Chinese Steel Manufacture:
Intelligent Manufacture and
Green Steel under Industrial 4.0

Catherine Zhang, CEO Rockcheck Steel Group
25th September, 2019
CONTENTS

01 Rockcheck Steel Group
02 Steel Industry in China
03 Intelligent Manufacture
04 Green Development
With 30 years of development, Rockcheck have grown into a diversified group with successful business in iron and steel manufacture, financial technology, heath and culture.
The total output of crude steel in the world was 1.08 billion tons, while China accounting for 51.3%.

China is the largest importer of iron ore taking in 65.3% of the world's total per year.
The Trend Of China’s Iron & Steel Industry

Two periods & Five stages

1. Quantity period
   - The increase in quantity
   - The decrease in quantity

2. Transition

3. High-quality period
   - High quality development
   - Low carbon production
Innovation, Coordination, Green, Openness and Sharing
Green and Low carbon

- Low energy consumption
- Low pollution
- Low emissions
Rockcheck:
A Green Manufacturer
Green Steel Practices

- Pursues ultra-low emissions
- Zero extraction of underground water; zero disposal of waste water
- 100% recycle of steel slags
- Recycled heating system provide heats to neighboring districts
- Invested 650 Million USD on energy conservation and emissions reductions
Highlights of Green Steel

01 Energy consumption
02 Low Carbon Emission
03 Environmental Protection
04 Solid Waste Recycling
Green development and Co-exist with the city

The green coverage of the factory is 40%.

In 2018, Rockcheck received the award of “National Advanced Green Enterprise”. 
300 million
(43 million USD)

- Build large processing plant for waste water from nearby villages into drinkable water
- Transform into useable water for production.

🏆 The first metallurgical company to implement water recycle system, recognized by the Ministry of Environmental Protection
Project built to send heat into residence in our neighboring district, began in October 2018.

Over 1.2 million square meters of houses are being heated.

Total of 3 million sqm will be covered, when the project is completed.
Industrial Tourism

HARD POWER
Iron and steel

SOFT POWER
Culture

“Time Memory” Museum: Established in 2013
AAA travelling destination in Tianjin
Intelligent Manufacturing
What is “Intelligent manufacturing”? 

Goal of Intelligent manufacturing:
- improve quality, increase efficiency,
- reduce costs, and respond quickly as to enhance competitiveness.

“manufacturing ”
+ 
“Intelligent”
Data
Locate and connect various data sources to achieve data gathering

Knowledge
Analyze processed data deeply to achieve the extraction and utilization of knowledge

Action
Effectively integrate knowledge and data from different sources for service
Implementation of Intelligent manufacturing in steel enterprises

- Strengthening the foundation of digitalization
- Enhancing the basis root of networking
- Improving the intelligence level

Industry 4.0
The Effect of Integration of Informatization and Industrialization

- ERP utilize data to improve manufacturing performance
- iMES with Real-time monitoring process analysis
- Intelligent production scheduling
- Car-free smart logistics
- Work stations linked with mobile phones
- Artificial intelligence and robotics
Intelligent manufacturing achievements

Received the prestigious award for “metallurgical advanced technology of 2018”
Our Products and Applications

• High quality and special steel has accounted for 60% total output

• High-strength bridge cable steel was applied to the Hong Kong-Macao Bridge

• Rated as a “Most competitive Enterprise” in steel industry by China Iron and Steel Association
Global Collaborations

Under the OBOR Initiative, the steel industry has huge potential to grow and presents an attractive and growing market.

"The Belt and Road"

30 countries
The Future Steel is going to be intelligent and green

“Let’s protect the ecological environment and guide a new pathway for a green steel industry”
THANK YOU