

A detailed 3D cutaway illustration of a complex mechanical assembly, likely a turbine or engine component. The drawing shows various internal parts, including a central shaft with multiple blades or vanes, and surrounding housing structures. The illustration is rendered in a light blue and grey color scheme. The background features stylized blue clouds and a blue ink splatter effect. Two horizontal lines cross the image, one above and one below the main text.

# TONGYANG COMPANY PROFILE

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4. Rich References
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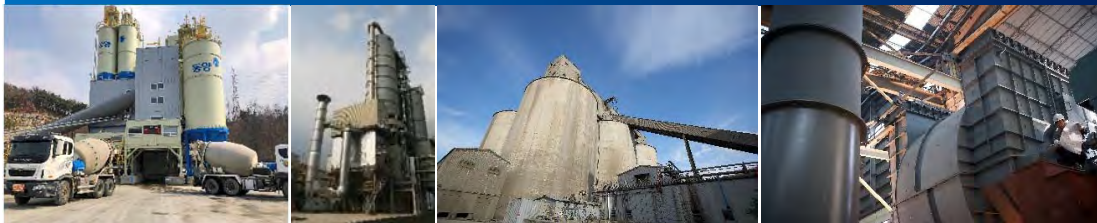


# WHO we are

## 1. Overview



TONGYANG

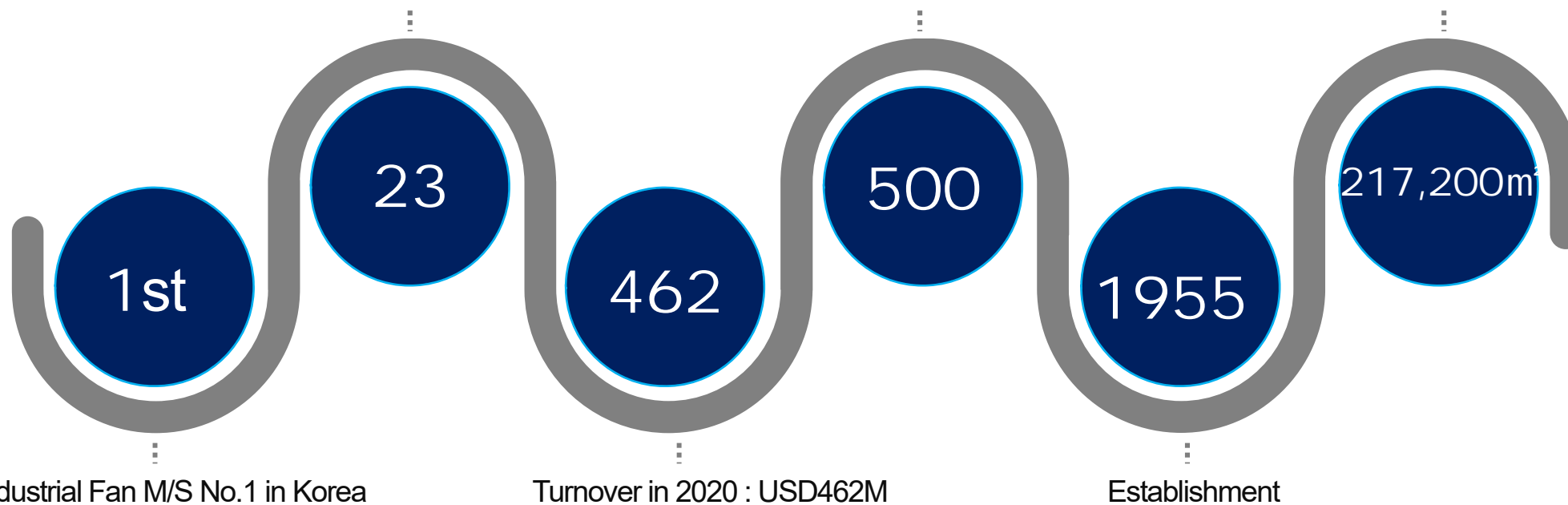


Since TONGYANG Inc. was established as the name of TONGYANG Cement Industrial Co., Ltd. in 1955, TONGYANG has expanded relative fields based on construction & manufacturing, and developed Ready-mixed concrete with Nationwide Network, Plant EPC and Civil engineering & Construction.

Ready-mixed concrete Factories

Total Employees

Largest Single Factory for Fan in the world



**Head Office**

24, Gukjegeumyung-ro 2-gil, Yeongdeungpo-gu, Seoul Korea

**Yesan Factory**

60, Hoeum Deokryeong-gil, Godeok-myeon, Yesan-gun, Chungcheongnam-do, Korea

**Line of Business**

Manufacture, Construction, Mining, Service Business, etc..

**Main License**

Civil engineering, industrial environmental facilities, landscape construction, indoor architecture, mechanical facility construction, electrical engineering, design construction

**Website**

[www.tongyanginc.co.kr](http://www.tongyanginc.co.kr)

# WHO we are

## 2. Financial Statement



### Executive Summary

- Report Number : 1792801-202204-002  
 - Rating Date : 2022/04/27

#### Company Profile

<b>Company Name</b>	TONGYANG INC.			<b>CLIP Rating</b>  <b>A+</b>
<b>Representative</b>	Chung, Jin Hak			
<b>Business Reg. No</b>	116-81-34352	<b>Corporate Reg. No.</b>	110111-0005333	
<b>Tel</b>	02-6150-7000	<b>Business Start Date</b>	1955/08/25	
<b>Address</b>	24, Gukjegeumyung-ro 2-gil, Yeongdeungpo-gu, Seoul			
<b>Company Type</b>	Corp.-Public Limited Company, High Potential Enterprise			<b>Cash Flow Rating</b>  <b>B</b>
<b>SIC</b>	C23320(Manufacture of articles of concrete, ready-mixed concrete and other cement and plaster products)			
<b>Line of Business</b>	Construction Materials, Construction, etc.			
<b>Fiscal Year</b>	2021/12/31	<b>Rating Date</b>	2022/04/27	
<b>Rating Validity Period</b>	2022/04/27 ~ 2023/04/26			

**Sales in 2021  
: USD440M**

# WHO we are

## 3. Organization – TONGYANG Inc.



TONGYANG

**i** 500 Employees



# WHO we are

## 3. Organization – EUGENE Group



TONGYANG

# EUGENE



### Construction Material / Distribution

Eugene Corp., **TONGYANG Inc.**, Eugene Home Day, HaniL Synthetic Fiber, EHC, Eugene AMC



### Finance

Eugene Investment & Securities, Investment & Futures, Eugene Asset Management, Eugene Savings Bank, Eugene Private Equity



### Logistics / IT

Eugene Logistics  
Eugene IT Services



### Leisure / Entertainment

Purunsol GC Pocheon, Purunsol GC Jangseong, Nanum Lotto, EugeneM



### Environment / Energy

Eugene Superfreeze, Eugene EnLab, and Eugene EnerFarm

#### Construction Material Business

Ready-mixed concrete, asphalt concrete, raw materials, and overseas business sites

#### Construction / Real Estate Development Business

Apartment, redevelopment, reconstruction, housing business including premium housing / town house, etc., and real estate management

#### Plant Business

Industrial ventilator, and environment plant

#### Textile Business

Acrylic yarn, Functional special yarn, Spanbond

#### Construction Material Distribution Business

Various construction materials including steel, plaster board, insulation, etc.

#### Home Improvement Business

Home interior remodeling, a professional shop in operation, repair and maintenance, DIY shop to open

#### Eugene Investment & Securities

Sales of financial products, including stock/bond/fund/ derivatives, etc., and corporate financial services, including initial public offering/ financial consultation, etc.

#### Eugene Asset Management

Stock/bond investment, and fund investment including NPL

#### Eugene Investment & Futures

Local and overseas futures and options brokerage service

#### Eugene Private Equity

Private Equity Fund (PEF) Operator

#### Eugene Savings Bank

Deposit/savings, credit loan, and secured loan service

#### Logistics Business

##### (Eugene Logistics)

Local and international logistics, as well as third-party logistics (3PL)

#### IT Business

##### (Eugene IT Services)

Development / provision of solutions, integration / operation of systems, operation of infrastructures and services

#### Golf Club Business

##### (Purunsol GC)

Purunsol GC Pocheon  
Purunsol GC Jangseong

#### Contents Business

##### (EugeneM)

Entertainment, advertising, and marketing, F&B

#### Cryogenic logistics complex

##### business (Eugene Superfreeze)

Operation of a superfreeze logistics center based on convergence energy

#### Business for energy recovery from

##### biomass and organic wastes

##### (Eugene EnLab)

Construction of biomass solid- refuse fuel power house, LN6 fuel cell, and organic waste biogas production facility

#### Energy Solution Business

##### (Eugene EnerFarm)

Provision of photovoltaics systems, ESS, BESS, etc

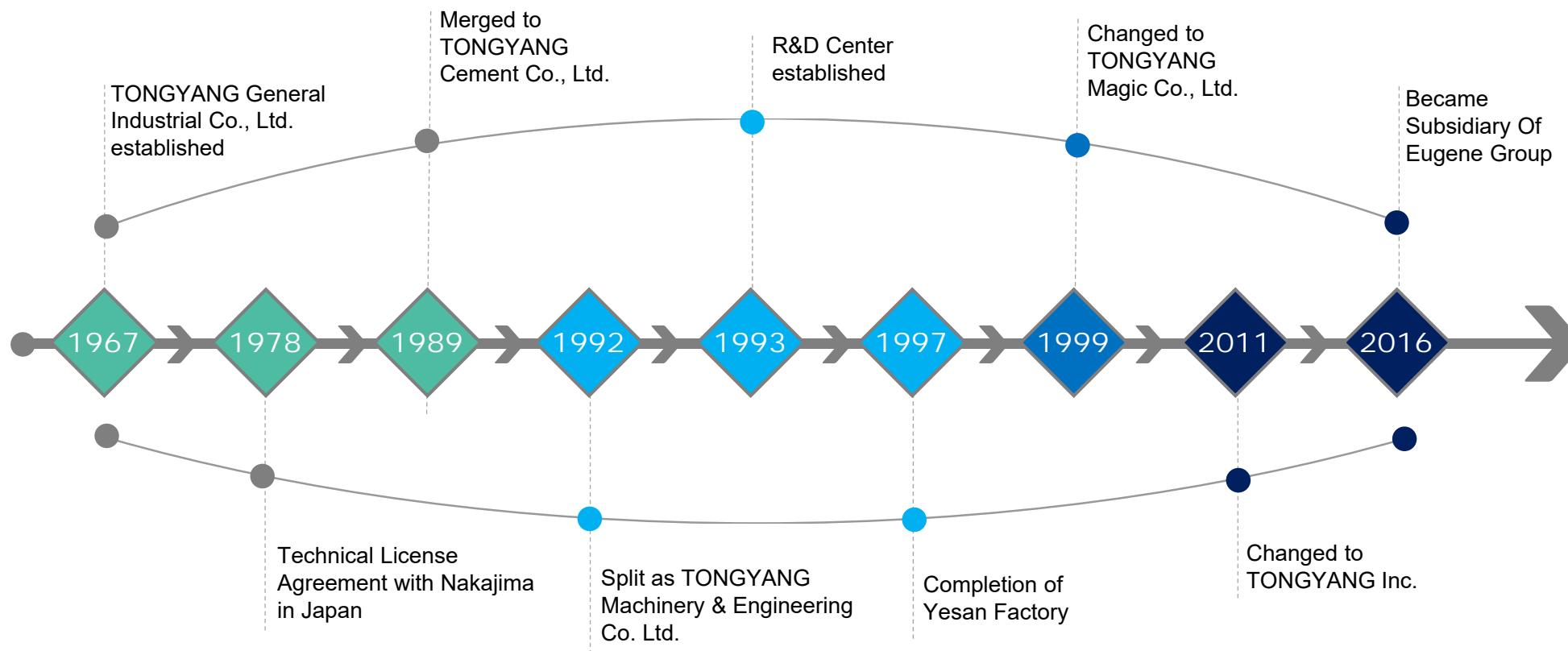
# WHO we are

## 4. Brief History / Fan & Blower

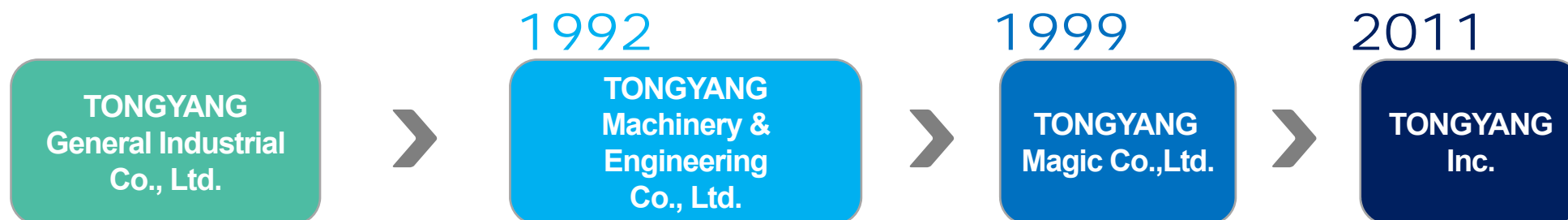


TONGYANG

### Brief History



### Brand Name

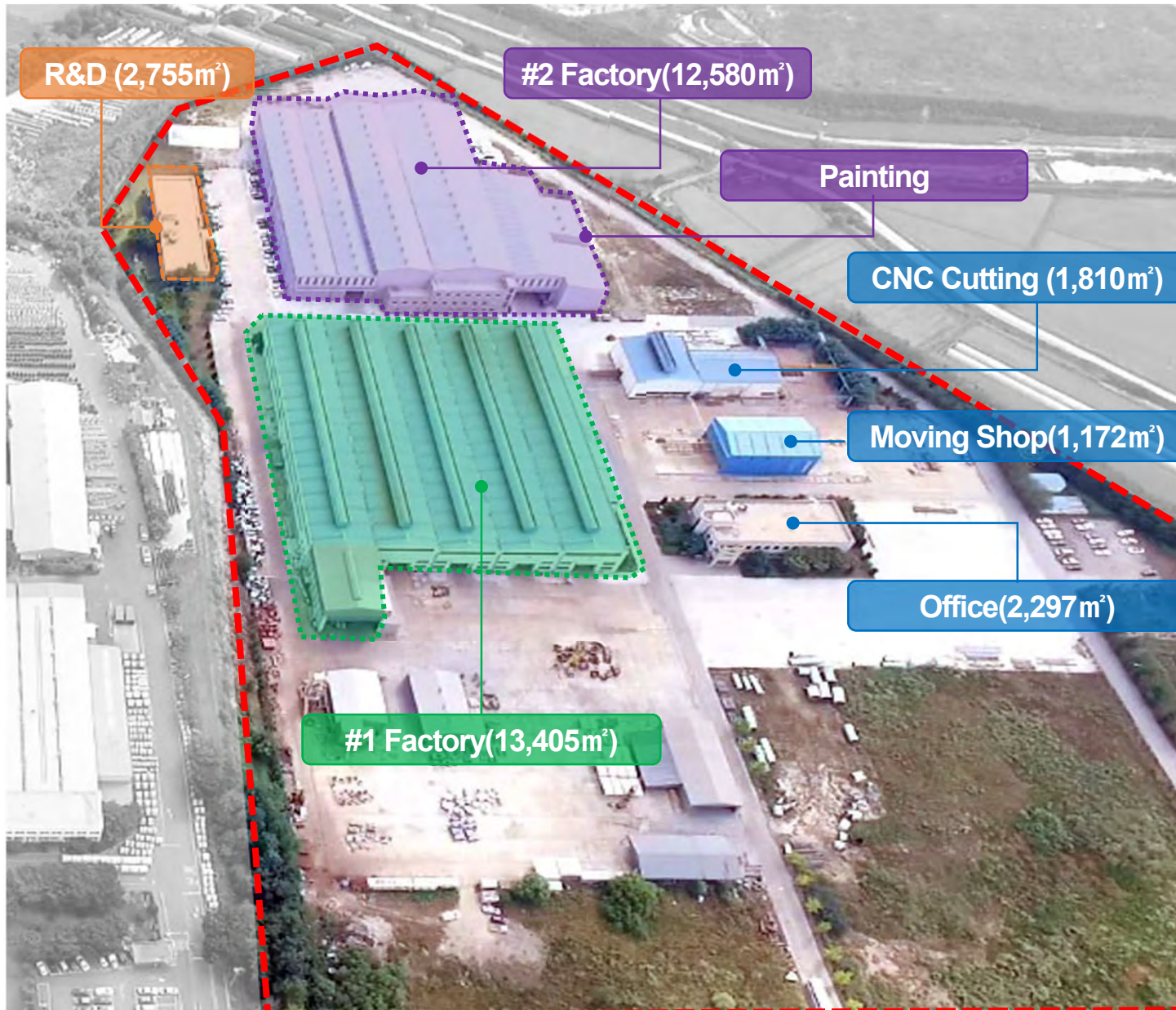


# WHO we are

## 5. Factory



### i Overview



ISO9001



ISO14001



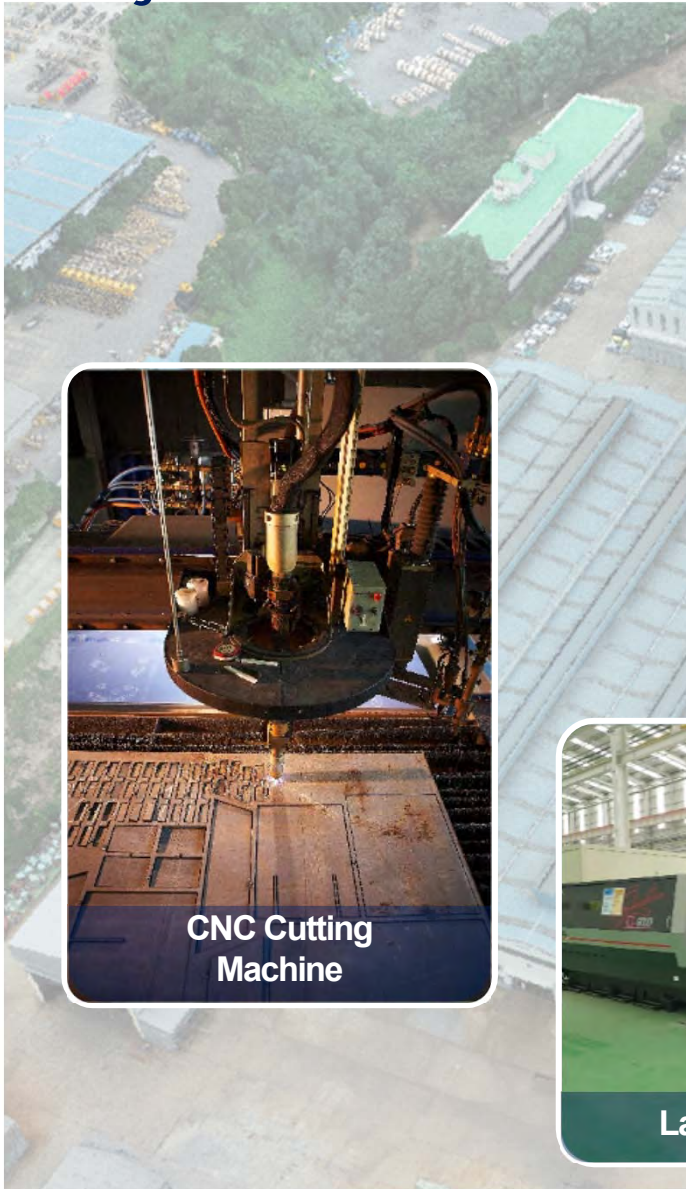
ISO45001

### i Major Facilities



Equipment	Specification	Q'ty
Chuck Lathe	Φ630 x 2,000mm	1
Long Shaft Lathe	Φ1,600 x 15,000mm	1
NC Lathe	Φ630 x 3,900mm	1
CNC Lathe	Φ1,100 x 8,000mm	1
CNC Lathe #2	Φ510 x 4,000mm	
Turning Machine	Φ4,000 x 1,300mm(H)	1
CNC Turning Machine	Φ1,700 x 1,300mm(H)	1
Planer Milling #1	1,700 x 4,000mm	1
Planer Milling #2	2,500 x 6,000mm	1
Milling	1,250 x 450mm x 1.5TON	1
Balancing Machine #1	Φ1,260 x 18TONG	1
Balancing Machine #2	Φ5,400 x 18TON	1
Balancing Machine #3	Φ4,000 x 28TON	1
Spinning Machine	Φ250 ~ Φ4,000	1
Bending Machine	16T * 3,000mm	2

### i Major Facilities



Equipment	Specification	Q'ty
Shearing Machine #1	3,000mm x 12t	1
Shearing Machine #2	2,500mm x 9t	1
NC Slot Machine	500 x 800mm x 421mm(H)	1
Slot Machine	500 x 600mm x 900mm(H)	1
Shot Blaster	2,500 x 15,000 x 2m/min	1
CNC Cutting Machine #1	2,600 * 12,000mm x Max.30t	1
CNC Cutting Machine #2	2,600 x 12,000mm x Max.60t	1
Laser Cutting Machine	3,070 x 1,550 x Max.25t	1
Radial Drilling Machine	1,710 x 1,630mm x 2,180RPM	3
HOIST	Span : 20m x 10m(H) x 5ton	10
	Span : 20m x 10m(H) x 10ton	7
	Span : 20m x 10m(H) x 20ton	5
VFD	1,620KW (0~200Hz)	1
Welding Machine	CO2 (49)	63
	CO2 INVERTER (4)	

# WHAT we do

## 1. Field of Business



Specialized  
Technology



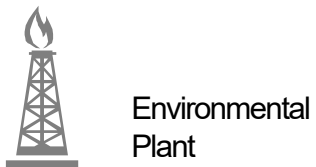
Power Plant



Incinerator



Biomass



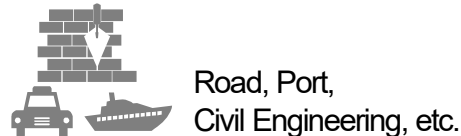
Environmental  
Plant



From Development  
to Management



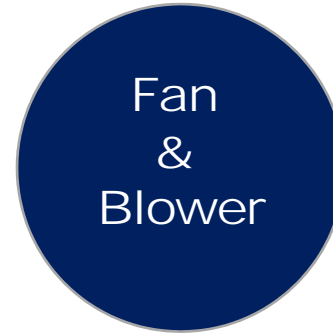
Residential &  
General Architecture



Road, Port,  
Civil Engineering, etc.



Office & Apartment  
Building



Best technology and  
Largest factory



Centrifugal Fan

Power Plant Axial Fan

- Axial Flow Fan
- Pitch Control Axial Fan

High Pressure Blower

- Single/Multi Stage Blower
- Roots Blower



TOP5 Supplier  
in Korea



# WHAT we do

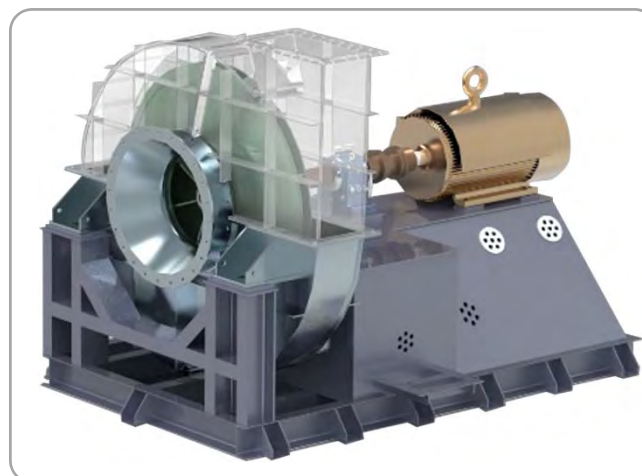
## 2. Fan & Blower - Overview



TONGYANG

TONGYANG is Korea's largest global supplier of tens thousands' Fan & Blower in more than 60 countries worldwide, and has design and manufacture in according to API673 & 560, JIS or any other project specification.

- Centrifugal Fan
- Axial Flow Fan
- Pitch Control Axial Fan
- Hot Gas Fan
- Single & Multi Stage Blower
- Roots Blower



# WHAT we do

## 2. Fan & Blower - Application



TONGYANG

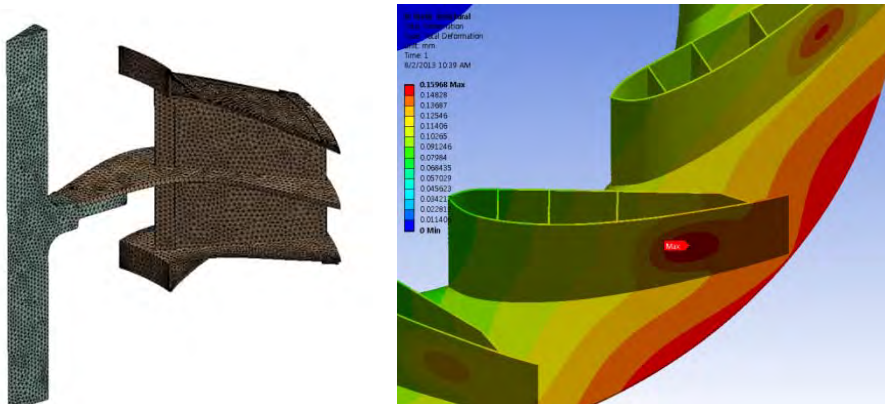
Industry		Fan & Blower
Power & Steam		Forced Draft Fan, Induced Draft Fan, Primary Air Fan, Secondary Air Fan, Booster Fan, Fluidized Air Blower
Iron & Steel	Sintering & Coking	Sinter Waste Gas Fan, Cooling Fan, DeSOx – DeNOx Fan, Combustion Air Fan, Hot Air Fan, Dedusting Fan, Coke Oven Fan, Gas Booster Fan
	Pelletizing	Preheat Fan, Drying Waste Gas Fan, Drying Supply Fan, Cooling Fan, Hood & Windbox exhaust Fan
	Blast Furnace Iron	Induced Draft Fan, Cooling Fan
	Direct Reduced Iron	Main Air blower, Ejector Stack Fan
	Steel Making	Waste-gas Fan, Cooler Exhaust Fan, Main Fan
Cement		Mill I.D. Fan (Cement, Raw, Coal), ESP & Bag Filter Fan, Clinker Cooler Fan
Oil & Gas	Refinery	I.D. & F.D. Fan for Boiler & Heater, Combustion Air Fan for SRU, etc..
	Gas	Process Fan & Blower
Petrochemical		Process Fan & Blower
ETC		Fan & Blower for Sugar, Glass, Tunnel

# WHY TONGYANG?

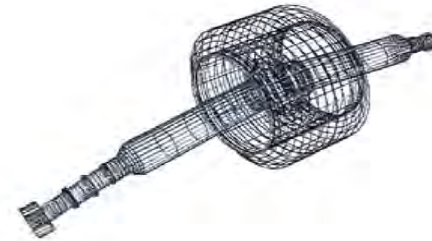


## 1. Design, R&D

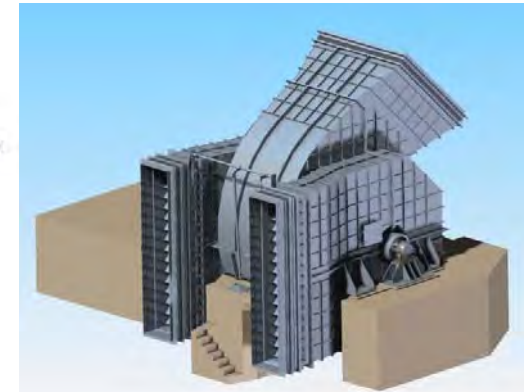
- 100% Customized Engineering Design for each order
- In accordance with API673, API560 or any specified international codes.
- In-HOUSE FEA Impeller Stress & Shaft Dynamic Analysis
- 3D design



Stress Analysis

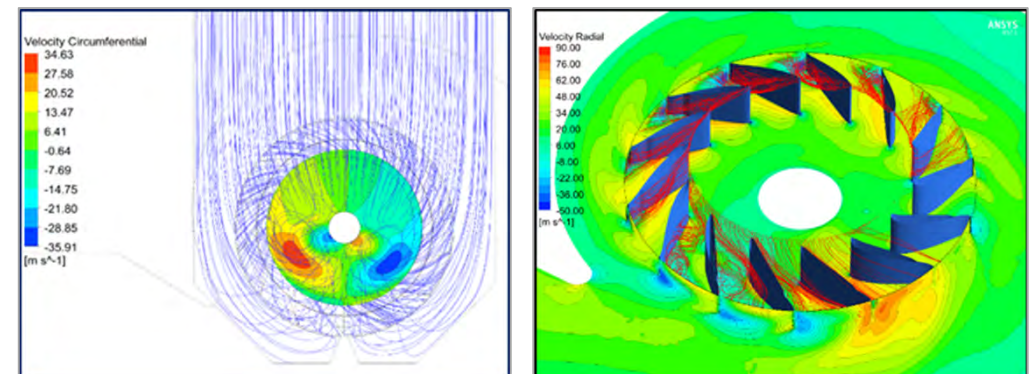


Dynamic Analysis



3D Design

Continuous R&D collaboration with Korean TOP University to increase efficiency and reliability.



High Efficiency R&D

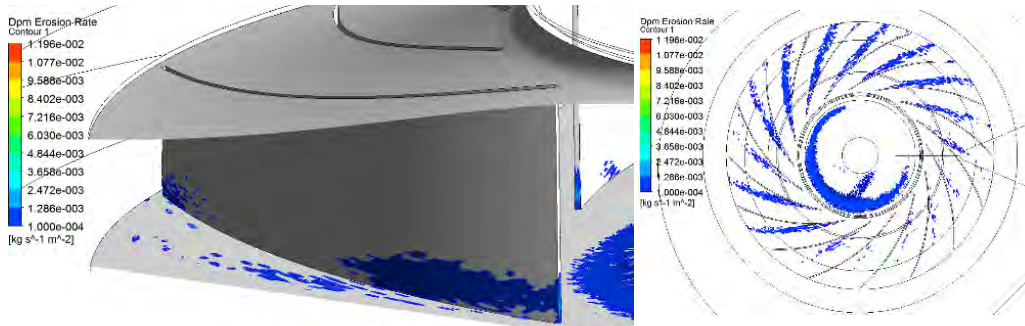
# WHY TONGYANG?



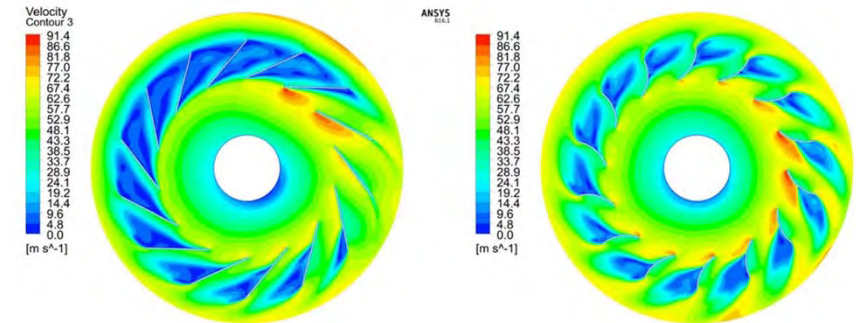
## 1. Design, R&D

Our In-HOUSE Computational Fluid Dynamics (CFD) analysis is used to

- Analyze the overall fluid capabilities of the process
- Ensure optimal internal flow distribution & efficiency by Minimizing vortex/vibration stress
- Check erosion part for better anti-abrasion solution
- Analyze root causes in trouble shooting



Erosion Analysis



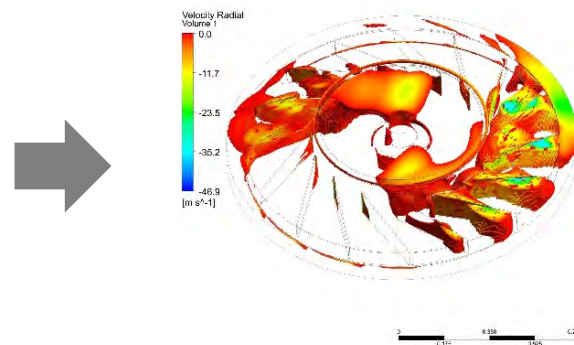
Retrofit of existing Impeller Type

## CASE STUDY

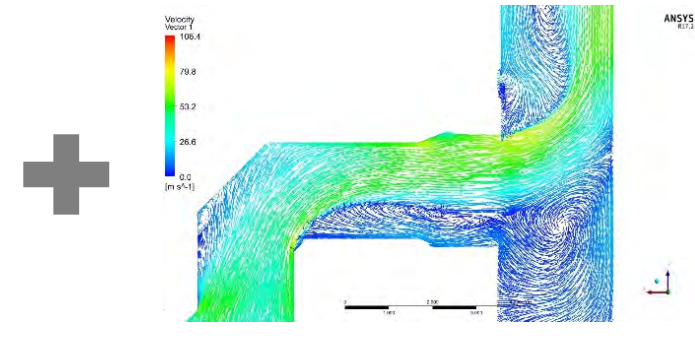
- Client : Southwest Luzon Power (Philippine, Power)
- Unsolved high vibration problem on other supplier's fan
- By CFD analysis, Rotating stall and outlet duct layout problem was defined as root case of the problem.



Several challenges to down vibration



Rotating Stall Analysis



Duct layout Analysis

# WHY TONGYANG?

## 2. Quality Assurance

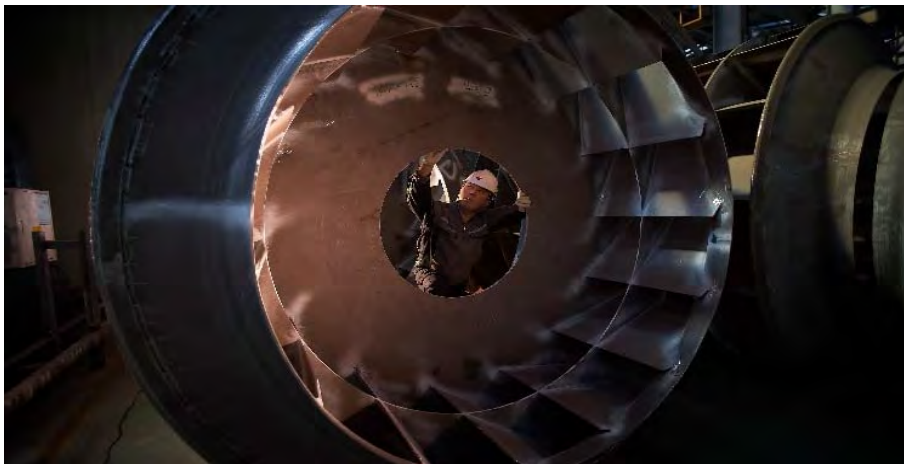


### Manufacturing Static Parts also in shop for

- Better Quality control than OEM like other suppliers
- Full assembly test, Independent progress management
- Managing shortest schedule for client's urgent situation



- Dynamic Balancing : G.2.5 according to ISO1940-1



- Non-Destructive Examination (NDT) by authorized third party company



- Full speed mechanical running test
- Performance test according to AMCA210 or JIS B 8330

# WHY TONGYANG?



TONGYANG

## 3. Retrofit & Service

### CASE STUDY

#### 1) Economical Retrofit Solution

- Client : SEMIRARA Mining & Power Corp. (Philippine, Power)
- 20% Capacity upgrade with using existing foundation & Duct

	Existing Fan (by Other supplier)		New Fan
Flow (m <sup>3</sup> /min)	8,843	→	10,612
Press. (mmAq)	750	→	836
Motor (kW)	1,400		1,900
Foundation			Keep existing one
In & Out Duct			Keep existing one



### CASE STUDY

#### 2) Variable Energy Saving Solution

- Client : TONGYANG Cement & Energy Corp. (S. Korea, Cement)
- 23% Energy Saving by Fluid Coupling using existing Fan & Motor

	Fan Design	Actual Operation	
		Existing	New
Flow (m <sup>3</sup> /min)	10,000	7,100	7,100
Press. (mmAq)	1,300	750	750
Power (kW)	2,590	1,820	1,420
Damper	100%	45%	-
RPM	100%	-	79%



## 3. Retrofit & Service

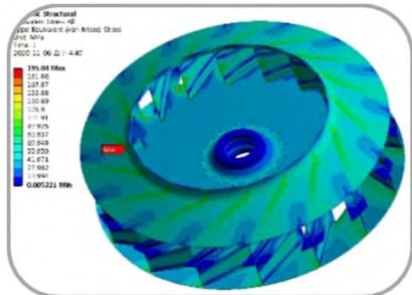
### 3) More Reliable Spare Part

Whether your original equipment was supplied by TONGYANG or not, we can help you get more longer life time, for higher temperature or heavier dust content conditions.

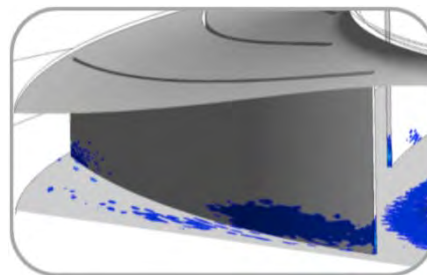
#### CASE STUDY

- Client : PT. SEMEN TONASA (Indonesia, Cement)
- Change other supplier's Impeller for higher temperature
- Fan : Kiln I.D. Fan
- Impeller Diameter : 3,030mm
- Work : Change Impeller only

Vane Deflection due to higher temperature



Stress & Performance Analysis for New Impeller



Erosion Analysis

### 4) Worldwide Service Network

Our service technicians and field engineers can supervise your installation and commissioning to ensure fan is safely and properly installed and tested. Our organized supporting network is always ready to eliminate problems and minimize time and cost.



Training for Regional A/S engineers

# WHY TONGYANG?



**TONGYANG**

## 4. Rich Experiences

### Europe

#### Bulgaria

Power : Maritza East 700MW

#### Germany

Power : Lunen 500MW

#### Hungary

Petrochem : MOL Petro

#### Russia

Chemistry : Ammonia Hydrogen Unit

### Mideast

#### Bahrain

Steel Mill : GIIC Pelletizing

#### Iraq

Petrochem : KARBALA REFINERY

Power : Khabat 300MW

#### Kuwait

Petrochem : KNPC CFP

#### Saudi

Power : Yanbu2 276MW

Marafiq 275MW

Petrochem : IBN Zahr Petro

#### Turkey

Power : Tufanbeyli 150MW

Petrochem : RSC Revamp

#### UAE

Petrochem :

Gasco Habsan, BNPP

#### IRAN

Petrochem : Esfahan Refinery

Steel Mill : Chardor Malu Pelletizing

### America

#### Mexico

Power : CFE Salamanca 152MW

Petrochem : PEMEX Retrofit

#### Brazil

Power : CSP IPP 100MW

Steel Mill : Companhia Siderurgica Pecem

#### Chile

Power : Cochrane 240MW,

Campiche 240MW

Angamos 240MW

Guacolda 152MW

Nueva Ventanas 240MW

#### Panama

Power : PACO 150MW

#### Bolivia

Petrochem : Yacimientos Petro

### Africa

#### Morocco

Power : TAQA 350MW

#### Libya

Power : Tripoli 350MW

Al Khalij 340MW

#### Botswana

Power : Morupule 100MW

#### Egypt

Power : Ain Sokhna 650MW

Steel Mill : Suez Steel

### Asia

#### Taiwan

Power : TALIN 800MW

Incineration : Cheng Loong Paper

Steel Mill : Dragon Steel

#### Philippines

Power : Sarangani 105MW

Cement : Republic Cement

Steel Mill : Steel Asia

#### Vietnam

Power : Monduong 500MW

Petrochem : Petrovietnam IPP

#### Singapore

Power : TUAS 110MW

Petrochem : Jurong Aromatic

#### Japan

Power : MC Shiohama 97MW

Steel Mill : OJI Material IPP

Incineration : Nippon / Daio Paper

#### Indonesia

Power : LONTAR 300MW

Steel Mill : ANTAM IPP, Krakatau Steel

Petrochem : DS LNG

Cement : SEMEN INDONESIA

#### China

Incineration : Beijing MSW

Steel Mill : Handan Steel

#### Australia

Power : Blue water 205MW

Millmerran 805MW

#### India

Steel Mil : ISOAT Steel

**Over 10,000 of fans  
in 60 countries**

# WHY TONGYANG?

## 5. Customer's Satisfaction



Doosan Heavy Industries



IHI



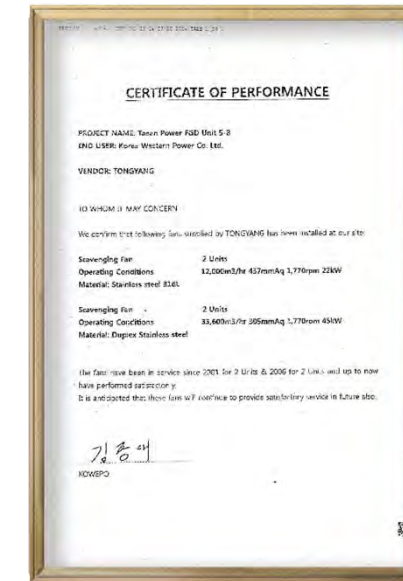
Foster Wheeler



Sumitomo Heavy Industries



PLN, Indonesia



Korea WestEast Power



Korea SouthEast Power

### The most reliable fan supplier

Well Financial  
Structure

'Powerful country in Plant'  
Korean TOP fan supplier

- **Strategic relation-ship with GLOBAL TOP USERS**
- **Global supplier (export ratio is more than 50%)**
  - Global top 5 ranked in centrifugal fan market

Rich Experiences

- **Over 10,000 fans are operating in about 60 countries**
  - GLOBAL MAJOR CLASS sales & A/S network
  - Brand awareness in global market
- **Accumulated KNOW-HOW for A/S, Trouble Shooting.**

TONGYANG  
FAN &  
BLOWER

- **215,700m<sup>3</sup> for Manufacturing & Test**
  - International standardized manufacturing facilities specially for Huge fan
- **SHOP TEST facilities according to JIS, AMCA**

Largest single fan  
factory in the world

- **Special Design for high efficient fan & anti- low frequency noise**
- **Advanced analysis FEM, CFD & etc.**
- **Much experiences for API Design, CE Regulation**

Engineering / Quality  
Management



**THANK YOU**

To be your Long term  
Business Partner