REFLECTIONS ON FUTURE DEVELOPMENT OF INDEPENDENT REFINERIES FROM CHAMBROAD’ S PERSPECTIVE

— PRODUCE SATISFYING GOODS FOR CUSTOMERS AND CULTIVATE USEFUL TALENTS FOR SOCIETY —

SHANDONG CHAMBROAD PETROCHEMICALS CO., LTD
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PART 01 CHAMBROAD INTRODUCTION
SHANDONG CHAMBROAD HOLDING CO., LTD

Shandong Chambroad Holding Co., Ltd is located in Boxing, Shandong Province. The establishment preparation of Chambroad started in 1988 and the construction was finished in 1991. Chambroad is a large privately-run enterprise engaged in industries such as petrochemicals, fine chemicals culture & art, education, modern service, modern agriculture and strategic investment and other industries. With 2.097 billion yuan tax paid, Shandong Chambroad Holding Co., Ltd achieves a sales revenue of 53.1 billion yuan in 2016.

SHANDONG CHAMBROAD PETROCHEMICALS CO., LTD

Founded in 1988, Shandong Chambroad Petrochemicals Co., Ltd is a subsidiary company of Shandong Chambroad Holding Co., Ltd. After 20 years’ trials and hardships, the company has become a giant private petrochemical enterprise focusing on petroleum chemicals, also integrating petroleum refining and synthesis of polymer materials. Chambroad Holding ranks as the 266th of China’s Top 500 Enterprises, the 40th of China’s Top 500 Private Manufacturing Enterprises, the 8th of China’s Top 500 Chemical Enterprises.

CHAMBROAD RESPONSIBILITY

Adhering to corporate responsibility “serve the country with industry and serve the society” and mission “produce satisfying products for customers and cultivate useful talents for society”, Chambroad established a modern industrial information system to boost the national green low-carbon policy. Focusing on market, Chambroad petrochemicals is dedicated to become a provider for valuable petrochemical solutions.
In 1988, Boxing Lubrication Oil& Grease Factory was planned to be constructed. In 1991, it began to construct.

In 1988

In 1996, the first Chambroad gasoline station was put into use.

In 1996

In 2004, it was renamed Shandong Chambroad Petrochemicals Co., Ltd officially.

In 2004

In 2010, 5 billion yuan was invested and used for new petrochemical project, indicating we set foot in petrochemical.

In 2010

In 1995, Ma Yunsheng was transferred to be the head of Lubrication Oil& Grease Factory.

In 1995

In 2000, Shandong Chambroad Group was founded. Since then, we treat our enterprise as the society’s enterprise.

In 2000

In 2005, Shandong Chambroad Group was renamed Shandong Chambroad Holding Co., Ltd.

In 2005

In 2012, Shandong Bohua High-efficiency Ecological Agricultural Technology Company is founded.

In 2012

Chambroad ranked the 266th of China’s Top 500 Enterprises, the 128th of China’s Manufacturing Enterprises, the 8th of China’s Top 500 Chemical Enterprises, the 65th of China’s Top 500 Private Enterprise.

In 2013

In 2013, the 200 million yuan-research institute was put into use.

In 2016
Industry Introduction

One Core: Shandong Chambroad Holding Co., Ltd

- Modern Services
- Modern Logistics
- Petrochemicals
- Ecological Environment
- New Material
- Real Estate
- Modern Ecological Agriculture
- Culture & Art & Education
- Investment
- Modern Agriculture
First Processing Capacity

• The company can integrate a first processing capacity, i.e. CDU capacity by 5,800,000 tons/year, including a set of CDU with a capacity of 2.3 million tons/year (1.5 million tons/year high grade asphalt), and a set of CDU with a capacity of 3.5 million tons/year (2.3 million tons/year high grade asphalt).

Second Processing Capacity

• The second processing capacity (FCC and Delayed Coking) reached 4.45 million tons per year, including a set of 2 million tons/year FCC unit, FCC supporting unit with a capacity of 650,000 tons/year. Delayed coking has 2 sets of units with the capacity of 800,000 tons/year and 1 million tons/year respectively.

Third Processing Capacity

• The third processing capacity (gasoline hydrogenation, diesel hydrogenation, wax oil hydrogenation) has reached 4.8 million tons/year, including a 300,000 tons/year hydrogenation unit, an 800,000 tons/year hydrarefining unit and 15,000 scf/h hydrogen unit, an 800,000 tons/year diesel reforming unit and 15,000 scf/h hydrogen unit, a 600,000 tons/year gasoline hydrodesulfurization unit, a 1 million tons/year light oil modifying aromatics unit, a 400,000 tons/year naphtha hydrogenation unit, a 250,000 tons/year mix alkane dehydrogenation unit, a 450,000 gas separation unit, a 50,000 tons/year distillation gasoline aromatization unit, a 60,000 tons/year isobutylene unit, a 40,000 tons/year dry gas producing ethylbenzene unit and a 50,000 tons/year HIIR unit.

Imported Oil & Products

• Products include 3 sections, oil products, petrochemicals, and materials. Chambroad has achieved National Standard five years ahead of the whole country, and is the first independent refinery to implement clean gasoline. In 2015, Chambroad has acquire 3,310,000 tons crude oil importing quota. In 2013, we launched Chambroad Petrochemicals Commerce Platform, which enables us to be the first E-Commerce Platform among Shangdong independent refineries.
Current Status of Pipelines and Gasoline Stations

3 Pipelines for Use:
- Yantai to Zibo pipeline - In Use;
- Dongjiakou to Chambroad - Under Construction, is to be put into use by April of 2018
- Rizhao to Chambroad - Under Construction

A one million m³ crude oil bonded tank nearby the refinery is to be put into use in March 2018.

250 gasoline station terminals, among which over 200 are self-run, 48 are chain stations.
Chambroad Chemical Research Institute was established in December 2011. It is the enterprise technology center, high-tech enterprises in Shandong Province. It is to carry out scientific and technological research and innovation work, and is committed to providing customers with system solutions program and efficient service and more optimized products and services. Chambroad Chemical Research Institute centers on the research of petrochemicals, fine chemicals, sulfur chemistry, functional materials, biotechnology, analysis and separation technology, chemical design and simulation technology, environmental protection and comprehensive utilization of waste water resources and other fields.

Adhering to the R & D philosophy of "improving today, innovating tomorrow, studying the day after tomorrow, getting ready for the future", we constantly enhance our R & D strength, and actively integrate the advantages of resources, build talent development, technology research and development, industrial incubator platform, and export independent property rights of science and make contribution to technology development and scientific and technological progress.
Lead Industry Standard & Develop High-Performance Fuel

101# Blue Power

Motor Clean Gasoline

Diesel

Motor Clean Diesel

Blend Stocks of Ethanol Gasoline for Motor Vehicle

- First Chinese enterprise launch out clean gasoline and diesel
- To build China's first brand of private oil terminal services
- First high-end oil manufacturing and application evaluation center in China
- China's first enterprise to reach the National-VI B standard, 6 years ahead of national standard
Focus on Quality to Produce High-end Products

- **C3**: Propane, Propene for industrial use
- **C4**: Isobutane, Isobutene, Butene-1, LPG
- **C5**: Isopentane, Neopentane, MTBE, Pentane Vesicant
- **C6**: Food Grade N-hexane, Iso-hexane
- **Aromatic**: Petroleum Toluene, Petrobenzene, Ethylbenzene

Take double hydrocarbon as the core, Complete the extension from fuel refinery to the raw material refinery, and lay the foundation for the functional material plate.
Break International Monopoly to Develop High-performance Materials

- The sales of IIR ranked 2nd in China in 2016
- As the world’s exclusive product, TBIR is with the independent intellectual property rights to fill in the technological blanks in China
- The sales of “Haiyu” asphalt ranked 4th among Chinese independent refinery in 2016
- The first 10,000-ton PB-A unit in the world
PART 02  CURRENT INDUSTRY STATUS
Macro Environment

**Political Environment**
- “Road & Belt” Strategic Layout
- “13th Five Year” National new industry strategy to encourage the development of high-performance membrane materials, engineering plastics and other new functional materials

**Economic Environment**
- Global warming and other international issues raise higher demands to China and society development
- New demands are raised as for safety and environmental protection, energy saving, comprehensive utilization of resources, social responsibility and other aspects of new demands
- Industry 4.0 drives the energy efficiency management in manufacturing and digital innovation in automation
- Under the “New Normal”, the country encourages rapid development of private enterprises, and many good policies continue to promulgate
- The new mechanism for refined oil pricing has been loosed, transforming from resourcing monopoly to open resourcing
- Under the condition of old and new growth drivers converting and structural supply shortage, the demands for high-end chemicals and high-performance materials will maintain a rapid growth
- Our technology research has achieved breakthroughs and innovation, some of the technology can be comparable to Shell, ExxonMobil and other international enterprises
- Oil processing technology demands faster technology and product upgrading

**Social Environment**

**Technologic Environment**
**Industrial Environment**

### Supplier
- Acquire the crude oil importing quota which can assure the supply of high grade crude oil
- Establish trading and strategic cooperation relationship with major oil companies to assure the supply channel
- Ports, warehouses and other facilities are improving day by day, and modern oil transportation like pipelines continues to improve.

### Customer
- Gas station and other terminal competition continue to become standardized, and oil quality is upgrading while channel oil sales has seen a steady growth.
- The market of high-end chemical products and high-performance materials are in short supply. The market for high-performance fuel and special oil is urgently to be explored.

### Competitor
- Restricted by the national environmental policy, production scale, raw material sources and other factors, some enterprises gradually withdraw from the petrochemical industry.
- Petrochemical enterprises shall establish a strategic partnership relationship, and cooperate in strengths to mutually benefit rather than competing with each other.

### NewComer
- Establish good strategic partnership with the backbone petrochemical enterprises to jointly cope with the international oil giant competition.
- New chemical materials industry has great capital investment, strong technical barriers and big channel construction difficulty, then has few pretenders relatively.

### Substitute
- There is a big gap of car ownership between China and Occident, the potential of oil demand huge and the room for growth larger.
- The Industry appears structural adjustment, low-end product surplus, insufficient supply of high-end products, the development of high-end chemicals and new materials become a trend.
Transform to Upgrade Industry

Transform Structure
(Product & Industry)
- Maximum of Resource Value
- The globalization of external asset allocation

Transform Mode
(Business & Management)
- Manufacturing to Service
- Resources to Consumption
- Entity to Capital
- Low-end to High end

Innovation
( Technology & Mechanism )
- High-end Product R&D
- Standardization of business process
- Diversification of financial tools
- Delicacy of management system
Product and Industry Restructuring

New Materials
- The serialization of High-performance Material

Chemicals
- The monomerization and high purification of high-end Chemicals

Oil Products
- The serialization and necessity of high-performance fuel
To highly match the long-term business plans and production plans and promote production and marketing plan management.

Use PIMS to achieve plant operation optimization and to explore the potential value.

Combine the 2 markets of product and crude oil, through the analysis of spread and market, to reasonably allocate resources and maximize resource value.

Efficiently combine the futures and spot market. Make the hedging plan for raw materials according to market.

Integrate "industry + Internet" mode to create the online market and offline market. The online market integrates resources, and the offline one expands channels, combining yin and yang, complement each other.
Fully Accomplish Innovation

- Technologic innovation aiming to extend industrial chain and optimize industrial structure
- Management innovation based on the result to optimize management process and reduce internal consumption
- Business innovation by means of innovating business mode and building a systematic ecosphere
- The intelligence of equipment body, operation, management projects.
With the highlight of domestic refining overcapacity, the bargain power of the industrial chain transfers from the upstream to the downstream retail terminal, the scale of the terminal layout has become the central competitiveness of refining enterprises.
Enforce HR Security

Talents

- Valuable assets and sources of innovation.
- China's demographic advantage has shifted from a scale advantage to a structural one.

Training

- Talent resources are always limited.
- Training is the most effective and realistic means of maximizing the value of talent resources.
Build Excellent Brand Culture

Social Responsibility

- Culture is the invisible value and cohesion of the enterprise.

Brand Influences

- Guide the daily operations by corporate culture, deliver values and missions, and improve the efficiency from a virtual perspective.
Build First Class Product, Service and Brand

First Class Products
First Class Service
First Class Technology
First Class Standard

Consciousness
Technology
Responsibility
Environmental Protection
Benevolence & Filial Piety

产品品牌

京博蓝动力
航韵"船燃
海韵沥青
墨源
MOYUAN
山东华聚
PART 04 FUTURE TARGETS
Target for Future Development Direction

To be

- High-performance Fuel
- High-end Chemicals
- High-performance Materials

Three-in-One Solution Provider

- Focus on energy efficiency & innovation management
- Build smart platform for internet+ and business
- Take resources monomerization & new materials as a direction

Take the transformation of profit growth mode to adjust the industrial structure and optimize resource layout as the main line

- Take profitability continues to improve as the core
- Take delicacy and standard management as the means
- Take industrial intelligence manufacturing as guarantee

- Take overall risk control as the premise, safety, environmental protection, quality as the foundation
Create a Three-in-One Solution Provider

1. **Modern Petrochemical Enterprise**
   Build modern petrochemical enterprise, and create the basic management system centering on Performance Excellence.

2. **Industry Demonstration Plant**
   Take the whole company as an innovation base to apply and show new technology. Through upstream and downstream cooperation, to achieve the advantages of Chambroad and industry sharing.

3. **Provider of Valuable Solutions**
   Transform from the "production and sales-oriented" business model to the "customer and market-oriented" business model, transform from “manufacturing” to “services”, transform from “providing products” to “providing solutions”.

Adhere to Open & win-win Cooperation

1. To reasonably allocate resources based on the principles of coordination, openness and altruism.

2. Take altruism as the core to seek profit win-win cooperation, innovate cooperation mode, integrate the downstream and upstream industries, and build and optimize the cooperation relationship and the whole industries.

3. Achieve the second and deep cooperation of cross-border industrial chain resources through the cooperation of core business chains of core business in an open mind. Improve the integration of industrial chains while achieving a win-win situation. To build a new enterprise eco-business mode/eco-consortium and achieve the sustainable and healthy development of various enterprises in the industrial chain.
Build Sustainable Strong Enterprise

Manage Today
Innovate Tomorrow
Train for the Day
after Tomorrow
Culture for Future