WELCOME TO WÄRTSILÄ CHINA

INVESTORS VISIT IN SHANGHAI (SEP. 23 2015)

James Han
President of Wärtsilä China
Wärtsilä China Today

- 20+ years history in China
- Well positioned for SP and Service business
- One of Wärtsilä biggest market with annual revenues of ~10% of group sales

- Broad manufacturing footprint through JVs and fully owned companies.
- In the marine market, certain leading Chinese ship owners and shipyards are not only Wärtsilä customers, but also JV partners.
Major Milestone of Wärtsilä in China

1978
Signing of licensee agreement between Sulzer with CSSC

1982
Developing agent relationship with Kemklen Industrial Suppliers Ltd., Hong Kong

1986
Establishing Wärtsilä Diesel (China) Ltd., Hong Kong as Joint Venture with Kemklen Hong Kong

1988
Wärtsilä Diesel (China) Ltd., Hong Kong became a wholly owned company under Wärtsilä Diesel Finland Oy, Helsinki

1991
Establishing Shanghai Representative Office, Beijing Representative Office, Wärtsilä Diesel Panyu Service Station (Joint Venture)

1994
1995
1996
1997
1998
1999
2002
2004

First Investment in Taicang Electric Power Co., Ltd. (partial ownership)
Setting up Hong Kong Service Station
Merging with New Sulzer Diesel Hong Kong Ltd.
Establishing Shanghai Representative Office
Upgrading Shanghai Representative Office to Wärtsilä NSD Engine (Shanghai) Ltd. with business scope of trading and servicing
Integration of John Crane-Lips operation in Shanghai following global acquisition in April 2002
Wärtsilä-CME Zhenjiang Propeller Co. Ltd. founded in June. In the JV Wärtsilä has 55% and CME has 45% ownership

Investors visit Sep. 23 2015
Major Milestone of Wärtsilä in China

2005
Wärtsilä acquired Deutz medium and high speed engine marine service business and started to handle the business from April.

2006
Inauguration of Wärtsilä Qiyao Diesel Co., Ltd (Shanghai) (a 50/50 JV with CSIC SMDERI to manufacture marine auxiliary engines) in June 2006

2007
Inauguration of Wärtsilä Propulsion (Wuxi) Co. Ltd. (wholly owned) in June

2008
The top management of Wärtsilä Ship Power moved to China

2009
Inauguration of Qingdao Qiyao Wärtsilä MHI Linshan Marine Diesel Co Ltd (QMD) in April.

(CSIC 50%, Wärtsilä 27% and Mitsubishi 23%)
Inauguration of Wärtsilä Ship Design (Shanghai) Co. in June Zhoushan Services Station was setup in Sept.

2010
Wärtsilä China Engineering Center was setup

2011
Inauguration of CPP production at Wärtsilä-CME Zhenjiang Propeller Co., Ltd. In June

2012
Wärtsilä acquired the Hamworthy plc group.

JV Contract Signed to establish Wärtsilä Yuchai Engine Company Ltd.

2014
Wärtsilä announced new joint venture with CSSC for manufacturing medium speed diesel engines in July

Wärtsilä and CSSC to join forces in 2-stroke engine joint venture to take over Wärtsilä's 2-stroke engine business

Wärtsilä divested its shares in QMD 2-stroke joint venture in July

Inauguration of Wärtsilä Yuchai Engine Company Ltd. In September
Wärtsilä Footprints in China

- 5 JVs, 2 fully-owned factories
- 9 service centers
- 1500+ employees

- Wärtsilä Ventures
- Joint Ventures

Wärtsilä (Suzhou) Ltd.
Formal name is Hamworthy (Suzhou) Ltd.
Sewage Water Treatment Plant, Inert Gas System, Control Panel

Wärtsilä Yuchai Engine Co., Ltd
Wärtsilä 20, Wärtsilä 26 and Wärtsilä 32 series of medium speed engines

Investors visit Sep. 23 2015
Chinese Economy and Market Update

- **China economy further slowed down** with headwinds both externally and internally, despite 7% GDP expansion in H1.

- **Export fell by 6.1% yoy in Aug and imports shrank by 13.6%**. However exports to US and ASEAN increased by 6.1% and 5.6% respectively.

- **PMI slipped to 49.7 in Aug from 50 for July, the lowest in 36 months since 8/2012**. However, sub PMI for high tech manufacturing (52.2) and consumption sector (54.6) remain in expansion.

- **Medium and long term still look positive**, as service sector now accounts for 50% of GDP and private consumption contributes more than 60% of GDP growth. Slowdown is necessary to make structural transition from export/investment to more sustainable consumption/service mode. Government has sufficient tools to stimulate economy to avoid hard landing.

- **China shipbuilding industry facing huge challenges**. First 8 months in 2015, new contract order dropped 68.3% yoy to 15 million DWT and order book decreased 12.1% to 135 million DWT. However total completion increased by 14.6% to 25.31 million DWT. In terms of order book, China still holds the largest market share (39.7 million CGT), followed by Korea (31.8 million CGT) and Japan (19.77 million CGT). Main challenges from weak demand, overcapacity, difficult for private yards to get financing, low oil price, etc.

- **Power Market has great potential for gas and renewable energy**. China’s installed gas-fired power capacity reached 55.67 GW in 2014, accounting for 4.1% of total power mix, increased from 3.4% in 2013. Gas consumption in H1 increased bit slow by 3.3%, but the continued decline of imported gas price could boost consumption. 13th five year plan will focus on further expansion of renewable energy. By 2020, wind power would be tripled from current 75 GW to 200 GW and solar would jump from 15 to 100 GW.
Growth opportunities in China

**MOVE TO A SUSTAINABLE ECONOMIC GROWTH PATTERN**
- Transform from Invest/export focused to domestic consumption
- Shift to a sustainable, quality & efficient growth (6-7% GDP growth)
- Deepen economic and political reforms

**URBANIZATION & SURGING OF MIDDLE CLASS**
- ~ 70% of population will live in the cities by 2035
- ~ 200 cities > 1 million habitants
- 700 m middle class by 2020 and 1.4 b by 2030

**FOCUS ON GREEN ECONOMY**
- Shift to renewable and clean energy
- Increase energy efficiency and reduce pollution
- Invest > 8 trillion RMB (1.28 trillion USD) in green economy over the 12th Five-Year Plan Period (2011-15).

**DRIVE FOR INNOVATION & HIGH END MANUFACTURING**
- Move up the labor value chain
- Heavy investment in R&D and focus on domestic brand creation
- From “made in China” to “innovated in China”
The most important market for Marine Solutions

WORLD LEADING POSITION

• No.1 trading nation with biggest shipping fleets

• Largest shipbuilding country (37% of world order book by Jan-Aug 2015)

POSITIVE DEVELOPMENTS TO MEET CHALLENGES

• Shift from Merchant to offshore and special, from standard low value to complex high value

• Increasing focus on fuel efficiency and environmental performance

• Strong demand from domestic ship-owners from offshore, special, and LNG

GOVERNMENT POLICY SUPPORTING MARINE INDUSTRY

• Drive technology innovation

• Accelerate industry restructure to reduce the overcapacity

• Develop “Green Ships” (high efficiency with low emission and fuel consumption.

• Push for 80% local content for marine equipment by 2015
Power market opportunities for Energy Solutions

**WORLD LEADING POSITION**

- Largest power production & consumption country
- Overtook US in 2009 as the largest investor in clean tech industries
- Leading position in renewable energy (wind and solar) creates potential for smart power generation

**NATIONAL POLICY PUSH FOR CLEAN ENERGY**

- Develop >1,000 NGDE projects with 50 GW new capacity by 2020
- Increase Gas-fired from 3.9% to 8.3%
- Construct a strong and smart national grid

**STRONG GROWTH FROM GAS-FIRED POWER PLANT**

- Current installed gas ~36 GW, will reach ~150 GW by 2020
- Gas projects are also driven by provincial, local level and big SOEs
- 1/3 of power in Beijing (38%) coming from gas-fired (3.5GW)
- Jiangsu Province installed 5.3 GW with 8 gas-fired GT and 10 CHP co-gen plants
We provide total and 24/7 services

- Engine Services
- Propulsion System
- Automation
- Boiler
- In-situ Machining
- Training
- Reconditioning

50 largest Repair Yards in China that dock foreign ships

Wärtsilä presence
Major Wärtsilä Services workshops in China

**Shanghai**
- Established: 1999
- Location: Tangzhen Shanghai
- Main activities:
  - Reconditioning
  - External Field Services
  - In-situ and Afloat repair
  - Automation
  - Commissioning and Start-ups

**Guangzhou**
- Established: 1994
- Location: Nansha, Guangzhou
- Field service covering southern China
- Specialized in servicing Woodward governors and ABB/Napier Turbo Chargers
- Workshop reconditioning of entire gensets

**Hong Kong**
- Established: 1991
- Located in Hong Kong United Dockyards (HUD)
- Supporting visiting vessels, Hong Kong ship owners and ship management companies
Service cooperation with Chinese shipyards

In order to serve customers better, Wärtsilä China entered a cooperation with major shipyards in China.

A team of Wärtsilä experts is permanently stationed there and jointly provide a full range of field services.
We provide market leading products
Wärtsilä Propulsion (Wuxi) Co., Ltd

Inauguration phase 2 November 2007
Employees: 161 (April 2013)
Wärtsilä CME Zhenjiang Propeller Co., Ltd

Founded in 2004 and new CPP factory inauguration in June 2011
Employees: 407 (April 2013)
Joint Venture (Wärtsilä 55%, CSSC¹ 45%)

Note: CSSC¹ = China State Shipbuilding Corporation
Wärtsilä Qiyao Diesel Company Ltd. (Shanghai)

Inaugurated in 2006
Employees: 141 (April 2013)
Joint Venture (Wärtsilä 50%, CSIC1 50%)

Note: CSIC1 = China Shipbuilding Industry Corporation
Delivery Centre- Environment & Safety Product / Suzhou

- Inauguration in 1998 (former Hamworthy Suzhou)
- Employee: 103 (April 2013)
- Products: sewage water treatment plants, inert gas systems, control panels
Wärtsilä Yuchai Engine Co., Ltd / Zhuhai

- Location: Zhuhai, Guangdong Province, China
- Products: Wärtsilä 20, Wärtsilä 26, Wärtsilä 32 series of engines and generating sets.
- Total annual capacity(engine): 400
- Total annual capacity(MW): 1,000
- Production area (square meters): 22,616
Launch key initiatives to support long term growth

Strengthen high level customer contacts and external relationships (government, JV partners, etc) to ensure business success.

Simplify operating model with entrepreneurial driven organization to be more agile and react faster

Create a strong China organization by introducing best practices, professionalism and high performance culture

Attract develop and retain the best talents to create highly motivated workforce
Development of partnership in China continues: CWEC, a new 4-stroke engine Joint Venture between CSSC and Wärtsilä

Joining the forces of two major players in marine business sector

- Largest shipbuilding group in China and in the world
- 10 shipyards covering over 25% of China shipbuilding order book

- Global leader in complete lifecycle power solutions for marine industry
- Market leader in 4s marine engines and gas, DF technologies and solutions, optimized for offshore, LNGC, C&F
WÄRTSILÄ MARINE SOLUTIONS

Hans Laheij, Area Sales Director, Marine Solution Sales, Middle East and Asia
Market environment
China, South Korea and Japan dominate in the shipbuilding market

Source: Clarksons
Contracting Activity Development – All vessels

August 2015 contracts: 51 vessels and 1.4 million CGT

Source: Clarksons
Intensifying competition in China

It is becoming increasingly difficult to operate as a private-owned shipyard in China in recent years due to growing competition especially from China’s state-owned shipyards, in addition to Japan and South Korea.

Source: Clarksons
2015 total contracting activity = 692 vessels and 19,0 Million CGT
Offshore is Highly Sensitive to Oil Price Development

Break-even oil price for offshore projects (fields not yet in production, Q1 2015)

EIA oil price forecast (North Sea Brent crude, USD/bbl)

EIA predicts the price of Brent crude to stay below 80 USD/bbl until 2021

Source: Clarksons, EIA (oil price development in constant USD values)
Examples of significant projects in China

GOTLAND ROPAX Ferry
Full scope on main equipment
Length 200m
LNG powered
speed 28.5 knots
1650 PAX
1750 Lane m.

Evergas 27’500cbm LEG Carrier
Full SCOPE on main equipment
Wärtsilä Marine Solutions
Wärtsilä Marine Solution’s Strategic Goal

Marine Solution’s strategic goal
To be recognized as the leading provider of innovative products and integrated solutions in the marine and offshore oil & gas industry.

LEADER IN

Efficiency
Gas and dual-fuel solutions
Environmental solutions

THROUGH OFFERING

- Lifecycle solutions for ship owners and operators
- Integrated solutions for the shipbuilding industry, owners and operators
- The most competitive products and delivery process for the marine industry
The most complete marine offering on earth
A Comprehensive Product Portfolio

Automation
Ballast water management
Compressors
Engines & generating sets
Exhaust gas cleaning

Gas systems
Gears
Inert gas
Oil separation
Power electric systems

Propulsors
Pumps & valves
Seals, bearings & stern tubes
Waste & fresh water management
Ship design services
Wärtsilä Marine Solutions has been growing fast in China. In order to further grow it is important to focus on key differentiators that will ensure Marine Solutions continued success in China.

Our Offering
- Optimized solutions with local capabilities in project engineering and project management
- Standardized products for larger volume markets with lean delivery process through local factories

People
- Entrepreneurial mindset. Make things happen.
- Empower a qualified local organization in order to capture and deliver customer satisfaction towards (Chinese) customers.

Customer communication
- Fast response during delivery process
- Fast engineering documentation
- Local commissioning support and local site supervision
- Easy to deal with
Wärtsilä Qiyao Diesel Company Ltd. (Shanghai)
CSIC (China Shipbuilding Industry Corporation): a state owned enterprise group and one of China’s largest shipbuilding and ship repairing groups in China.

CSIC has 3 listed companies, 28 non-listed companies and 28 R&D institutes in China, with a total of 150,000 personnel.

2014 CSIC sales revenue over USD 32 billion (USD30 billion in 2013).

SMDERI (Shanghai Marine Diesel Engine Research Institute): a subsidiary of CSIC with roughly 2000 employees, and is the only research institute on marine diesel engine in China.

SMDERI is specialized in marine diesel engine, power plant, etc., and engaged in R&D, manufacturing, technical service, and turnkey projects.

SMDERI’s main business activities include diesel engine, special engine, power system solutions, engine-room automation systems, thermal engineering, and energy services.
WQDC Milestones 2005-2015

- Letter of Intent: 3.2.2005
- Ground breaking: 23.9.2005
- Inauguration: 29.06.2006
- 100th Auxpac20: 4.12.2007
- Introduction of Wartsila20 Genset: 15.1.2010
- Auxpac 16 launch event: 2.12.2013
- Delivery 1st Auxpac 16: 30.3.2015
The scope of business is to produce, assemble and finish the AUXPAC generating sets and relevant parts and assemblies designed by Wärtsilä, and to sell & commission its own products in China.

Portfolio products:
- Wärtsilä Auxpac 20
- Wärtsilä Auxpac 26
- Wärtsilä 20 genset
- Wärtsilä Auxpac 16
- Wärtsilä 20 main engine
The Wärtsilä auxpac range is a pre-engineered generating set
- WQDC manufactures A16, A20 and A26

The Wärtsilä 20 “classic” genset is a custom designed generating set often used for special vessels and offshore

Wärtsilä 20 Main Engine application for customers located in China
Our WQDC assembly & testing factory designed and build according to Wärtsilä best practices
Engine assembly takes place by means of “Lean” production lines
WQDC has a high level of focus on EHS in all aspects of the factory design and operations
Transport of engines in the factory takes place with “air cushions” to minimize lifting for the engines
Total construction area: ~9800 m²
Workshop: ~8000 m²
Office: ~1800 m²
Total site area: ~31000 m²
WQDC genset applications

**Bulk carriers**
- Wartsila Auxpac 16
- Wartsila Auxpac 20
- Wartsila Auxpac 26

**Tankers**
- Wartsila Auxpac 16
- Wartsila Auxpac 20
- Wartsila Auxpac 26

**Other small & medium size Merchant vessels**
- Wartsila Auxpac 16
- Wartsila Auxpac 20
- Wartsila Auxpac 26

**Research vessels**
- Wartsila Auxpac 16
- Wartsila Auxpac 20
- Wartsila Auxpac 26
- Wartsila 20 genset
- Wartsila 20 main engine

**Offshore applications – PSV, Drilling barge**
- Wartsila 20 genset
Wärtsilä’s support throughout WQDC operations

Material Supply  Production  Finance  Human Resource  Project & Contract Management  Sales & Marketing

Wärtsilä Supply Management

Quality

MS 4 stroke JV Engineering Centre China

Marine Solutions Sales

Services

Human Resources
Wärtsilä’s support throughout WQDC operations

Wärtsilä Supply Management
Our entire supply base is managed by Wärtsilä. From supplier selection, making frame contracts, supplier quality, supplier development and sourcing of new suppliers.

Wärtsilä Quality & EHS Management
Wärtsilä work processes and way of working are fully implemented in WQDC. WQDC uses the QDMS system and participates in Wärtsilä programs such as LEAN, ZIP, safety reviews and other continuous improvement programs.

Wärtsilä Engineering
Engineering information for each order will be received from Wärtsilä engineering department. WQDC has on site Wärtsilä engineering support to facilitate trouble shooting and quick assistance.

Wärtsilä Service
Full support for the lifecycle and operation of the vessel including the warranty obligations will be taken care of by Wärtsilä’s global service network. Where ever, when ever!

WÄRTSILÄ DESIGN, BRAND & QUALITY
Manufactured by WQDC
The engine quality is largely defined by the quality of the components that are assembled together. The selection of the supplier is done by Wartsila global sourcing as well as the continuous development of these suppliers.

In WQDC our engines include approx 65% western brand parts
- Imported from Europe
- Western brands that have a factory in China
WQDC delivers engines worldwide depending upon customer needs

The majority of our products are delivered in China since most Merchant ships are manufactured in China

WQDC has 2 sales channels: our own WQDC Sales Team and Wärtsilä Marine Solutions Sales Team

- Customers inside China for only WQDC scope of supply
- Customers outside China or customers inside China with package sales

WQDC Sales Organization

Wärtsilä Marine Solutions Organization
WQDC organisation set-up

Managing Director
Assigned by Wärtsilä

Sales Department
Market development
Customer relationship
Commercial negotiations

Project management Department
TS & quotation management
Project management
Auxpac 16 product ownership

Material Supply Department
Operative Purchasing
Goods reception & warehousing
Logistics
Auxpac 16 sourcing

Production Department
Assembly
Testing
Commissioning

Financial Controller
Assigned by SMDERI

Finance Department
Business Control & reporting
Financial planning
Accounting & bookkeeping
Taxation

Quality & EHS Department
Quality Control & Assurance
Management systems
Classification
EHS

HR & Admin Department
HR
Admin
IM-IT
Management Systems
QUALITY, DELIVERY & COST - IN THAT ORDER!
Thank you for your attention!

Any questions or comments?
Rules for today’s factory tour

* No PPE’s are needed since factory activities are temporarily stopped
* Please walk through the middle of the factory
* We will first walk to the goods reception area so that can start our tour by follow the production process