Doosan Engine

Investor Relations

2014 Operating Results

February 2015
Doosan Engine

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This presentation contains preliminary figures which may be materially different from the final figures.

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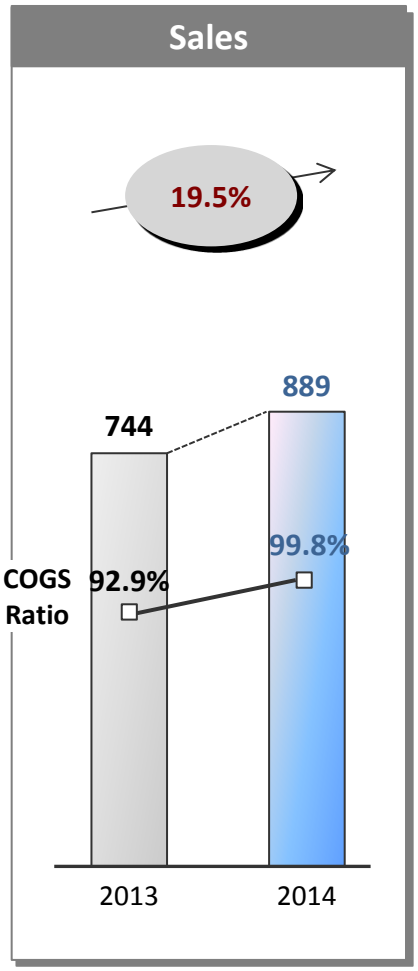
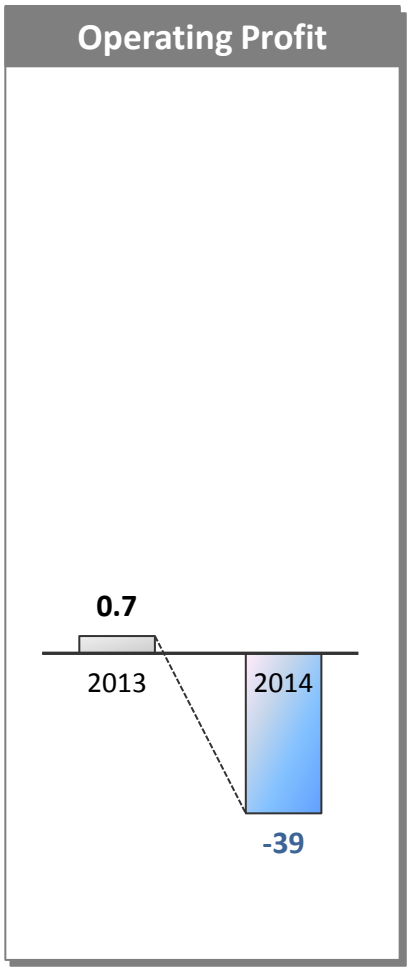
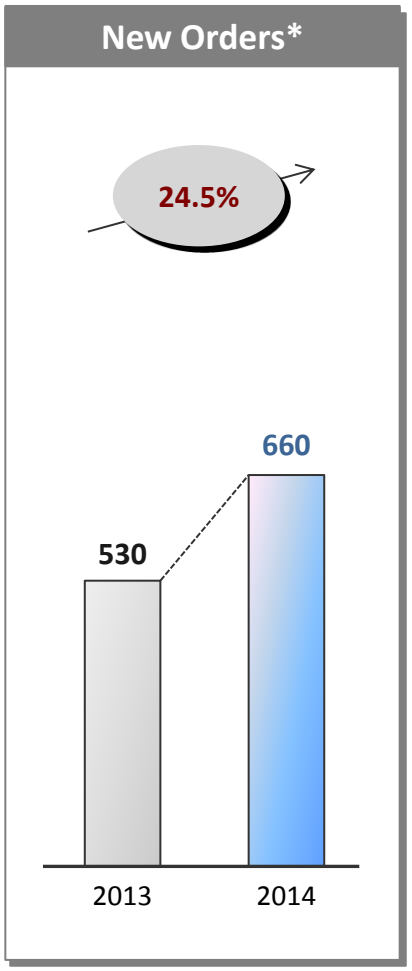
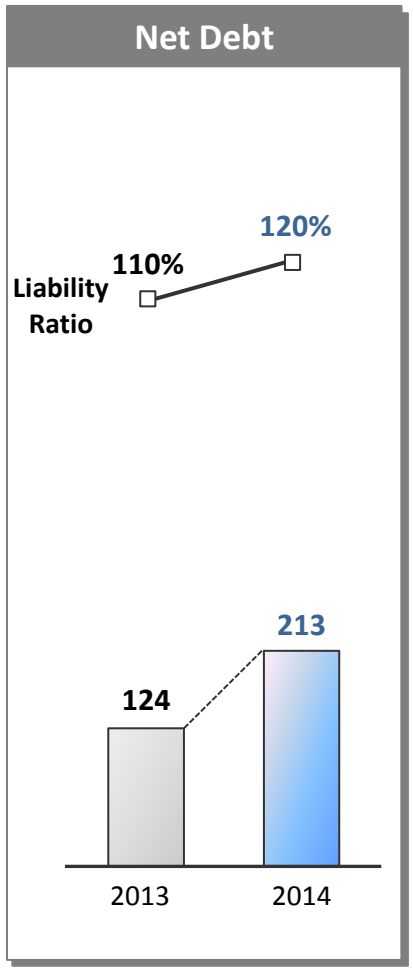
Operating Results Summary

(Wbn)









* New Orders
: Based on receiving advance receipts

Income Statement

✓ Sales W889bn, Operating Loss W39bn

(Wbn)

	2013	2014	YoY
Sales	744	889 ①	+19.5%
COGS ratio(%)	*92.9%*	*99.8%*	*+6.9%p*
Gross Profit	53	2	
SG&A	52	41	
Operating Profit	0.7	-39	TR
OP margin(%)	*0.1%*	*-4.5%* ②	*-4.6%p*
Other gain & loss	-4	-1	
Financial income & expense	-6	-4	
Gain/Loss on Equity method	4	-7 ③	
Pretax Profit	-5	-51	CR
Tax		-9	
Net Profit	-5	-42	CR

Key Features

① Sales +19.5% YoY

- Sales improved thanks to the increase of engine deliveries

② OP Margin -4.5%

- Deterioration of product mix
  (COGS ratio '13: 92.9% → '14 : 99.8%)

③ Gain/Loss on Equity method -W7bn

(Wbn)		2013	2014
Bobcat	DII	16	20
	DHEL	-12	-27
		4	-7

DOOSAN Doosan Engine

Balance Sheet

✓ Net debt W213bn, Net debt ratio 30%

(Wbn)

	'13.12	'14.12	+/-
Current Assets	489	437	-52
Non-current Assets	1,173	1,103	-70
Total Assets	1,662	1,540	-122
Current Liabilities	538	529	-9
Advance receipts	*326*	*286*	*-40*
Non-current Liabilities	334	310	-24
Total Liabilities	872	839	-33
Paid-in Capital	69.5	69.5	0
Capital Surplus	367	367	0
Retained Earnings	348	297	-51
Accumulated other comprehensive income	5	-33	-38
Total Equities	790	701	-89
Liability ratio	110%	120%	+10%p

Net Debt

	'13.12	'14.12	+/-
Gross Debt	312	305	-7
Cash & Cash Equivalents	188	92	-97
Net Debt	124	213	+89
Net Debt ratio	16%	30%	+14%p

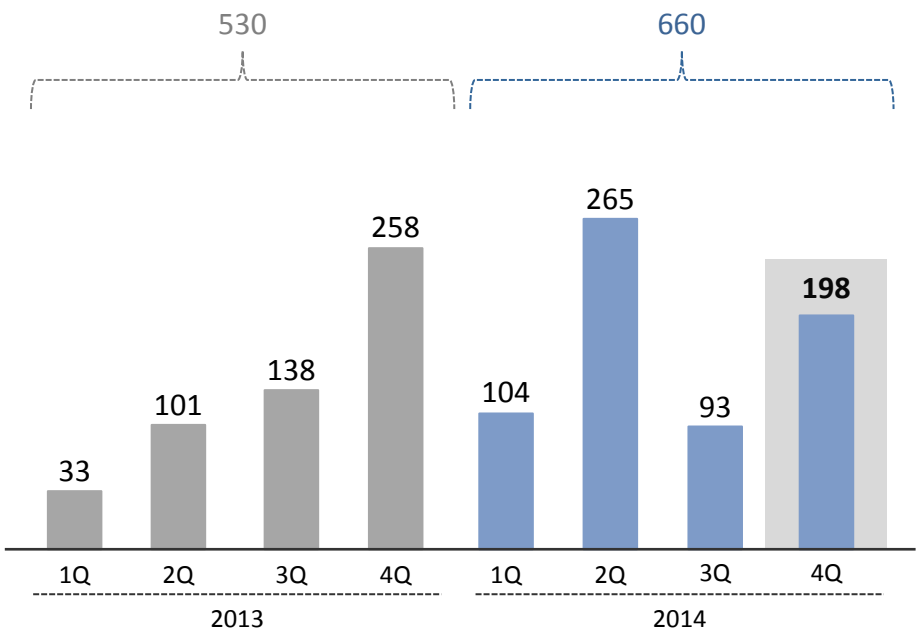
New Orders

✓ 2014 New Orders : W660bn

✓ New Orders received from SHI and DSME were increased, and the major customers' new order contribution ratio was recovered

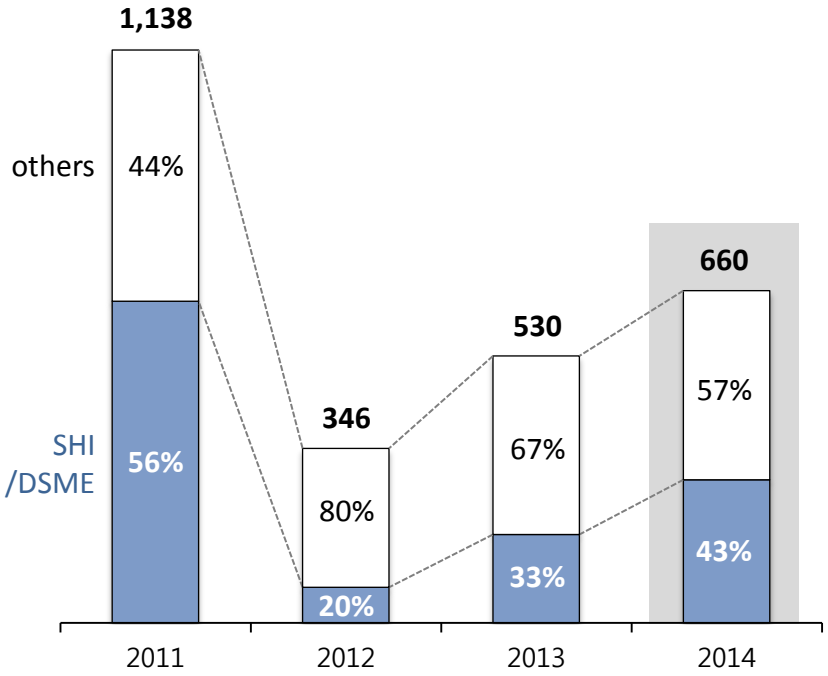
Quarterly New Orders Trend

(Wbn)



Annual New Orders Trend (By Customer)

(Wbn)



※ New orders based on receiving advance receipts

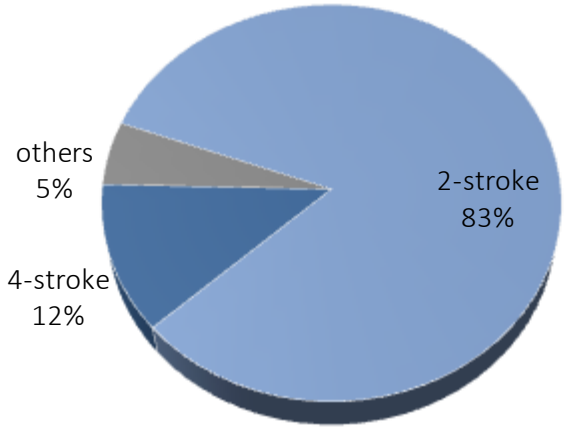
Order Backlog

✓ Order Backlog : W2.0tr, marine engine accounts for 95%

Order Backlog Breakdown

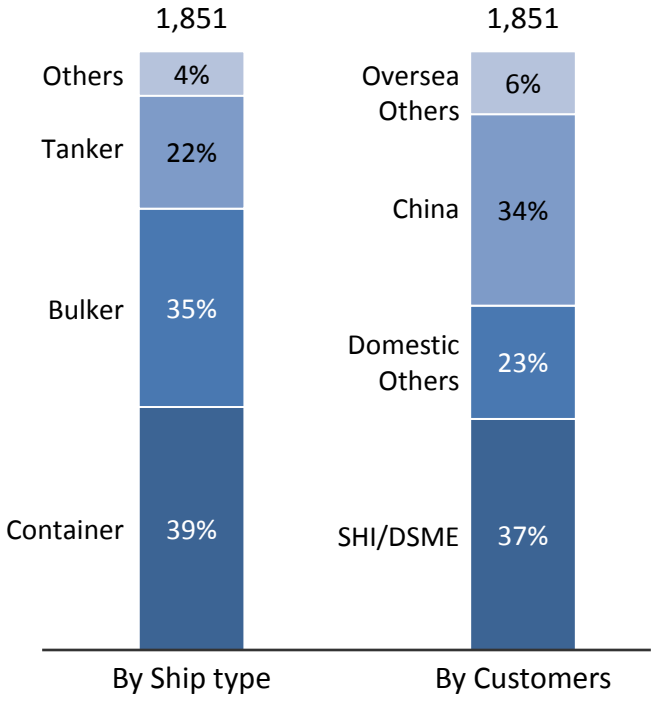
W1,952bn

(as of Dec. 2014)



Marine engine
(2 & 4-stroke)
: W1,851bn

(Wbn, %)



※ Backlog : Recognized upon contract sign basis

I. 2014 Operating Results

II. Investment Points

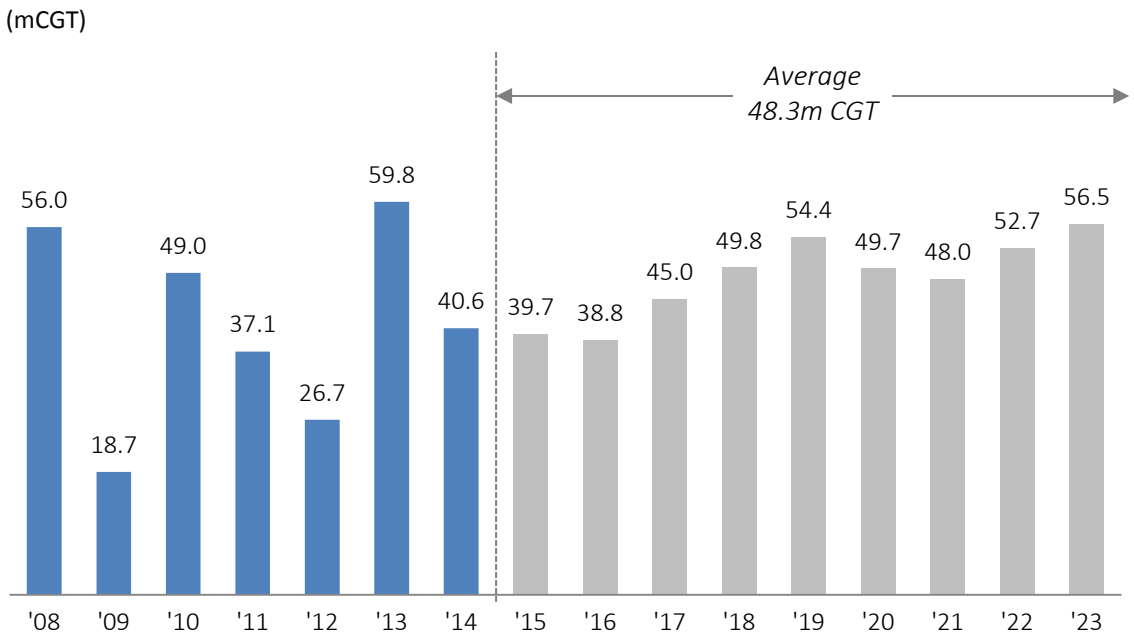
Appendix

Shipbuilding Market Outlook

✓ Shipbuilding market size in 2015 is estimated to be similar to the level of 2014

✓ Especially, orders for containership is expected to be double the level of 2014

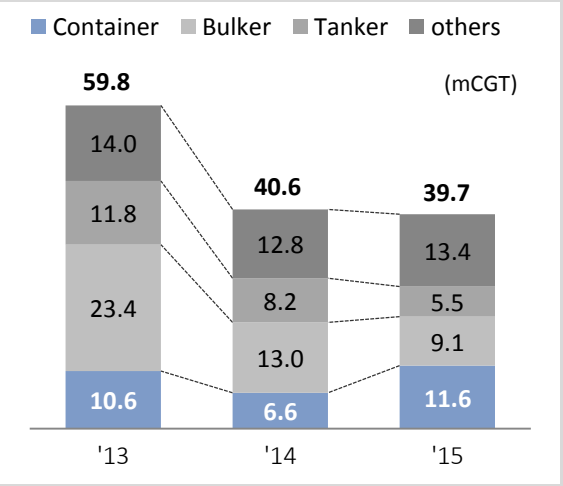
Global New Orders Outlook



※ Source : Clarkson Forecast Report (Sep. 2014)

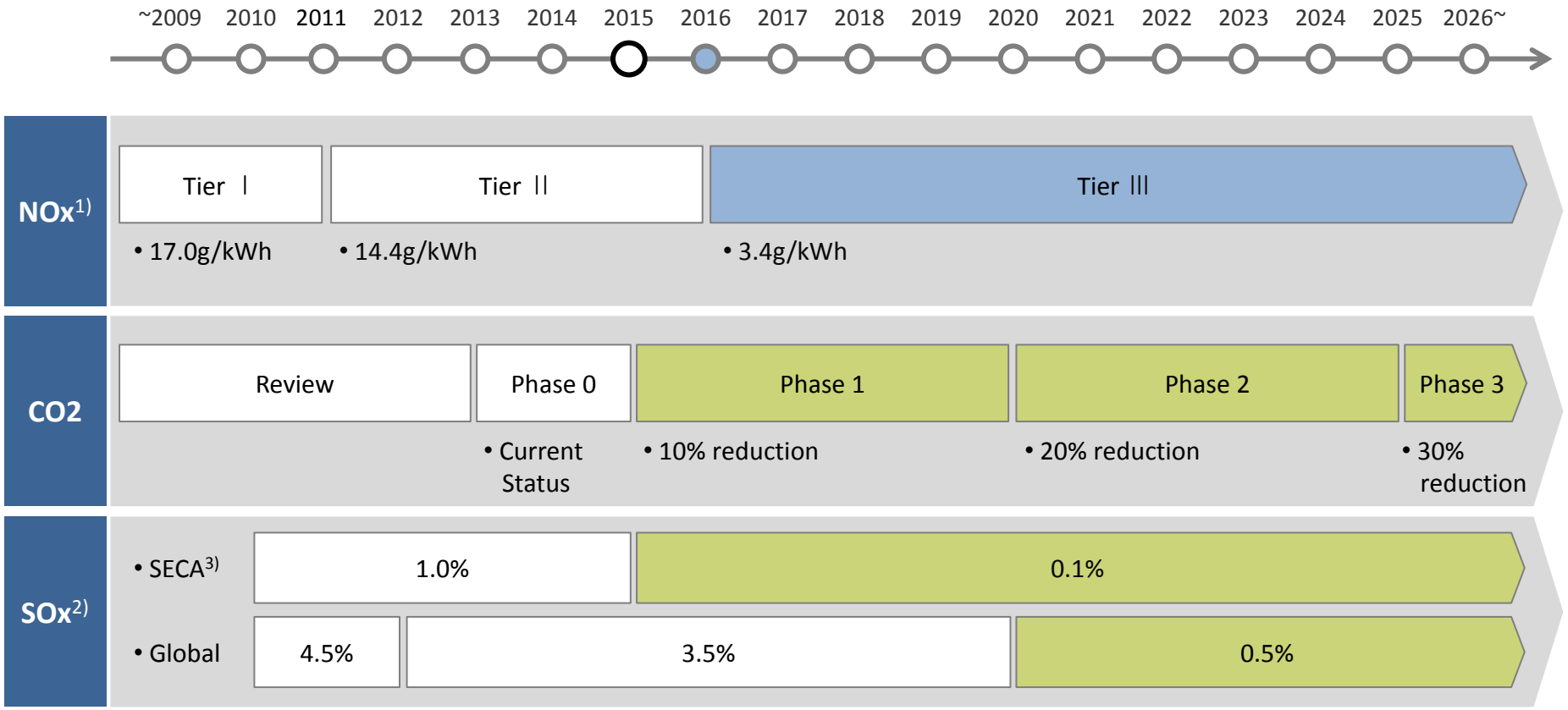
New orders Outlook by ship type

• Noticeable growth for container expected in 2015
(6.6mCGT in 2014 → 11.6mCGT in 2015)



IMO Environmental Regulation

IMO Regulation Milestone



1) NOx : Nitrogen Oxides
2) SOx : Sulphur Oxides
3) SECA(SOx Emission Control Area): Baltic Sea, North Sea, North American area including US Caribbean sea

IMO Regulation : NOx

NOx (Nitrogen Oxides)

Global as Tier II | after Jan. 2011		**ECA as Tier III** | after Jan. 2016	
Under	**14.4 g/kWh**	Under	**3.4 g/kWh**

ECA (Emission Control Areas) by MEPC[1)]

MEPC 66th decided to keep the implementation date of the NOx Tier Ⅲ requirements as of 1st January 2016.

• **NOx ECA** : North American area including US Caribbean sea

For any future new ECA, the Tier Ⅲ requirement will be made mandatory for ships constructed on or after the announcement of the establishment of the ECA, or any date decided by the parties proposing the ECA but not earlier than the announcement date.

1) MEPC : Marine Environment Protection Committee

✓ After the first order of SCR in Oct. 2014, inquiries for SCR orders are increasing

✓ Pricing for SCR will be around 15~20% of engine price

SCR (Selective Catalytic Reduction)

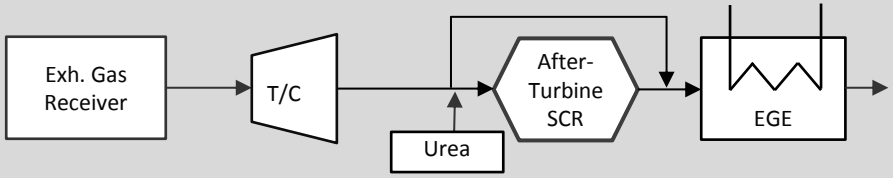
- NOx reduction method using catalyst and reactant(urea)
- High NOx reduction efficiency (≥80%)
- Consist of Reactor, Urea Dosing System, Control System

"Most effective and proven solution"

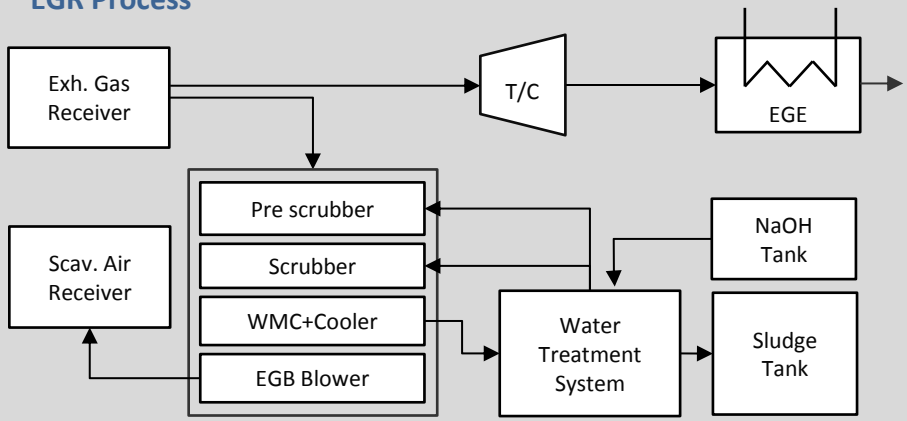
EGR (Exhaust Gas Recirculation)

- NOx reduction by decreasing O_2 concentration of scavenge air
- Engine integrated + additional equipment
- More complex design

* DelNOx Process

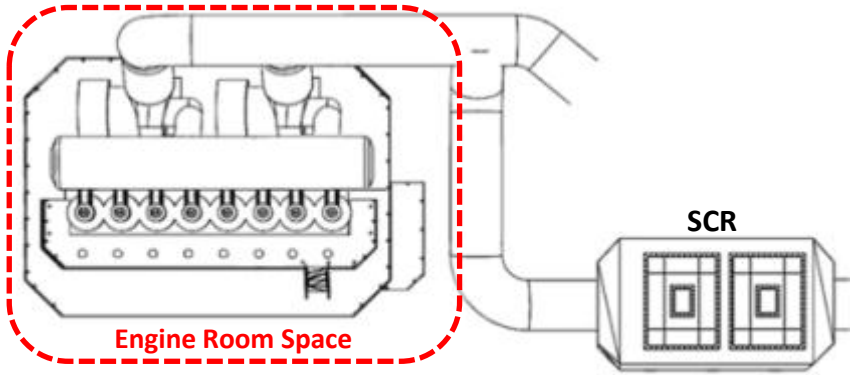


* EGR Process



After-turbine SCR vs. Pre-turbine SCR

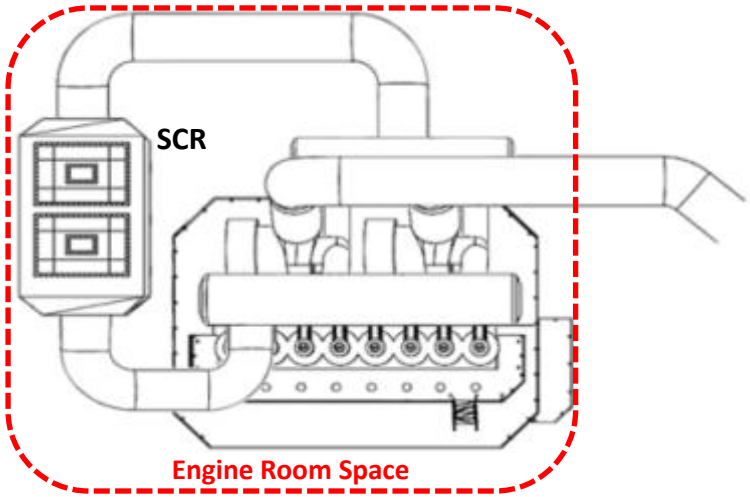
After-turbine SCR (LP)



- Located after Turbocharger
- Flexible arrangement in engine room and simple piping line
- Minimized modification of engine room design

" Best Solution for IMO Tier Ⅲ Compliance, Shipyard Design & Ship-owner Operation "

Pre-turbine SCR (HP)



- Located between Exhaust gas receiver and Turbocharger
- Limited arrangement in engine room and complex piping line
  - Must be arranged near the main engine
  - Influenced by number of turbochargers
- Influence on engine room design

Investment Point 2. More Opportunities in LNG Carrier Engine

✓ Gas-fuelled ship ratio is growing, and customers pay more attention to 2-stroke DF than 4-stroke DF engine

✓ It will contribute to sales growth and profitability of Doosan Engine

LNG-fuelled Engine

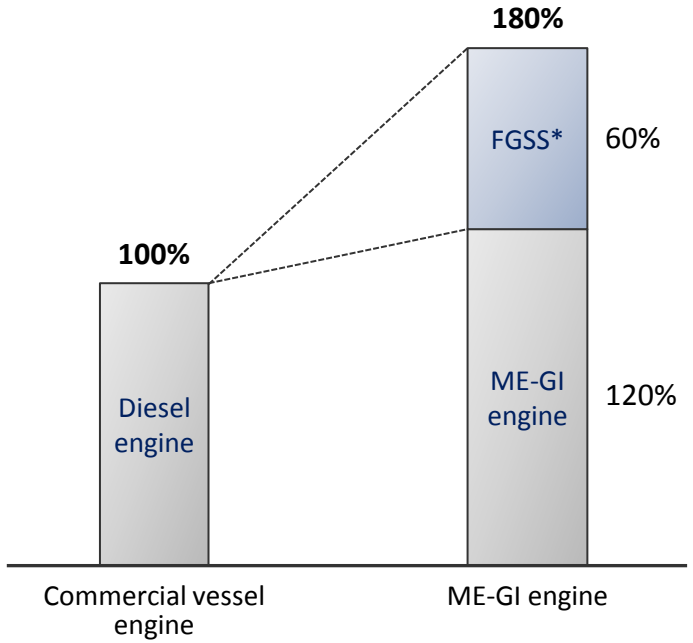
	4-stroke DF	*2-stroke DF*	
	DFDE [1]	**X-DF** [2]	**ME-GI** [3]
Main Engine	2 * 12V50DF 2 * 8L50DF	2 * 72DF	2 * 5G70ME-GI
Aux. Engine	N/A	4 * Gen-set	4 * Gen-set
Gas Pressure	6 Bar	16 Bar	300 Bar
Re-Liq. Plant	No	No	Yes
NOx Tier Ⅲ	Complies on Gas	Complies on Gas	Need SCR or EGR
Efficiency	●	● ● ●	● ● ●
CAPEX [4]	Same	Same	Same
OPEX	More	Less	Less
Experience	Sufficient	Not at all	Very Small

1) DFDE : Dual Fuel Diesel Electric (from Wartsila-Hyundai)
2) X-DF : X-type Dual Fuel (from Wartsila)
3) ME-GI : MAN Electric-driven Gas Injection (from MAN D&T)
4) CAPEX : depending on exact configuration

※ Source: Maran Gas Maritime Inc. (8th World Ocean Forum, Sep. 16~19, 2014)

Price Structure Comparison

(Diesel engine vs. ME-GI engine)



* FGSS : Fuel Gas Supply System(It will be outsource d to DSME)

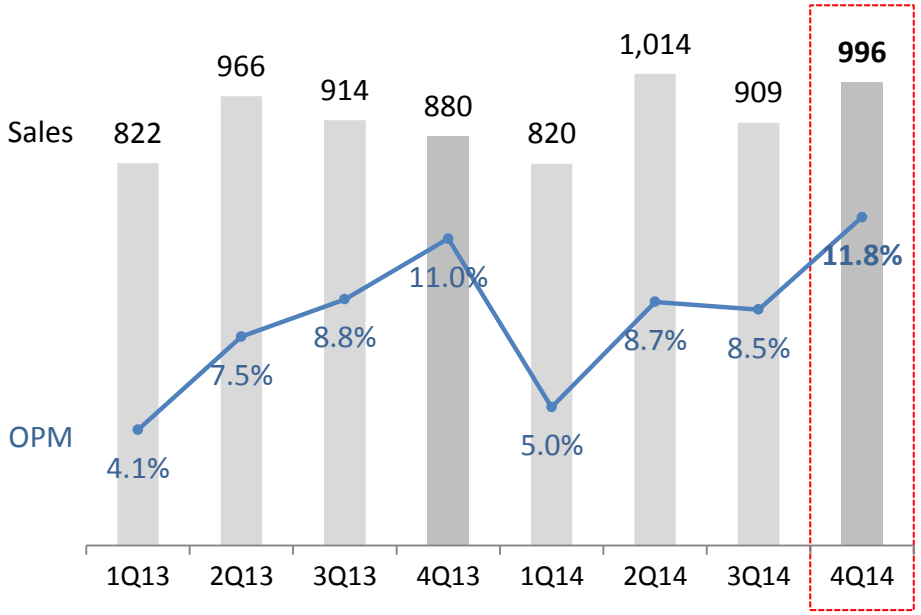
Investment Point 3. Improvement of Bobcat Earnings

✓ 4Q Sales of Bobcat: W996bn, OP margin: 11.8%

✓ Current Book value of Bobcat is W405bn

Bobcat Earnings Trend (Quarterly)

(Wbn)



Book Value of Bobcat

(Wbn, %)

	Stake(%)	Book Value (as of Dec. 2014)
DII	11.6%	303
DHEL	21.7%	102
Bobcat	**15.5%**	**405**

※ Acquisition Cost : W738bn

Appendix

I. Company overview

II. History

III. Plants

IV. Manufacturing infrastructure

V. Business areas

VI. Doosan Group IR contact point

Appendix 1. Company Overview

Overview

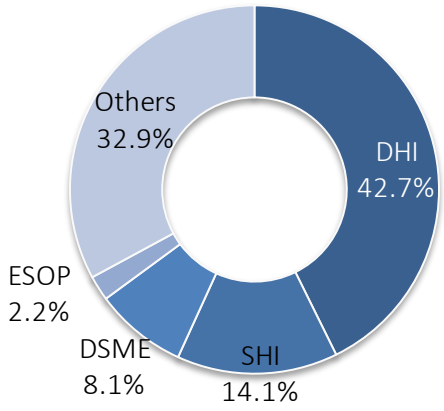
Company	Doosan Engine Co., Ltd.
Date of Foundation	Dec. 30, 1999
Address	Sinchon-dong 69-3, Seongsan-gu, Changwon-si, Gyeongnam
Business	Marine diesel engines / Diesel engines for power plants
Exports	Local/direct Exports(96%), Domestic(4%)
Capital	W69.5bn
No. of Employees	1,008 [As of Dec. 2014]
Subsidiary	Doosan Marine Industrial (DMI) Dalian Co., Ltd. (100% owned)

Business Areas

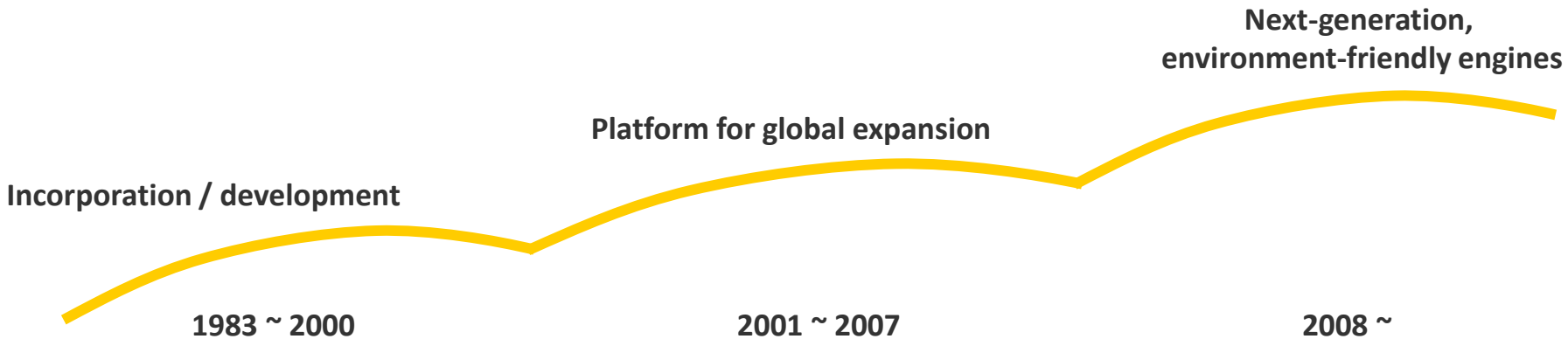
Business Areas	Sales (2014)	% of sales
2-stroke engine	W671bn	75%
4-stroke engine	W157bn	18%
Diesel power plant	W21bn	2%
Engine parts & C/S	W40bn	5%
Total	W889bn	100%

Shareholders

[As of 2014.12.31]



Appendix 2. History



1983
- Doosan Heavy Industries launches engine business

1994
- Samsung Heavy Industries(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
- Capital Increase of W25bn (DSME participated)

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
- Constructs additional assembly line and 4-stroke engine production line
  - Capacity : 2-stroke(12mn HP) and 4-stroke (500 units p.a.)

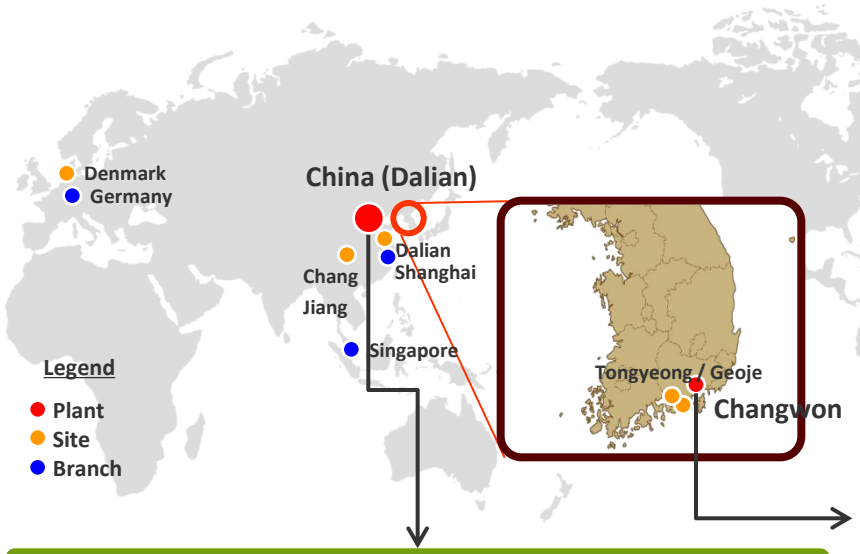
2009
- Capital Increase of W33bn (Placement on shareholders, ESOP)

2011
- IPO listing in KRX (2011. 1. 4)

2012
- Achieves cumulative production of 80mn HP within shortest period(Jan. 2012)

2013
- Commercialization of ME-GI engine (Mar. 2013)

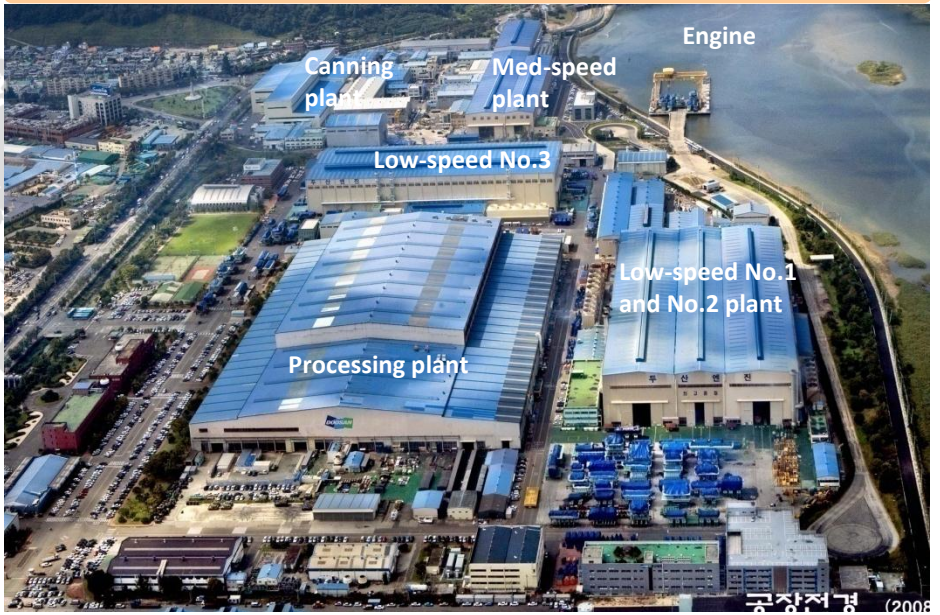
Appendix 3. Plants



Dalian, China plant

- Size : 57,904㎡
- Product line-up : Diesel engine parts
- Production capacity : 250 blocks of engine canning parts

Changwon Plant (Headquarter)

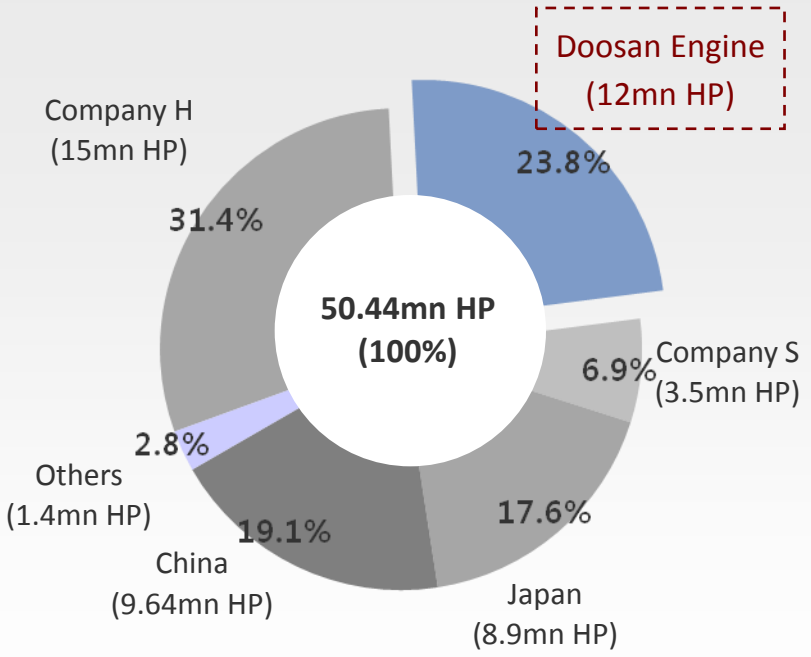


- Products : Diesel engines
- Size : 328,000㎡
- Overview

Classification	Size(㎡)	Production CAPA (per year)
2-stroke engine plants	42,720	12,000,000 HP
4-stroke engine plant	17,010	2,000,000 HP
Processing plant	27,100	
Canning plant	4,894	
Total Capacity		**14,000,000 HP**

Second largest diesel engine production facility in the world

2-stroke diesel engine production Capacity



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

Production facilities and infrastructure

1. 2-stroke diesel engine plant

- Production capacity : 12mn HP
  (Operating in 6mn HP)
- Assembly and testing plants
- Processing plant (7 Plano Millers, 8 Boring)
- Canning plant(250 blocks/year)

2. 4-stroke diesel engine plant

- Production capacity : 500units
- Assembly and testing plants
- 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

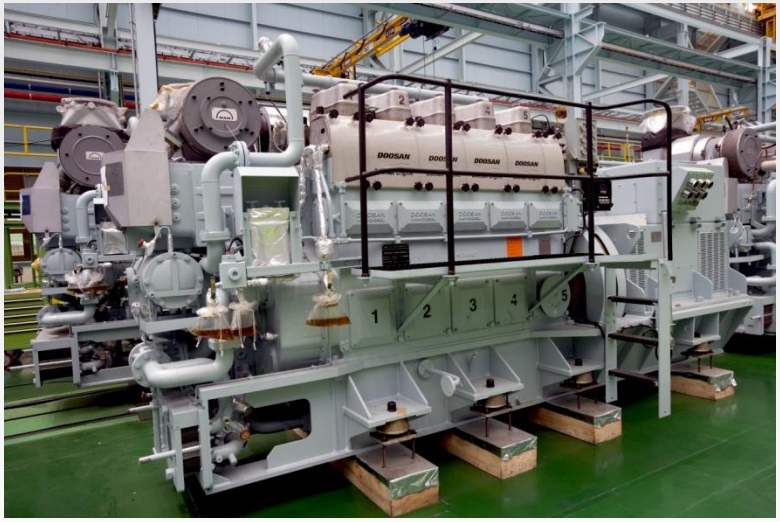
Appendix 5. Business Area : 2-stroke diesel engine

2-stroke diesel engine

- Main Business (72% of total sales in 2013)
- Uses : Large vessels
  (e.g. Container, Tanker, Bulker, LNG carriers)
- Market position : No.2 globally, with 24% m/s
- Customers : SHI, DSME, Yangzijiang(China)
  Sinopacific(China), COSCO(China)

Appendix 5. Business Area : 4-stroke diesel engine

4-stroke diesel engine



- New growth business (18% of total sales in 2013)
- 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 (2 & 4-stroke)

Diesel Power Plant

4-stroke Diesel Power Plant

- 4-stroke diesel power plant engine
- Generates 1~25MW power suited for small capacity power plant
- Installed in small islands or remote areas and used for emergency purpose

(Philippines, Fujairah, Bangladesh)

EDG* for Nuclear Power Plants

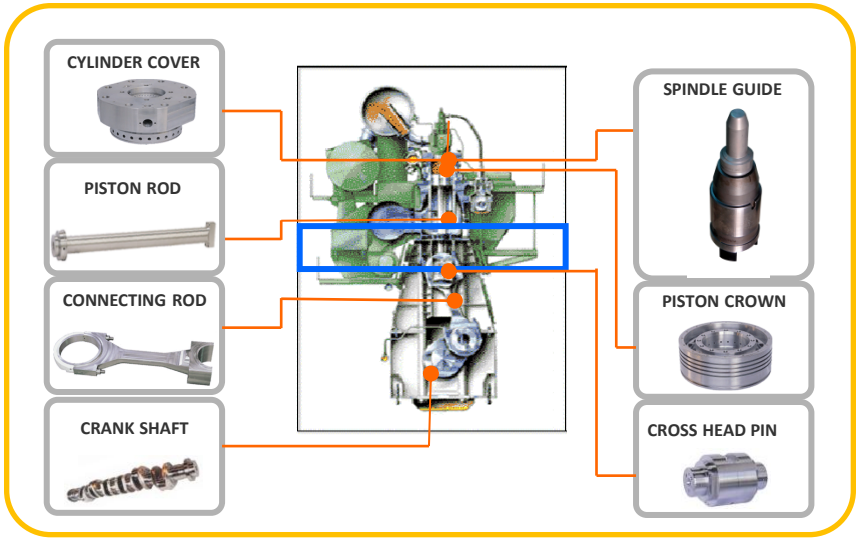
No.1 supplier of emergency generators for nuclear power plants

- Exclusive supplier of emergency generators for nuclear power plants in Korea; Orders to grow from rise in nuclear power plant exports
- Generates power capacity of 3,500 ~ 9,000KW
- Supplied to the major nuclear power plants in Korea

* EDG (Emergency Diesel Generator) : EDG is a diesel-powered emergency backup systems for nuclear power plants

Appendix 5. Business Area : Parts & C/S

Main engine parts



- Uses : Ship engines, Retrofit
- Customers :
  - 14 agencies (12 domestic, 2 overseas)
  - Ship owners: A.P.Moller(Denmark), CSCL(China), NOVO Ship(Russia)
- Market size : W600bn(as of 2012)
- Business overview
  - Domestic production of engine parts
  - Developing paid A/S items

CYLINDER COVER

ROD(CON/PISTON)

ALPHA RETROFIT

CROSS HEAD PIN

Appendix 6. Doosan Group IR contact Point

For further information about our company or affiliates, please contact us at the following.

Company	Name	Phone	E-mail
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Doosan Infracore	Ms. OH Hyunji	82-2-3398-8416	hyunji.oh@doosan.com
Doosan E&C	Ms. LEE Hayoung	82-2-510-3896	hayoung.lee@doosan.com