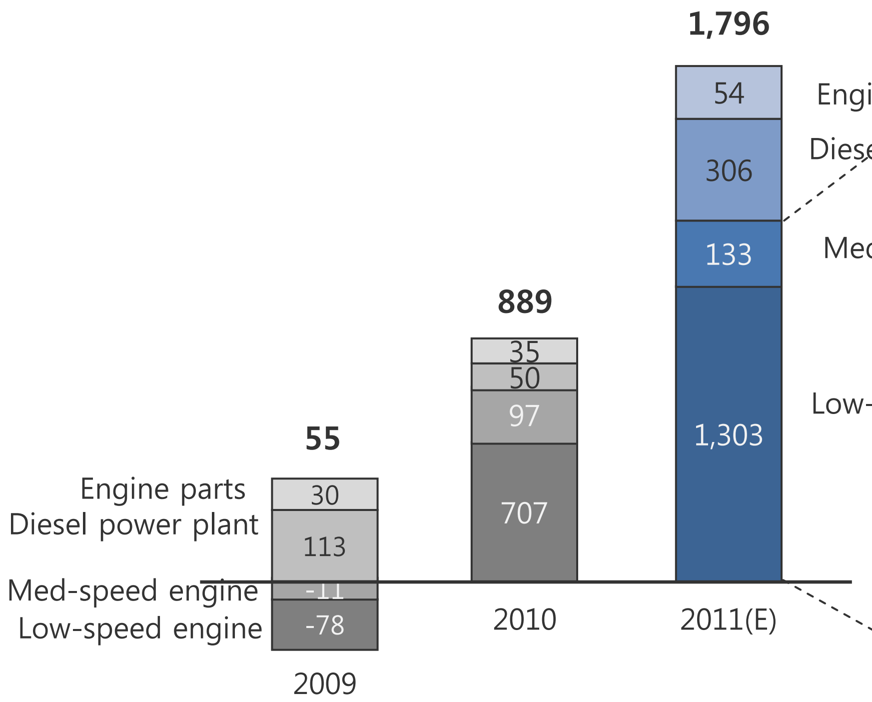
New order outlook

• **Targeting ₩1,796bn (+102% YoY)**

: 1) Accrued from previous period 257Wbn, 2) Containership new order increase which has the highest sales gearing

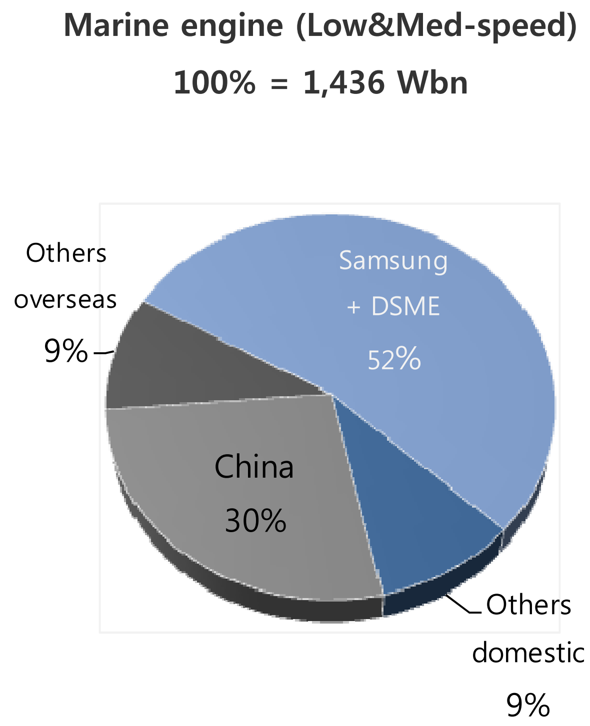
New orders

(Unit : Wbn)



'11 Marine engine new order outlook (by Customers)

(Unit : Wbn)



Mid/long term plan and '11 operating target

Strategy	Business target	'11 target plan
1 Improve order-taking competitiveness during downcycle	• Penetrating new markets	• Expand Product Span : Expanding small-low-speed, and med-speed propulsion engine market • Region sales expansion : Strengthen market position in Brazil and Russia • Customer base : Secure new customers by extending agent coverage
	• Secure cost-competitiveness	• Internalizing Turbocharger manufacture starts in 11.2Q
2 Stable business portfolio	• Customer-value based differentiated marketing	• Differentiated marketing efforts for ship owner/shipyard • Build competitiveness with focus on "quality engine" • Secure "Entity Presence" in China
	• Diversify Business scope via new business	• WHR* : Agreement for developing Licensor's new engine ('11. 2) • NOx reducing attachment devices
	• Strengthen diesel power plant and parts·C/S business	• Emergency generator for nuclear power plants : Domestic and overseas (e.g. UAE) • Engine parts·C/S business : localization of parts and expansion of Retrofit Items, Increase overseas sales agencies (Currently 2 → 11)

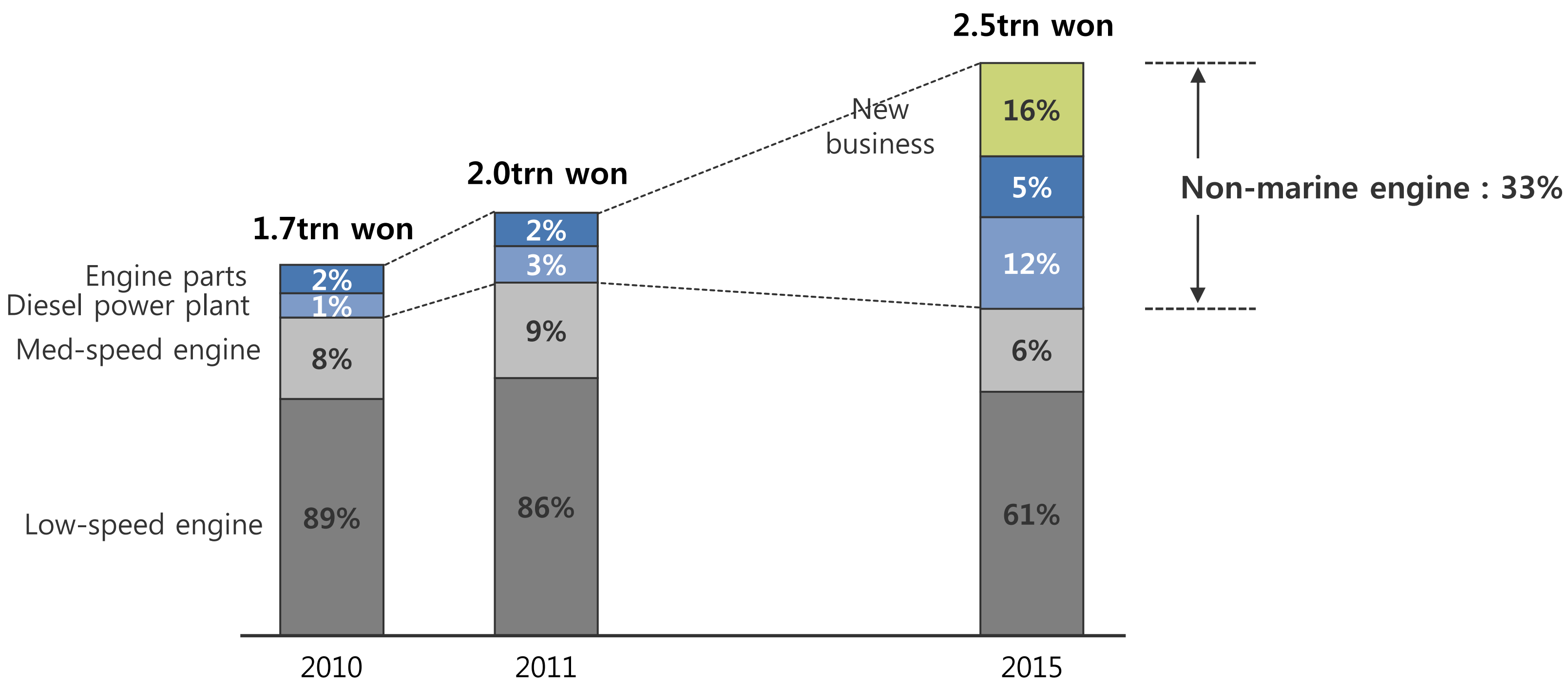
* WHR : Waste Heat Recovery

Mid-to-long term Vision

• **Focus on non-marine engine areas to achieve 2.5trn won sales by 2015**

Mid-to-long term Financial Aspiration – Sales

(Unit : Wtr)



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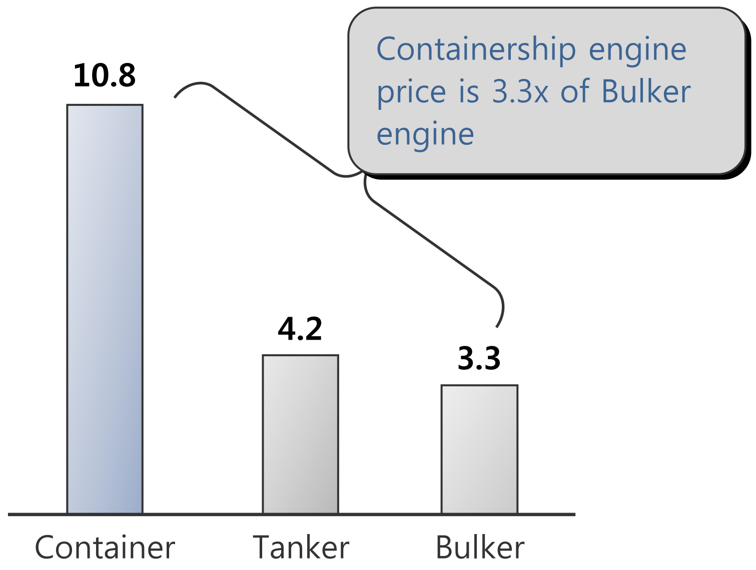
Investment Point 1. Containership new order recovery

- **From 2H10, recovery in new orders for large containerships**
  : NOL, Evergreen, MSC, AP Moller Maersk, etc.

Engine ASP by ship type

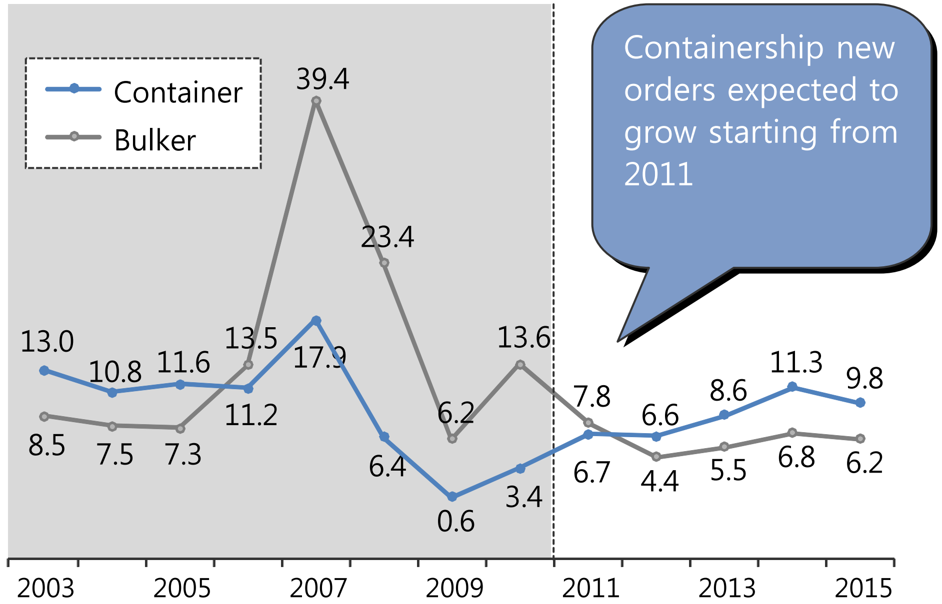
(Unit : M$/ship)



* Source : ASP of newly ordered Engines after 2006

New order trend by ship type

(Unit : mCGT)

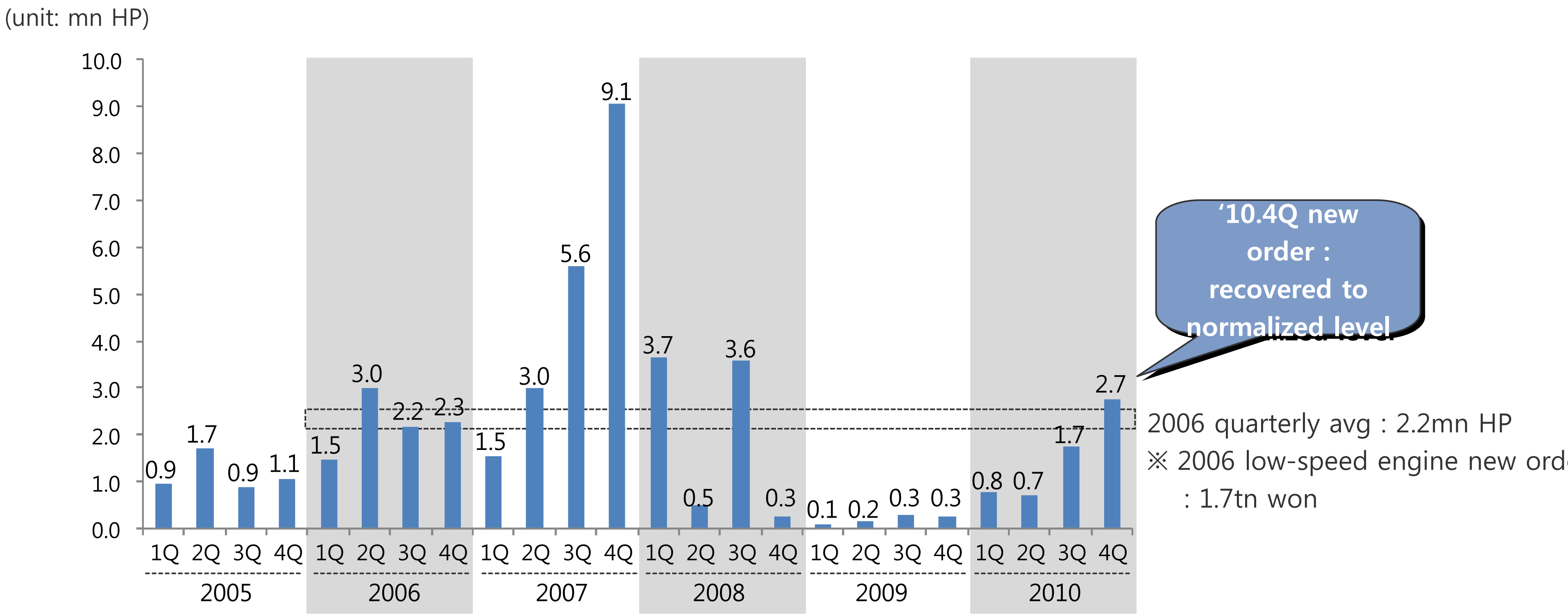


* Source : Clarkson Forecast Report ('10. 9)

Investment Point 2. Quarterly new order trend

• From 4Q10, new orders recovered to 2006 level

Quarterly low-speed engine new order trend (contract basis)

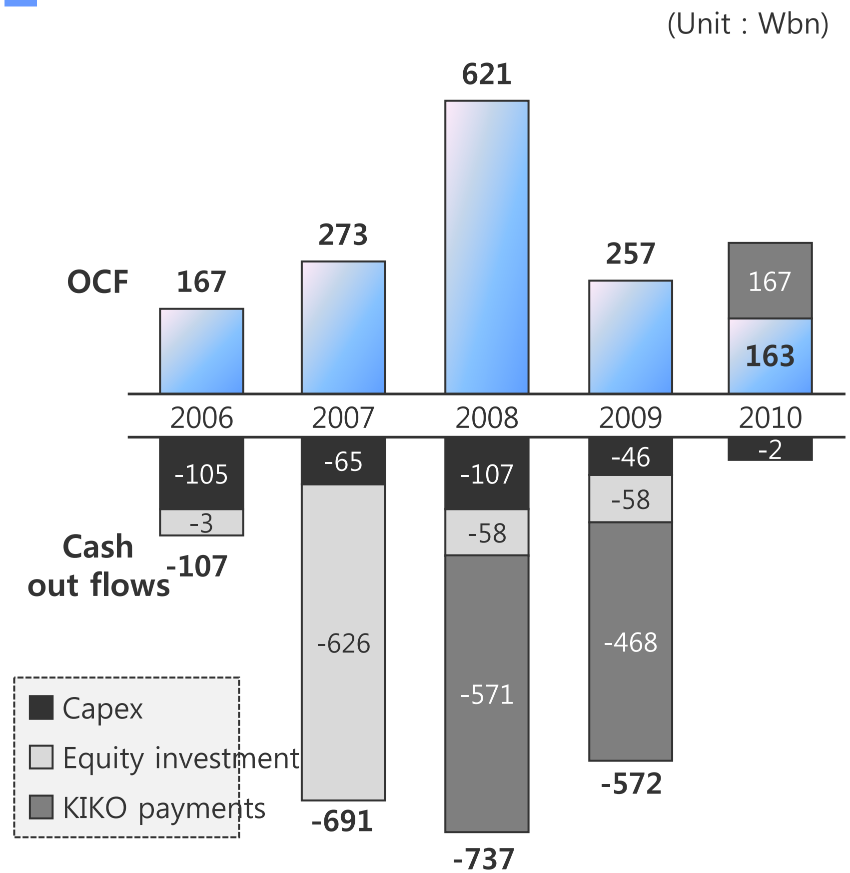


* Quarterly new orders : Not reflecting cancellations

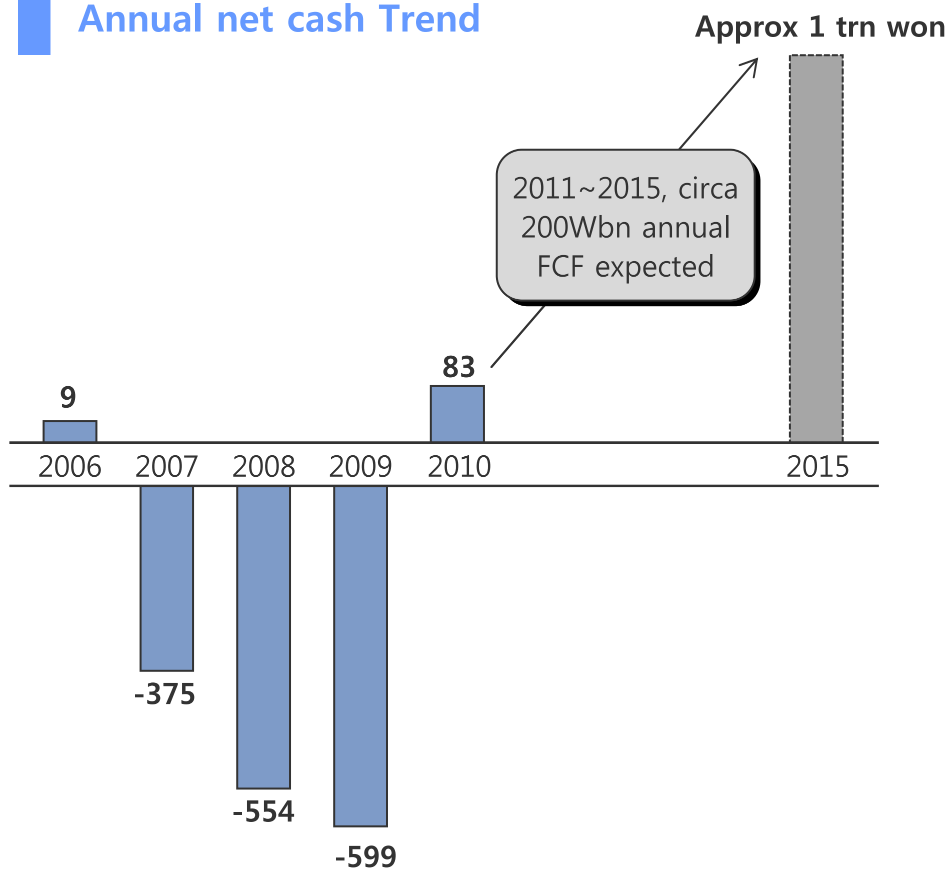
Investment Point 3. Ample cashflow

- **2011~2015, circa W200bn annual FCF expected**
  : 1) Major Capex completed 2) Equity investment (DII) terminated 3) KIKO payment finished

Annual OCF and major Cash-out flows



Annual net cash Trend



Investment Point 4. IMO environment regulation trend(1/2)

- **Due to stricter regulation by IMO on emissions, new engine price likely to rise and retrofit market for existing ships likely to form**

  : When applying NOx Tier Ⅲ, engine price could increase by 30~50%

NOx Emission

- NOx (Nitric Oxides) emission is regulated to be less than 17.0 g/kWh based on IMO Tier I (effective from 2000), 14.4 g/kWh on IMO Tier II (effective from 2011), and 3.4 g/kWh on IMO Tier III (effective from 2016), for low-speed engines with below-130 rpm.
- IMO Tier III is applied only to NOx Emission Control Areas (Baltic sea, The North Sea, etc.), and IMO Tier II will be applied in other areas.

Sulfur Content for Fuel

- Regulation on Sulfur Content for Fuel is applied differently to SOx Emission Control Areas (SOx ECA or SECA, Baltic sea, The North Sea, etc.)
- Sulfur Content for Fuel in SECA area will be limited to 1.5% from 2000, 1.0% from July 2010, and 0.1% from 2015. For other regions, limited to 4.5% from 2000, 3.5% from 2012, and 0.5% from 2020.

GHG Emission

- Currently under discussion for GHG(Green House Gas) regulation, and continually drafting regulatory plans categorically such technical measures as EEDI(Energy Efficiency Design Index), such operational measures as EEOI(Energy Efficiency Operational Indicator) and SEEMP (Ship Energy Efficiency Management Plan) and such market-based measures (M&M) as GHG Fund and ETS (Emission Trading Scheme).

Investment Point 4. IMO environmental regulation trend(2/2)

IMO Regulation

		~'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19	'20	'21	'22
NOx		Tier Ⅰ : 17.0g			Tier Ⅱ : 14.4g					Tier Ⅲ : 3.4g						
SOx	SECA	1.5%		1% (2010.7.1~)					0.1% (2015.1.1~)							
	Global	4.5%				3.5% (2012.1.1~)								0.5% (2020.1.1~)		
	CARB*	MGO 1.5%				1.5%										
		MDO 2.0%		0.5%		0.1%										

* CARB(California Air Resources Board) : Provisions regulated by US California State's law

Regulatory Trend

2011	2013	2016	2020	2020	2030	2050
IMO CO2 regulation EEDI/EEOI expected	Full-scale introduction of CO2 regulation	**IMO NOx Tier Ⅲ** NOx : Below 3.4g/kWh (80%↓ vs. IMO Tier I)	**IMO SOx regulation** Below 0.5%	CO2: 30% reduction	CO2: 50% reduction	CO2: 70% reduction

Engine ASP

	Tier Ⅰ engine	Tier Ⅱ engine	Tier Ⅲ engine	Initial investment required
Engine ASP hike (From attaching Nox reduction device)	100%	100%	130~150%	• SCR : ~98USD/HP • EGR : 63Euro/HP

Appendix

I. Company overview

II. History

III. Plants

IV. Production infrastructure

V. Business area

VI. Impact from IMO’s environment regualtion

VII. Summary of annual financials

Appendix 1. Company Overview

Overview

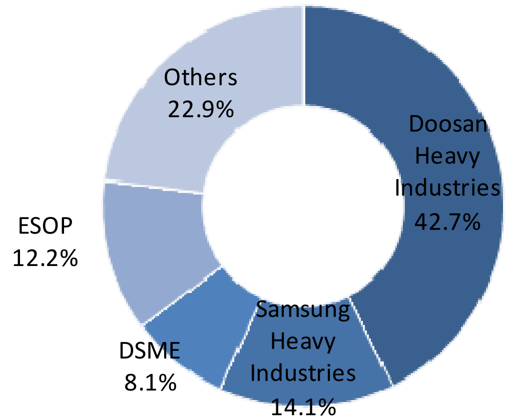
Company	Doosan Engine Co., Ltd
Date of Foundation	Dec 30, 1999
Address	Sinchon-dong 69-3, Seongsan-gu, Changwon-si, Gyeongnam
Business	Marine diesel engines / Diesel engines for power plants
Exports	Local/direct Exports (96%), Domestic (4%) (Based on 2010 sales)
Capital	W69.5bn
No. of Employees	1,269 [As at end-2010]
Subsidiary	Doosan Marine Industrial (DMI) Dalian Co., Ltd (100% owned)

Business Areas

Business Areas	Sales (2010)	% of sales
Low-speed engine	W1,535bn	89%
Med-speed engine	W134bn	8%
Diesel power plant	W25bn	1%
Engine parts and C/S	W36bn	2%
Total	W1,730bn	100%

Shareholders

[As of IPO date('11.1.4)]



Appendix 2. History

Incorporation / developemnt — **Platform for global expansion** — **Next-generation, environment-friendly engines**

1983~2000

1983
- **Doosan Heavy Industies launches engine business**

1994
- Samsung Heavy Industirs (SHI) launches engine business

1999
- Doosan Heavy Industries (DHI) and SHI agree to establish a JV, **HSD Engine**

2000
- HSD Engine establishes R&D center
- Equity placement of W25bn (Daewoo Shipbuilding & Marine Engineering (DSME) participates)

2001~2007

2001
- Signs business transfer agreement with DHI, on internal combustion generators

2002
- **Receives WCP (world class product) award from the Ministry of Commerce, Industry & Energy for its large diesel engines**

2005
- Changes company name to Doosan Engine Co., Ltd

2006
- Establishes DMI in China, and builds plants

2007
- **Receives US$1bn Export Tower Award**

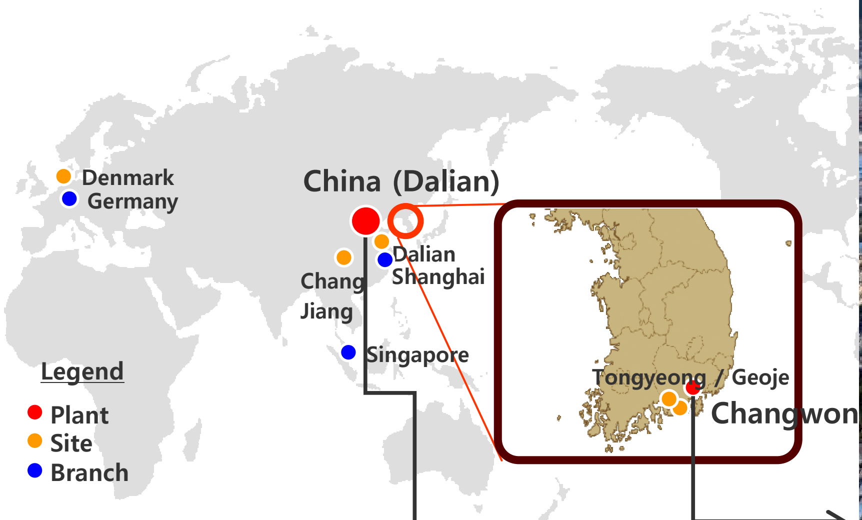
2008~

2008
- Constructs assembly line 4 and medium-speed engine production line (capacity : low-speed (12mn HP) and medium-speed (500 units p.a.)

2009
- Constructs a canning plant
- Raises ₩33bn of equity (offering, ESOP, and rights, public offering)

2010
- **Produces environment-friendly, low-vibration engines**
- **Achieves cumulative production of 70mn HP within shortest period**
- **IPO listing in KRX (2011. 1. 4)**

Appendix 3. Plants



Changwon Plant (Headquarter)

- Products : Diesel engines
- Size : 328,000㎡(99,500 pyeong)
- Overview

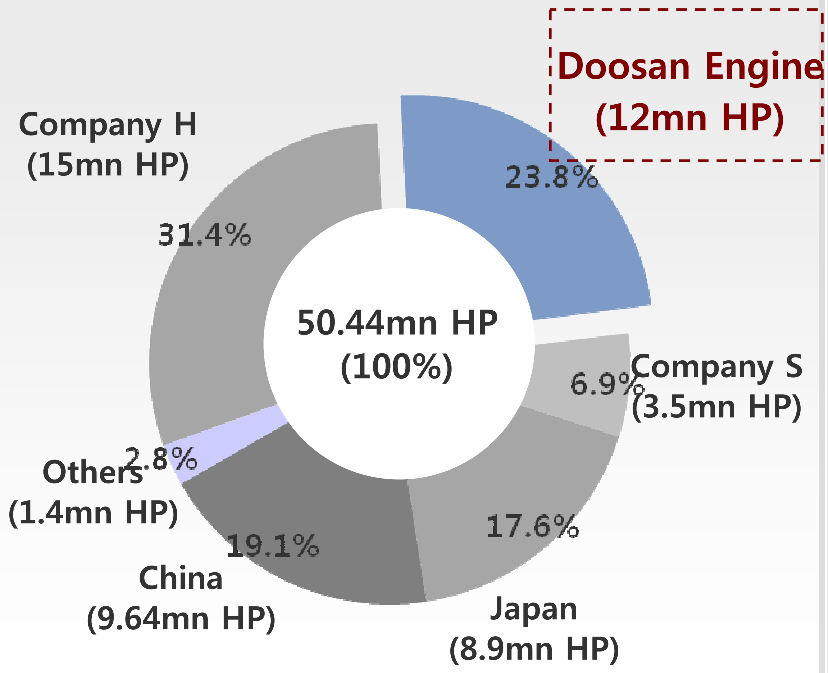
Classification	Size(㎡)	Production CAPA (per year)
Low-speed engine plants(4 units)	42,720(12,922 pyeong)	12,000,000 HP
Med-speed engine plant	17,010(5,145 pyeong)	500 units / 2,000,000 HP
Processing plant	27,100(8,197 pyeong)	
Canning plant	4,894(1,480 pyeong)	
Total Capcity		**14,000,000 HP**

Dalian, China plant

- Size : 57,904㎡ (17,500 pyeong)
- Product line-up : Diesel engine parts
- Production capacity : 250 blocks of engine canning parts

Second largest diesel engine production facility in the world

Large diesel engine production Capacity



Note : Estimates based on each company's 2010 annual report

Production facilities and infrastructure

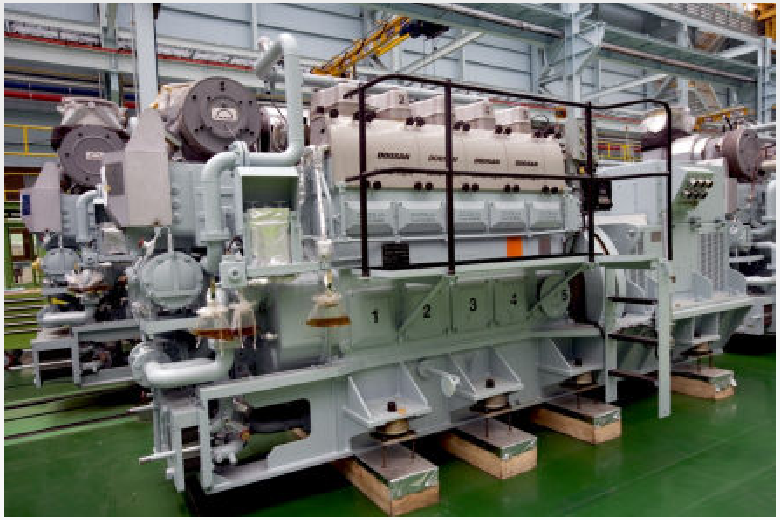
1. Large low-speed diesel engine plant
   - Production capacity : 12mn HP
   - Assembly and testing plants : 4 plants(3mn HP per plant)
   - Processing plant (7 Plano Millers, 8 Boring Machines)
   - Canning plant(250 blocks/year)
2. Medium-speed diesel engine plant
   - Production capacity : 500units
   - Assembly and testing plants : 1 each
   - Processing plant (5 Plano Millers, 4 Mill-Turns)
3. Top-of-line production infrastructure
   - High-quality supply chain (Quality/stable procurement and joint R&D)
   - Cutting-edge production system ("Flow production", "fool-proof" system)
   - Skilled design and production workforce

Low-speed diesel engines

- Main Business (2010 Sales : ₩1,535bn – 89% of total sales as of 2010)
- Uses : Large vessels (e.g. containerships, crude tankers, LNG carriers)
- Market position : No.2 globally, with 24% m/s
- Customers : SHI, DSME, Yangzijiang(China) Sinopacific(China), COSCO(China)

Appendix 5. Business area : Med-speed diesel engines

Medium-speed diesel engines



- New growth business (Sales : ₩134bn – 8% of total sales, + 64% YoY)
- Uses : Auxiliary engines in large ship engines
  Propulsion engines in small to mid-sized ships
- Customers : SHI, DSME, China, Brazil

Appendix 5. Business area : Power plants (Low-speed and Medium-speed)

Low-speed diesel power plant engines

No.1 builder of large diesel power plant engines

- Uses low-speed diesel engines (designed for large ships)
- Supply electricity in 10 countries currently
- Small/mid-size capacity power plants installed in small countries, developing countries, and islands (Namjeju Island, Papua New Guinea, India, Greece, etc.)
- Technology alliance with MAN of

Med-speed diesel power plants

No.1 supplier of emergency generators for nuclear power plants

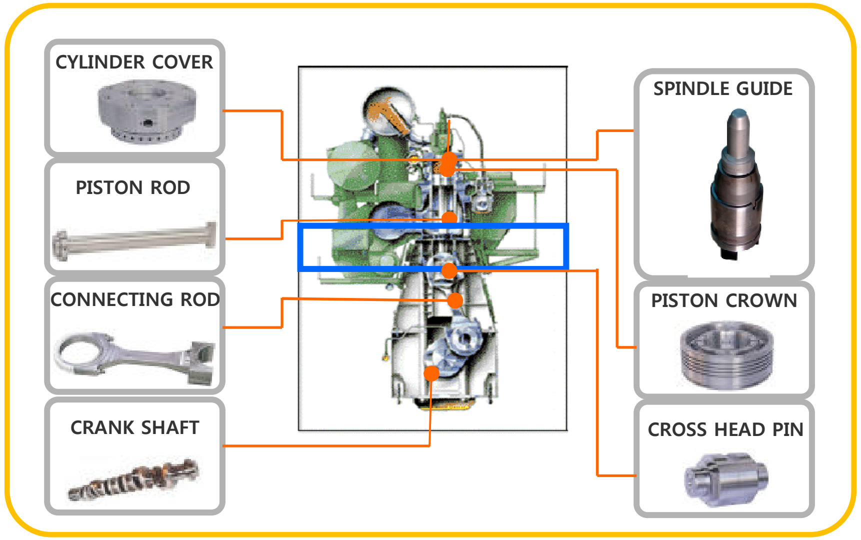
- Medium-speed diesel engines for power plants
- Exclusive supplier of emergency generators for nuclear power plants in Korea; Orders to grow from rise in nuclear power plant exports
- Medium-speed DPP : Small-capacity power plants for islands and other remote areas (Philippines, Fujairah, Bangladesh)
- Technology alliance with Daihatsu(2010) to help increase overseas orders for medium-speed DPP

Emergency power generator

Med-speed DPP

※ DPP (Diesel Power Plant) : Power plant with small capacity that is used in a place where construction is difficult (e.g. islands)

Main engine parts



- Uses : Ship engines, Retrofit
- Customers :
  - 12 agencies (10 domestic, 2 overseas)
  - Ship owners: A.P.Moller(Denmark), CSCL(China), NOVO Ship(Russia)
- Market size : ₩616bn(as of 2009)
- Business overview
  - Domestic production of engine parts
  - Expanding of parts sales network : 11 in 2010 to 20 in 2012
  - Developing paid A/S items

CYLINDER COVER

ROD(CON/PISTON)

ALPHA RETROFIT

CROSS HEAD PIN

Appendix 6. Impact from IMO's environment regulation

Emission Control – Cost

	Reduction capability				First cost in % of engine price	Running cost index Tier 1 = 100
	NOx	CO	HC	PM		
Primary methods						
Engine adjustments	10-15%	👎	👎	👎	0%/Small	102
SL & Alpha lube	-	-	👍	👍	0%/Small	101
Water emulsion	20-30%	-	-	👎	10-20% *)	101
SAM (Scavenge Air Moistening)	40-50%	👎	👎	👎	20-30% *)	101
Secondary methods						
SCR (Sel. Cat. Reduction)	80-98%	?	?	?	50-70%	110

*) Depending on installation

Appendix 7. Summary of annual financials

[Based on K-GAAP(Parent)]

Unit : Wbn

B/S

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Current assets	327	460	1,497	922	937
Non-current assets	607	1,397	1,642	1,543	1,007
Total assets	934	1,858	3,139	2,465	1,944
Current liabilities	550	773	2,238	1,993	1,211
Non-current liabilities	69	604	852	394	393
Total liabilities	619	1,377	3,090	2,387	1,604
Paid-in capital	30	30	30	63	70
Capital surplus	0	0	0	243	367
Accumulated other comprehensive income	147	211	293	298	262
Retained earnings	138	240	-274	-524	-359
Total equities	315	480	49	78	339

P/L

	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
Sales	1,017	1,222	1,735	1,773	1,730
COGS	106	211	260	176	285
SG&A	37	46	67	60	54
OP	69	165	193	117	230
(Margin %)	6.8%	13.5%	11.1%	6.6%	13.3%
Non-op profit	47	158	366	433	266
Non-op expense	39	165	1,142	798	259
Pretax profit	77	158	-583	-249	237
Income tax	24	55	-70	1	71
Net profit	52	103	-513	-250	166