





# **APOLYTECH CO., LTD**





#### **APOLYTECH CO., LTD**

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**Area:** 20.000 m<sup>2</sup> **Employees:** 300



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# **OVERVIEW**

### **INTRODUCTION**

Asia Polytechnic Co., Ltd (Apolytech) was officially established and in operation in 2008 in the field of mechanical engineering related to Boiler products and saturated steam supply. Over the years, Apolytech has developed a team of technicians who are highly trained and always update as well as keep up to date with information and news about new technologies to initiate innovations in the industrial boiler industry to bring economic efficiency to customers. Till now, Apolytech has attained many successes in design calculation, manufacture, installation of boiler systems, pressure devices, thermal equipment, and fish meal production line systems, etc. leading to be a pioneer and leading company in technology, focusing on customer benefits. Therefore, since its establishment, Apolytech has developed a sustainable market share throughout Vietnam.

Apolytech has been highly appreciated by customers for the quality, performance, and especially environmentally friendly of boiler products and pressure equipment, especially fluidized bed boilers applicable for different fuels such as coal dust, rice husk, cashew nutshell, coffee husk, sawdust, bagasse,... etc.

Apolytech is considered as the first company in Vietnam to design and manufacture successfully a multi-fuel fluidized bed boiler in Vietnam. Moreover, we have successfully developed a boiler to produce steam with electricity generation, handle industrial waste, reduce operating fuel costs.

In 2019, United Nations Industrial Development Organization of the United Nations (UNIDO) coordinated with the Ministry of Industry and Trade to implement the project for the period of 2015-2019 "Promoting the use and operation of high-performance industrial boilers using energy efficiently in Vietnam" has listed and evaluated Apolytech as one of the 5 largest industrial boiler companies in Vietnam in terms of scale and market share.

Apolytech's management board recognizes that it is important of increasing boiler efficiency for customers' production, always paying attention to investing in modern specialized production machinery systems, applying for scientific-technical advances and catch up with the trend of applying technology 4.0 in management and production to create high quality and absolutely safety products and environmentally friendly.



## **BUSINESS PHILOSOPHY**



Prestige and quality create sustainable development.



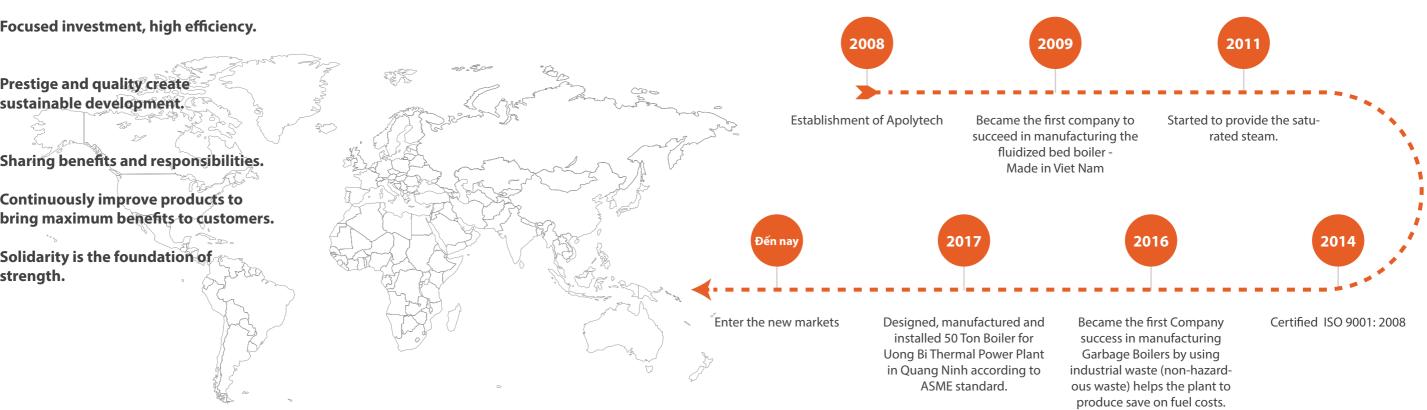
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Sharing benefits and responsibilities.



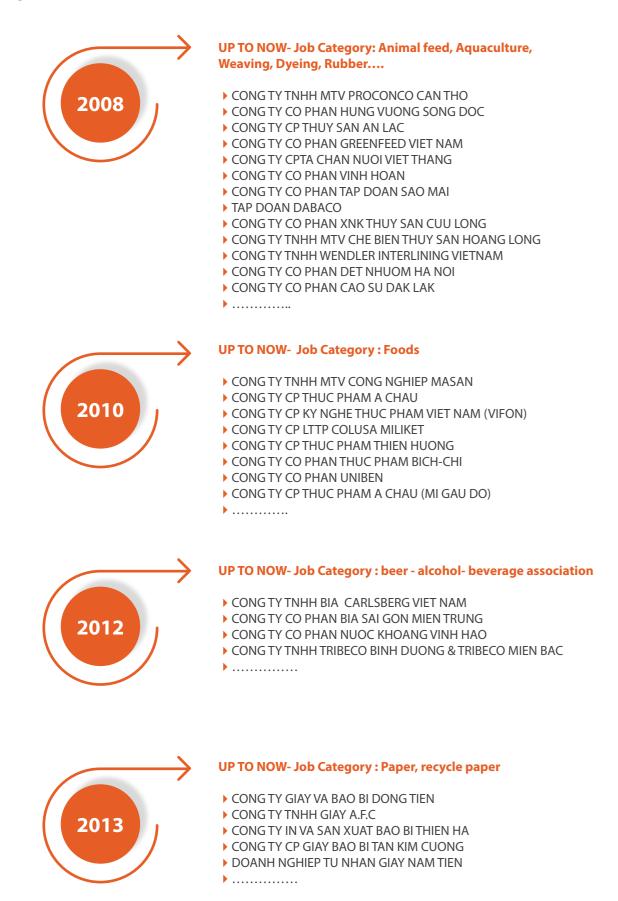
Solidarity is the foundation of strength.

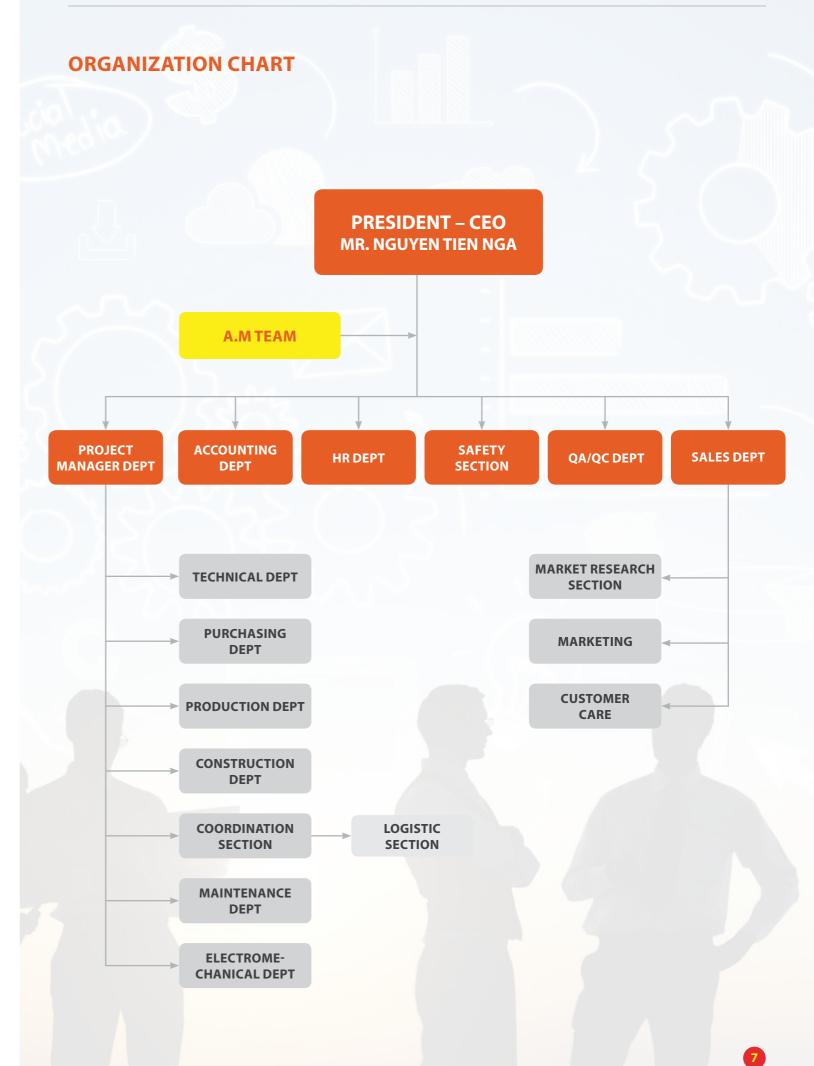
#### **HISTORY**



### **DEVELOPMENT PROCESS**

In 11 years of effort, we have completed more than 600 projects spread across Vietnam and brought satisfaction to customers:





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#### **THE MARKET HAS JOINED**



## **VISION – MISSION – CORE VALUES**



## Vision

Becoming a leading industrial boiler manufacturer and energy solutions in Vietnam.



#### Mission

Becoming a supplier of technology solutions with low cost, high efficiency and environmentally friendly for industry plants.

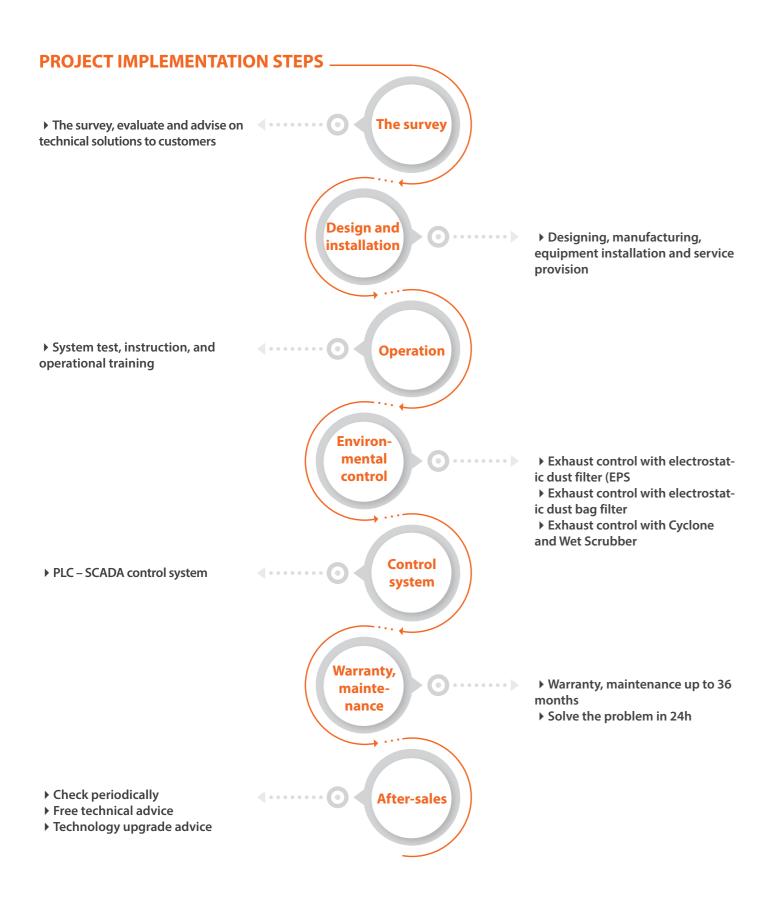


#### Core Values Honest – Creative - Professional









## **PRODUCTS AND SERVICES**



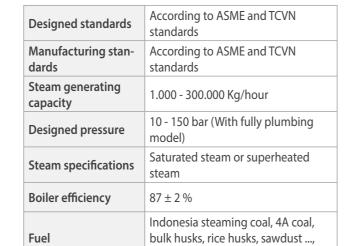
#### **CIRCULATING FLUIDIZED BED BOILER SYSTEM**

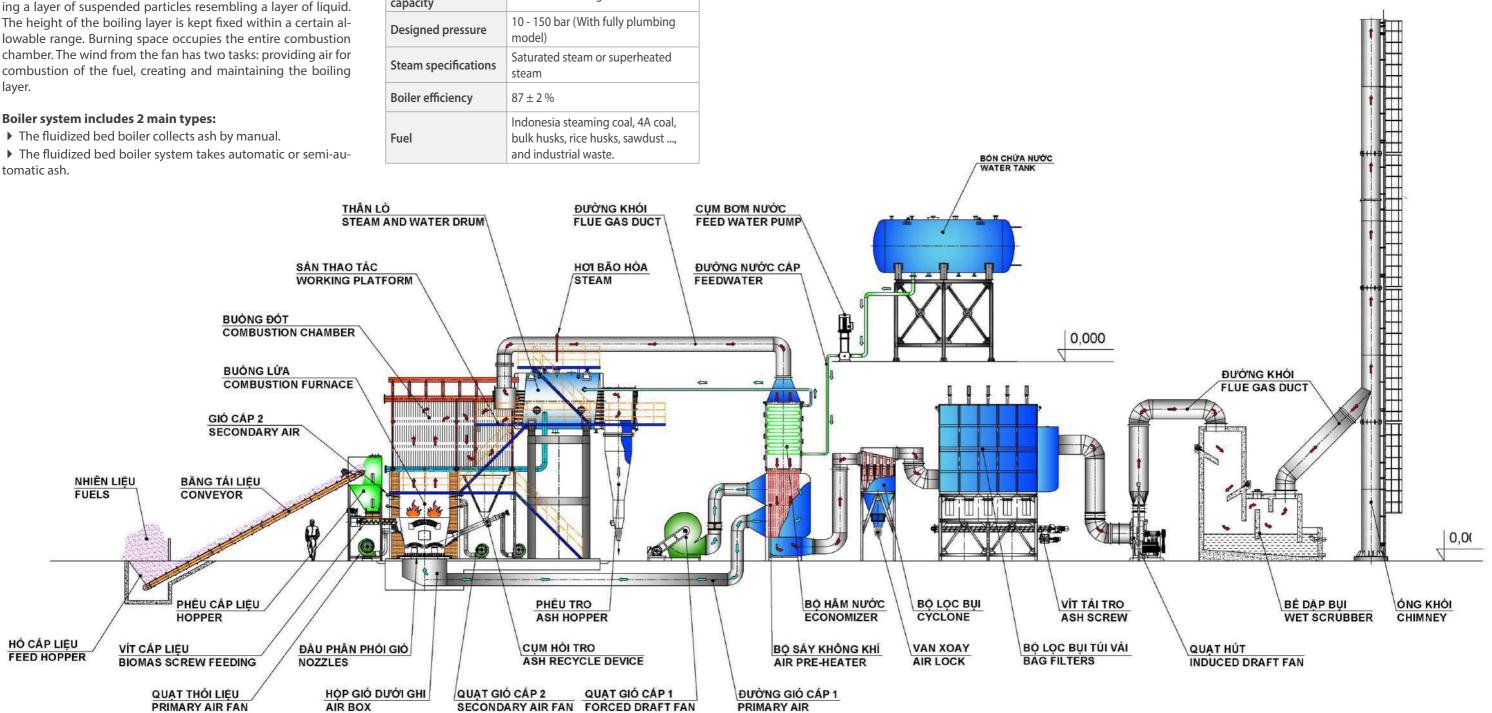
#### **General introduction**

#### **Specifications:**

This technology is developed basing on the burning technology on the grate where fuel particles are suspended in a hot, bubbling fluidity bed of ash and other particulate materials. The wind is blown up from the bottom and when the wind speed is high enough it creates a force that can overcome the gravity of the particle created and the particles move upwards creating a layer of suspended particles resembling a layer of liquid. The height of the boiling layer is kept fixed within a certain allowable range. Burning space occupies the entire combustion chamber. The wind from the fan has two tasks: providing air for combustion of the fuel, creating and maintaining the boiling layer.

tomatic ash.





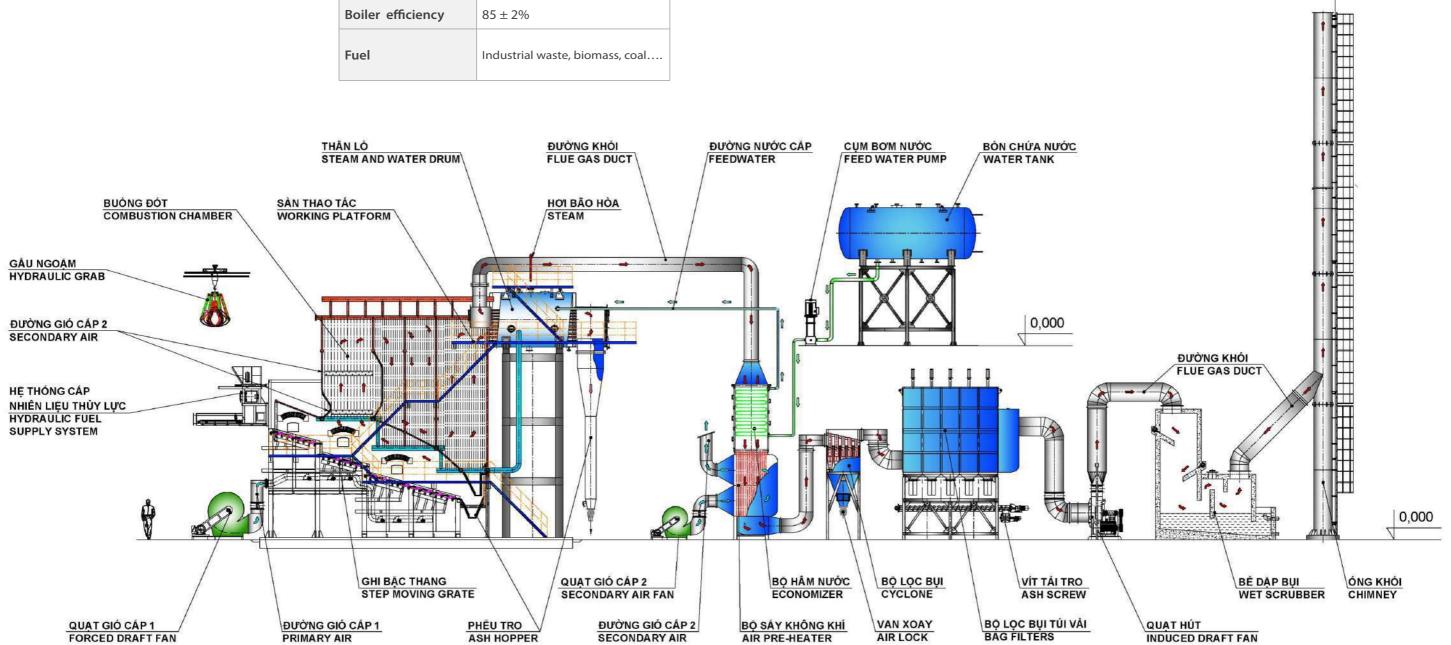
#### **STEP MOVING GRATE STOKER BOILER SYSTEM**

#### **General introduction**

This is a burning technology on the surface of the step moving grate. Under the motion of moving grate, the fuel is disturbed and the motion on the grate. The grate is continuously moving to base on the transmission mechanism of an electric motor or hydraulic cylinder. In a fire burning chamber, the burning stages of the combustion process occurring in each region. The air supply to the combustion process will be adjusted to each region to satisfy the system. Burning chambers at step moving grate are suitable for use with fuels that are high in the volatile matter that can burn fuels with high ash content and high moisture.

#### **Specifications:**

Designed standards	According to ASME and TCVN standards
Manufacturing stan- dards	According to ASME and TCVN standards
Steam generating capacity	5,000 - 300,000 Kg/hour
Designed pressure	10 - 150 bar (plumbing model)
Steam specifications	Saturated steam or superheat- ed steam
Boiler efficiency	85 ± 2%
Fuel	Industrial waste, biomass, coal



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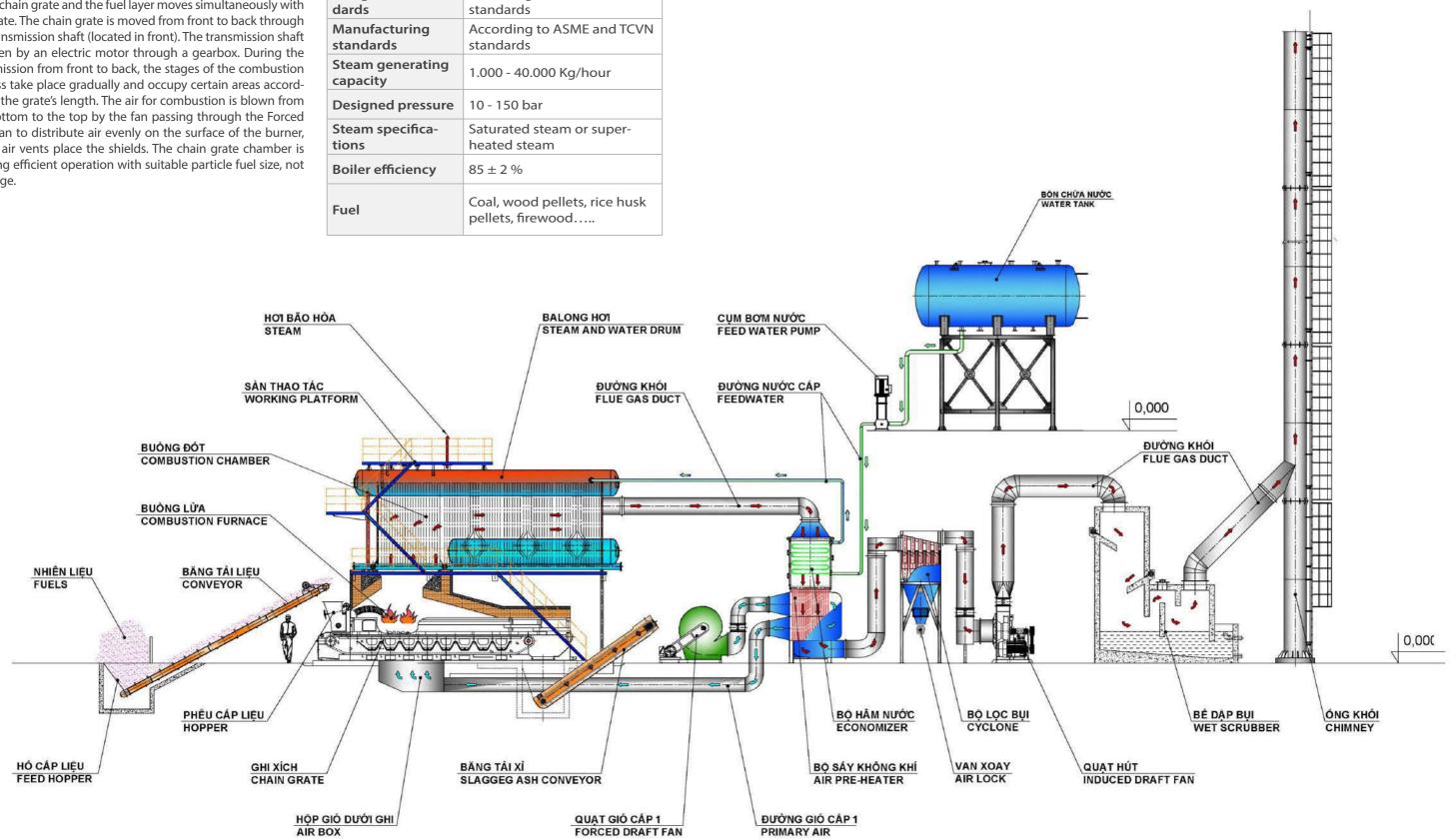
#### **CHAIN GRATE STOKER BOILER**

#### **General introduction**

This is a technology that burns on the endless motion surface of the chain grate and the fuel layer moves simultaneously with the grate. The chain grate is moved from front to back through the transmission shaft (located in front). The transmission shaft is driven by an electric motor through a gearbox. During the transmission from front to back, the stages of the combustion process take place gradually and occupy certain areas according to the grate's length. The air for combustion is blown from the bottom to the top by the fan passing through the Forced draft fan to distribute air evenly on the surface of the burner, in the air vents place the shields. The chain grate chamber is working efficient operation with suitable particle fuel size, not too large.

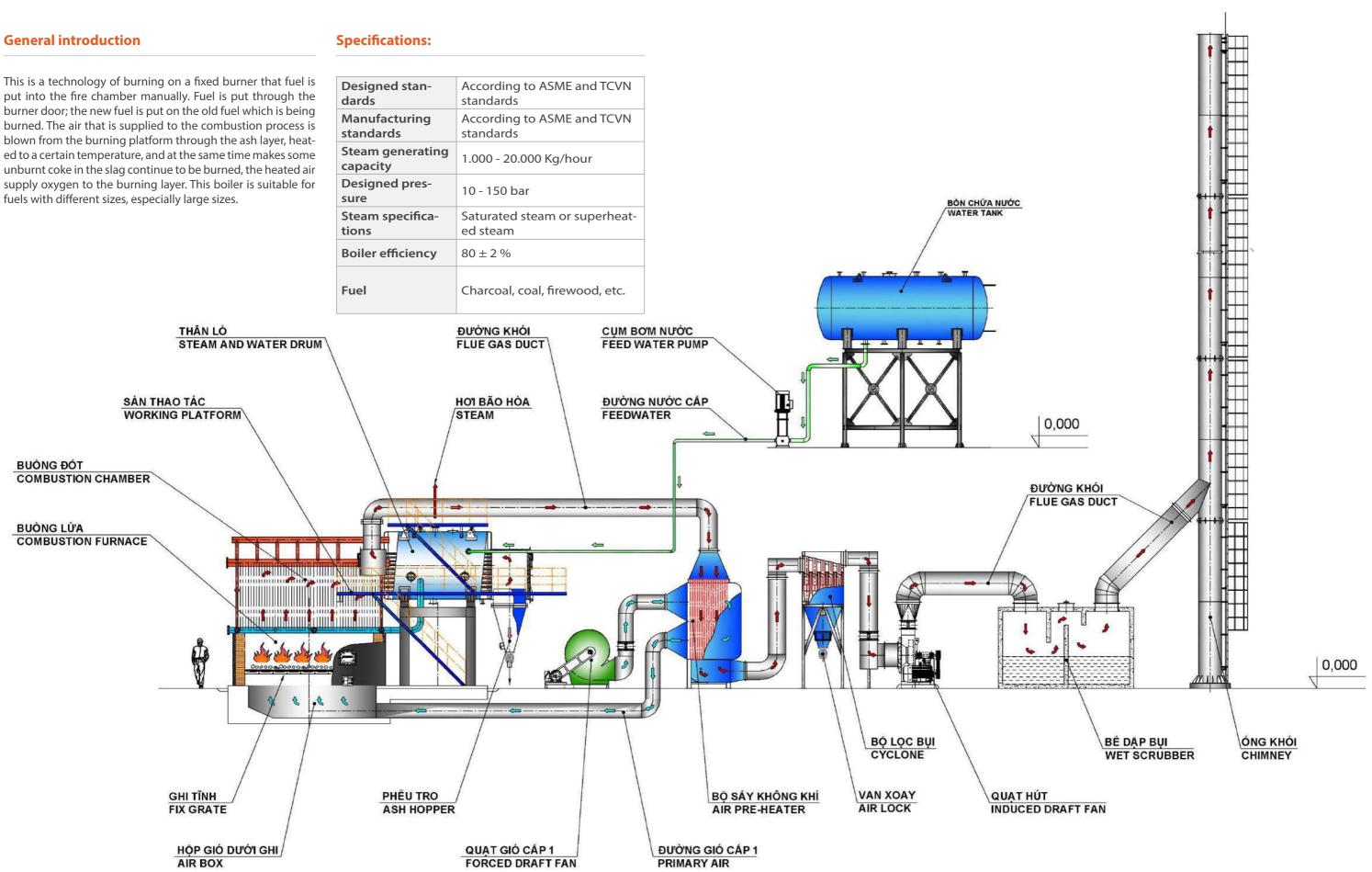
#### **Specifications:**

Designed stan- dards	According to ASME and TCVN standards
Manufacturing standards	According to ASME and TCVN standards
Steam generating capacity	1.000 - 40.000 Kg/hour
Designed pressure	10 - 150 bar
Steam specifica- tions	Saturated steam or super- heated steam
Boiler efficiency	85 ± 2 %
Fuel	Coal, wood pellets, rice husk pellets, firewood



#### **FIXED GRATE BOILER**

put into the fire chamber manually. Fuel is put through the burner door; the new fuel is put on the old fuel which is being burned. The air that is supplied to the combustion process is blown from the burning platform through the ash layer, heated to a certain temperature, and at the same time makes some unburnt coke in the slag continue to be burned, the heated air supply oxygen to the burning layer. This boiler is suitable for



#### **GAS-FIRED OR LIQUID-FIRED BOILERS**

#### **General introduction**

#### **Specifications:**

This is a fire tube boiler or water tube boiler with a small capacity (<20.000 Kg/H)

This type of boiler is used for areas where strict environmental requirements or tight installation spaces are applied.

The structure of the fire tube boiler usually contains 3 pass WET BACK passes. The structure of a water-tube boiler usually has 2 pass, 1 balong outside.

Designed stan-	According to ASME and
dards	TCVN standards
Manufacturing	According to ASME and
standards	TCVN standards
Steam generat-	500 - 20.000 Kg/hour
ing capacity	
Designed pres-	10-20 bar
sure	
Steam specifica-	Saturated steam or super-
tions	heated steam
Poilorofficionau	90 + 2 %
Boiler efficiency	90 ± 2 %
Fuel	DO and FO oil, gas, etc.
luci	bo and i o on, gas, etc.

#### SƠ ĐỒ NGUYÊN LÝ

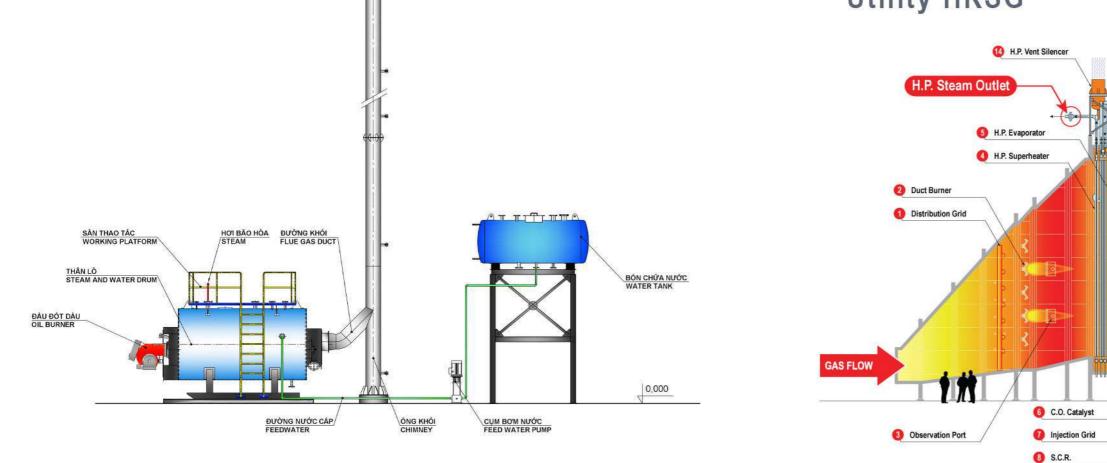
#### HEAT RECOVERY STEAM GENERATOR

#### **General introduction**

A Heat Recovery Steam Generator (HRSG) unit is an energy recovery boiler that recovers heat from the hot gas steam with potential high energy content of the Gas turbines or Incinerator system.

The recovered steam will be used for Production process (low pressure) or for Power Generation (high pressure).

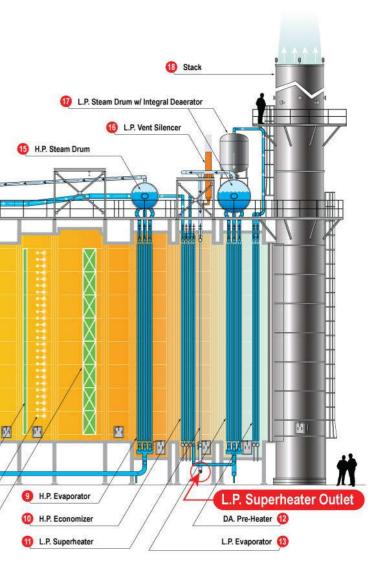
# Combined Cycle Utility HRSG



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#### Specifications:

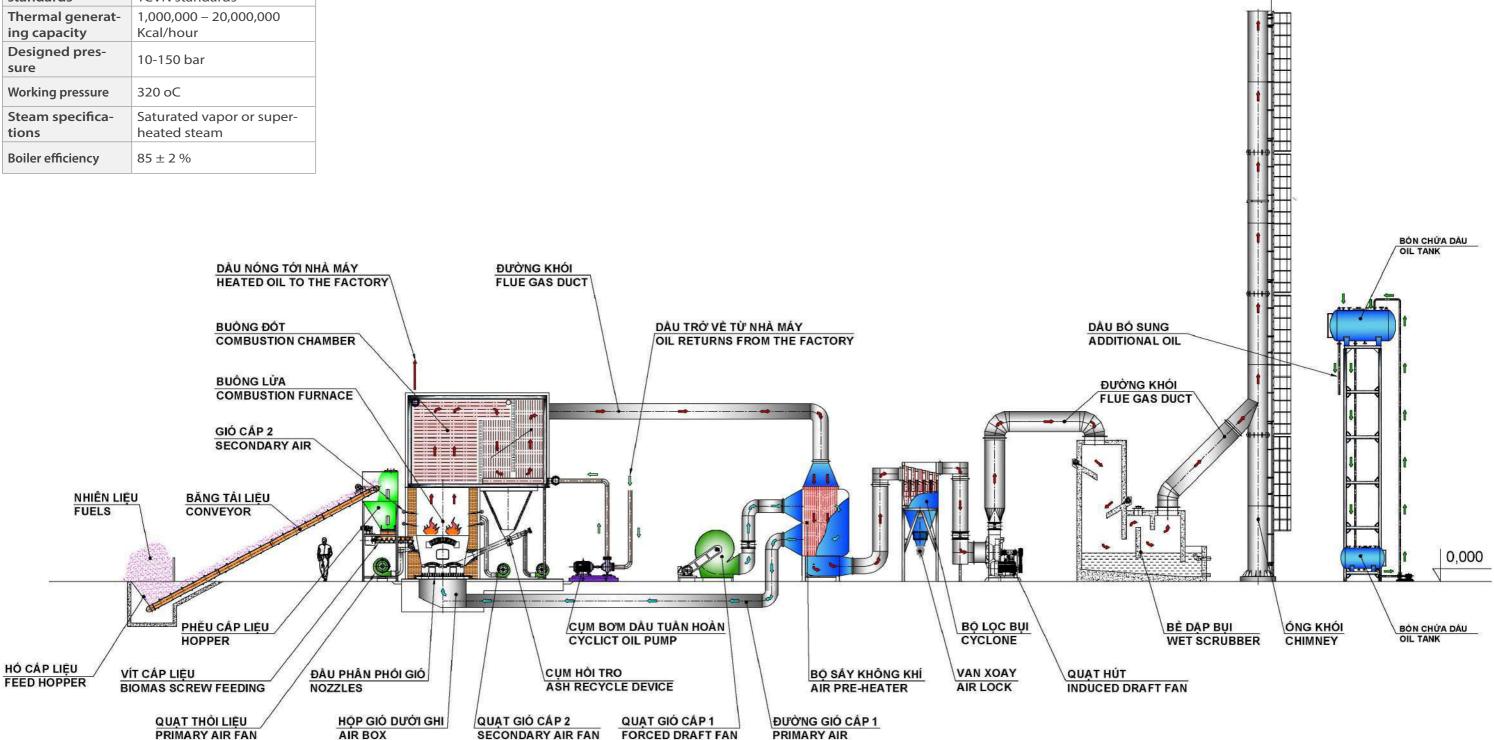
Designed standards	According to ASME and TCVN standards
Manufacturing stan- dards	According to ASME and TCVN standards
Steam generating capacity	5.000 - 200.000 Kg/hour
Designed pressure	10-150 bar
Steam specifications	Saturated steam or super- heated steam
Working pressure	Up to 100 bar(g)
Steam working pressure	Up to 500 oC
Boiler efficiency	85 ± 2 %



## **THERMAL OIL BOILER** (using the fluidized layer combustion principle)

#### **Specifications:**

Designed stan- dards	According to ASME and TCVN standards
Manufacturing standards	According to ASME and TCVN standards
Thermal generat- ing capacity	1,000,000 – 20,000,000 Kcal/hour
Designed pres- sure	10-150 bar
Working pressure	320 oC
Steam specifica- tions	Saturated vapor or super- heated steam
Boiler efficiency	85 ± 2 %



### **BOILER CONTROL SYSTEM**

#### **General introduction:**

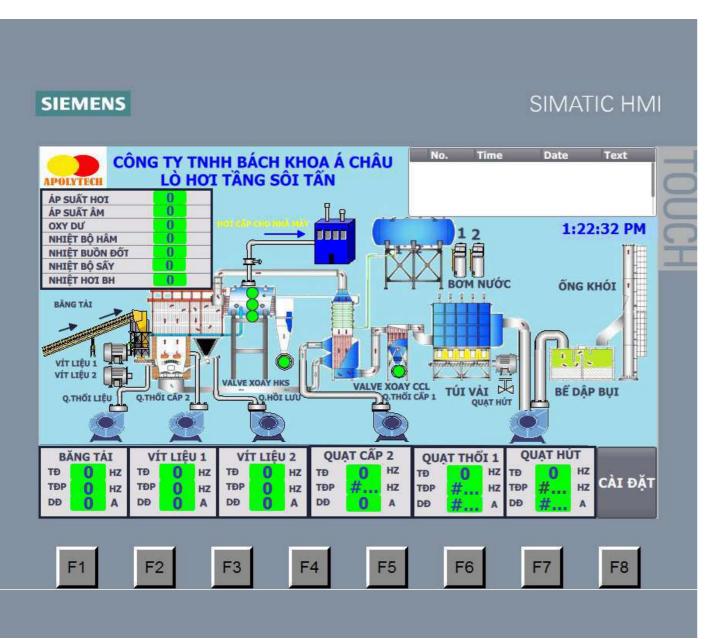
• Central controlling system: PLC (Programmable Logic Controller)

• Motor controlling system: inverter, contactor, relay.

► SCADA monitoring system: Touch screen HMI (Human Machine Interface), industrial computers.

▶ Protection system: protection sensor (water level, pressure, temperature, etc.), thermal relay protects.

#### HMI screen







## **EXHAUST GAS TREATMENT SYSTEM**

#### I. EXHAUST GAS TREATMENT: BAG DUST FILTER

• Using pulse jet cleaning technology, this enables effective cleaning ability. High efficiency, low emission levels, small air leakage rate, and low energy consumption, etc.

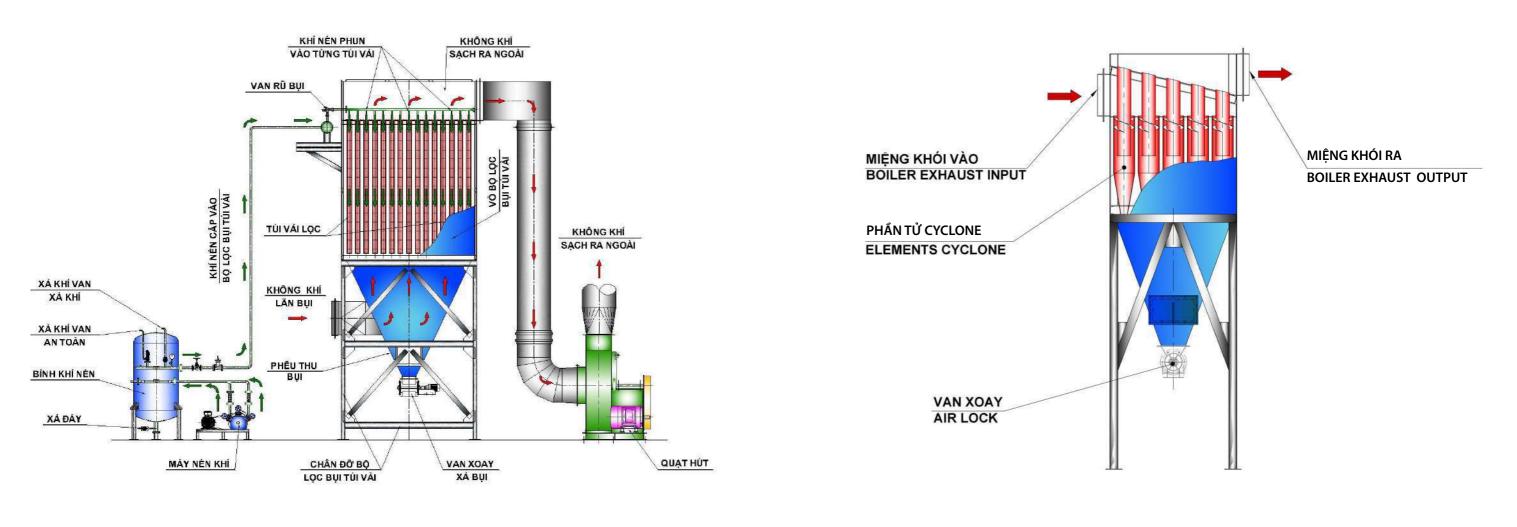
▶ Inlet and outlet air duct layout compact, air resistance.

• Using the sub-room air pulse jet cleaning stopped, cleaning cycle is longer and with lower air consumption which can doubly improve the life of the bags and pulse valves.

#### **II/ DUST COLECTOR SYSTEM: MULTI-LEVEL CYCLONE**

> Composed of multi small cyclone, with the wings of steel inside

> The manufacture wings for cyclone order to minimize ash has turned that filter out the smoke line



#### **Specifications:**

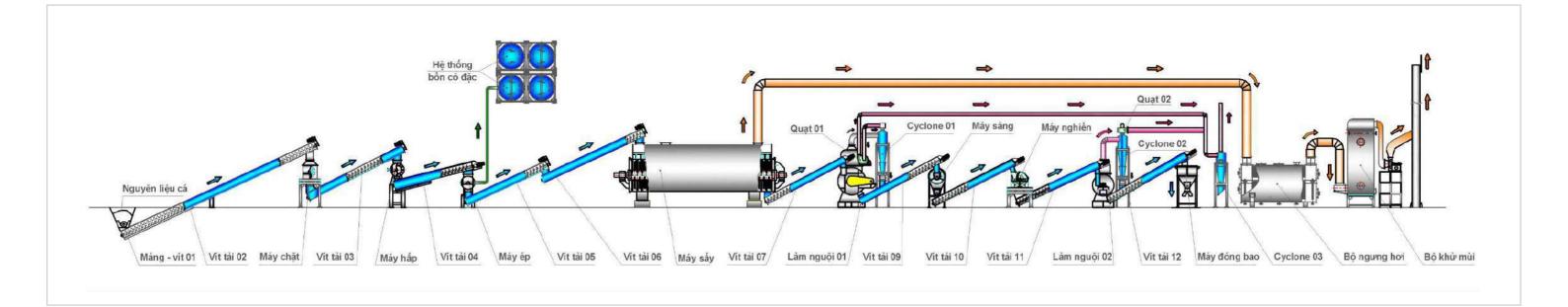
- ► Air flow: flexible
- ▶ Efficiency: Up to 99%
- ▶ Operating temperature: <250°C
- ▶ Dust content inlet: <20g/Nm3
- Dust content outlet: <30mg/Nm3</p>

#### **Specifications:**

- ► Capacity: flexible
- ▶ Working temperature: <350°C
- ▶ Pressure drop: <600Pa
- ▶ Efficiency: > 85% & 15 µm Particle diameter



#### **FISHMEAL PRODUCTION PLANT**



#### **1. CONG TY TNHH CHE BIEN THUY HAI SAN LONG SON** Capacity: 120 tons/day

## 2. CONG TY TNHH MTV GO DANG BEN TRE

Capacity: 240 tons/day

#### **3. CONG TY TNHH CHE BIEN THUY SAN THUY HAI** Capacity: 90 tons/day

**4. DOANH NGHIEP TU NHAN DONG HAI** Capacity: 90 tons/day

#### **5. CONG TY TNHH BOT CA HA TIEN**

Capacity: 90 tons/day

#### 6. CONG TY CO PHAN HUNG VUONG SONG DOC

Capacity: 240 tons/day

## MAINTENANCE SERVICE

#### CHECKING >> ANALYSIS >> SOLUTION

With a team of more than 300 employees and experts spread throughout Vietnam, Apolytech has the experience to support customers in the operation and prevent incidents that may arise.

#### Step 1 - CHECKING:

We localize the areas having risks of incidents, find the causes, and propose solutions to solve the problem. **Step 2 - ANALYSIS:** 

Conduct technical analysis to find out the core causes and main causes to overcome and optimize the boiler.

Step 3 - SOLUTION: Provide technical reports including information to send to customers: Warnings/advice; Propose a solution; Make an estimate of the workload that needs to be done





**PICTURES** 

## **Factory**







Apolytech – True Energy Solutions



## **PROJECTS**

#### **CONG TY CO PHAN UNIBEN**



### CONG TY TNHH TMSX NHUA EP TIN THANH



#### CONG TY CO PHAN MASAN MEATLIFE



#### CONG TY TNHH WENDLER INTERLINING VIET NAM



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## EVN – UONG BI POWER PLANT (QUANG NINH – 50T/H)





#### CONG TY CP NHUOM HA NOI



### FISH MEAL PRODUCTION PLANT: HUNG VUONG SONG DOC







#### Consulting alternative solutions: CONG TY CP THUY SAN CUU LONG

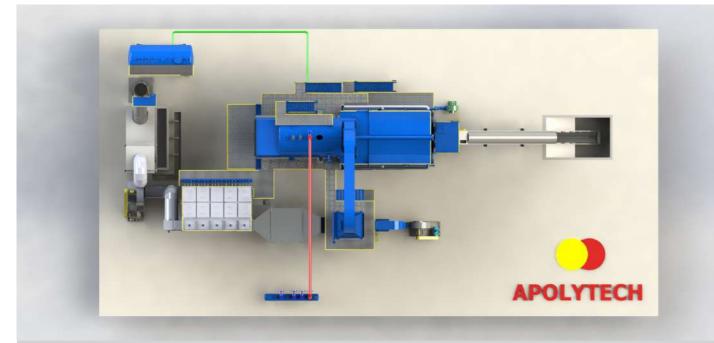


VIETNAM-JAPAN INTERNATIONAL INSTITUTE FOR SCIENCE AND TECHNOLOGY, and KOREA INSTI-TUTE OF ENERGY RESEARCH FUTURE ENERGY PLANT, and HYUNDAI POWER SYSTEMS in Boiler technologies

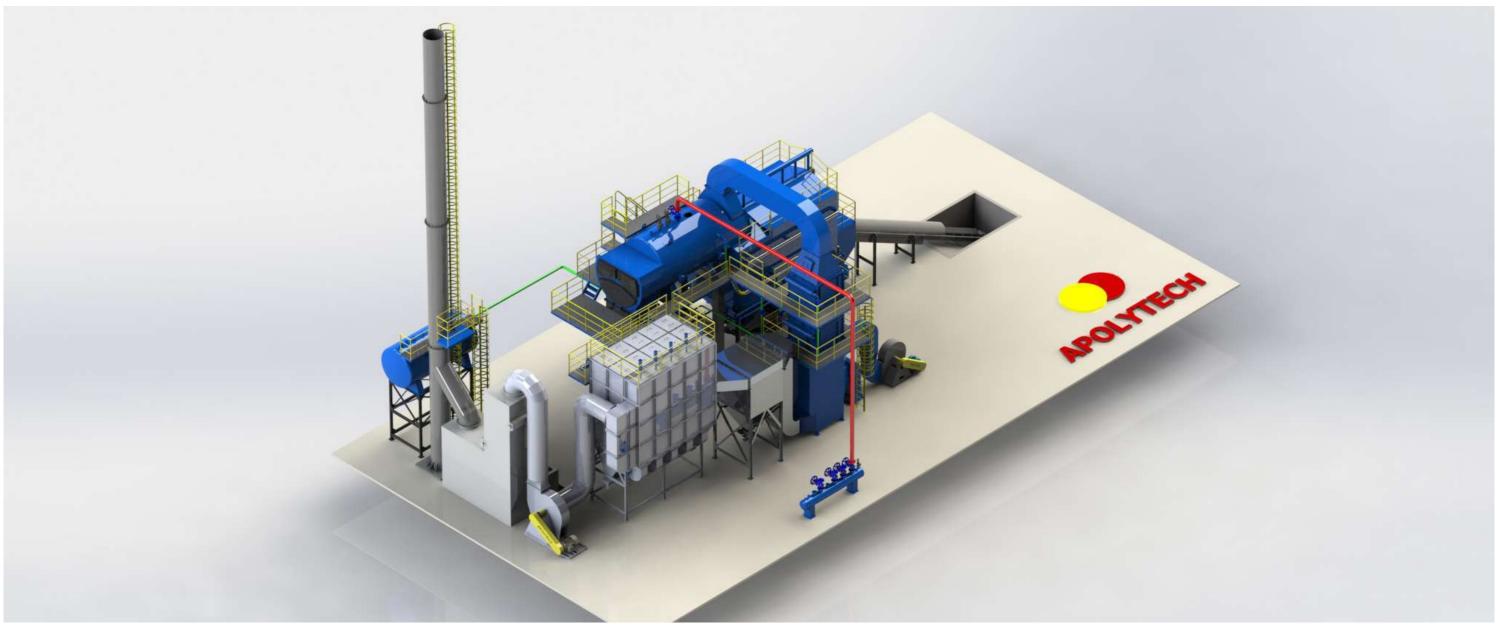


# "MOU CONTACT" between APOLYTECH, and HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

#### **3D DESIGN**









## **EPC PROJECTS**



**EVN Viet Nam** 01 Cogen project 50T/h Address: Power Plant Uong Bi – Quang Ninh



**GREENFEED VIET NAM CORP** 02 FBC boilers 02x15T/h

Address: Can Tho

**TRI VIET POWER., LTD** 

Address: Di An, Binh Duong

Address: KCN Nam Cam, Nghe A

01 FBC boiler 35T/h

01 FBC boiler 20T/h

01 FBC boiler 15T/h

Adress: Hai Duong



#### **ASIA FOODS CORPORATION**

01 FBC boiler 30T/h Address: An Phu, Binh Duong 01 FBC boiler 40T/h Address: KP 1B, An Phu, Binh Duong 01 FBC boiler 12T/h Adress: Tien Son, Bac Ninh 01 FBC boiler 12T/h Address: Đa Nang

**TIN THANH GROUP** 

Address: Hoa Sen Nghe An

Address: DRC rubber plant Da Nang

01 FBC boiler 15T/h

01 FBC boiler 30T/h



# IÊT THĂNG

JOINT STOCK COMPANY WINS **VIETNAM FEED** 02 FBC boilers 02x20T/h Address: Lai Vung, Dong Thap 01 FBC boiler 20T/h

Address: Sa Dec, Dong Thap

DONG TIEN BINH DUONG PAPER

MILLIKET-Colusa

## **COLUSA - MILIKET FOODSTUFF** 02 FBC 02x10T/h Address: Ho Chi Minh





**CARLSBERG VIET NAM CO., Ltd** 02 FBC boilers 02X20T/h Address: Hue

01 FBC boiler 30T/h + 16T/h

Address: Ben Cat, Binh Duong





CO., Ltd



02 FBC boiler 02x15T/h Address: Ho Chi Minh & Hai Duong





**UNIBEN JSC** 02 FBC boilers 15T/H Address: Ho Chi Minh





VINH HOAN CORP.

VINH HOAN CORP 01 FBC boiler 22T/h Address: Cao Lanh, Dong Thap 01 FBC boiler 10T/h Address: Cao Lanh, Dong Thap 01 FBC boiler 12T/h Address: Cao Lanh, Dong Thap



VIFON



# JOINT STOCK COMPANY



PROCONCO CAN THO ONE MEM-**BER CO., Ltd** 01 FBC boiler 10T/h Address: Can Tho 01 FBC boiler 10T/h Address: KCN Tra Noc, Can Tho



**ONE ONE FOOD., JSC** 03 FBC 15T/h + 10T/h + 5 T/h Address: Hung Yen





#### **BICH CHI FOOD COMPANY**

01 FBC boiler 20T/h Address: Sa Dec, Dong Thap 01 FBC boiler 10T/h Address: Sa Dec, Dong Thap 01 FBC boiler 10T/h Address: Sa Dec, Dong Thap



A.F.C PAPER Co., Ltd 01 FBC boiler 15T/h Address: KCN Vinh Loc, Ho Chi Minh



#### **UINI-PRESIDENT VIETNAM Co.,** Ltd 01 FBC boiler 10T/h Uni-President Address: KCN Song Than



#### HUNG VUONG CORP

01 FBC boiler 20T/h Address: Song Doc, Ca Mau



## G HAGTEX HA NOI TEXTILE JSC

01 FBC boiler 10T/h + 4 Mkcal of Oil transfer heater Address: Hung Yen



#### WENDLER INTERLINING VIETNAM LTD., CO

02 boiler systems, each with 01 Thermal oil boiler 4.000.000 kcal/h and combined with 05 ton/h of reboiler, using the principle of fluidized bed combustion Address: Quang Nam



## SATURATED STEAM SUPPLY PROJECTS



**1.CONG TY TNHH MTV CONG NGHIEP MASAN** Supply saturated steam 40 tons/ h for the noodle factory. 2. CONG TY TNHH MTV MASAN HAI DUONG Supply saturated steam 40 tons/ h for the noodle factory. **3. CONG TY TNHH MTV MASAN MIEN BAC** Supply saturated steam 40 tons/ h for the chili sauce factory. 4. CONG TY TNHH MTV CONG NGHE THUC PHAM VIET TIEN Supply saturated steam 6 tons/ h for the chili sauce factory.



5. CONG TY CO PHAN TRIBECO MIEN BAC Supply saturated steam 12 tons/ h for the soft drink factory. 6. CONG TY CO PHAN TRIBECO BINH DUONG Supply saturated steam 25 tons/ h for the soft drink factory.



7. CONG TY TNHH MTV CAO SU ĐAK LAK Supply thermal 8 tons/ h for the rubber factory.



8. CONG TY CO PHAN CONG NGHE THUC PHAM CHAU A (MICOEM) Supply saturated steam 20 tons / h for the noodle factory.



9. CONG TY CO PHAN TKC KRAFT Supply saturated steam 15 tons/ h for the paper factory.



**10. CONG TY CO PHAN NAM AN** Supply saturated steam 15 tons/ h



11. CONG TY CO PHAN THUC PHAM A CHAU (MI GAU DO) Supply saturated steam 4 tons/ h



12. CONG TY CO PHAN MONDELEZ KINH DO VIET NAM Supply saturated steam 6 tons in BINH DUONG province and HUNG YEN province



PARTNERS

Power and productivity for a better world™





































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