

Status quo and development trends on China foundry industry

China Foundry Association

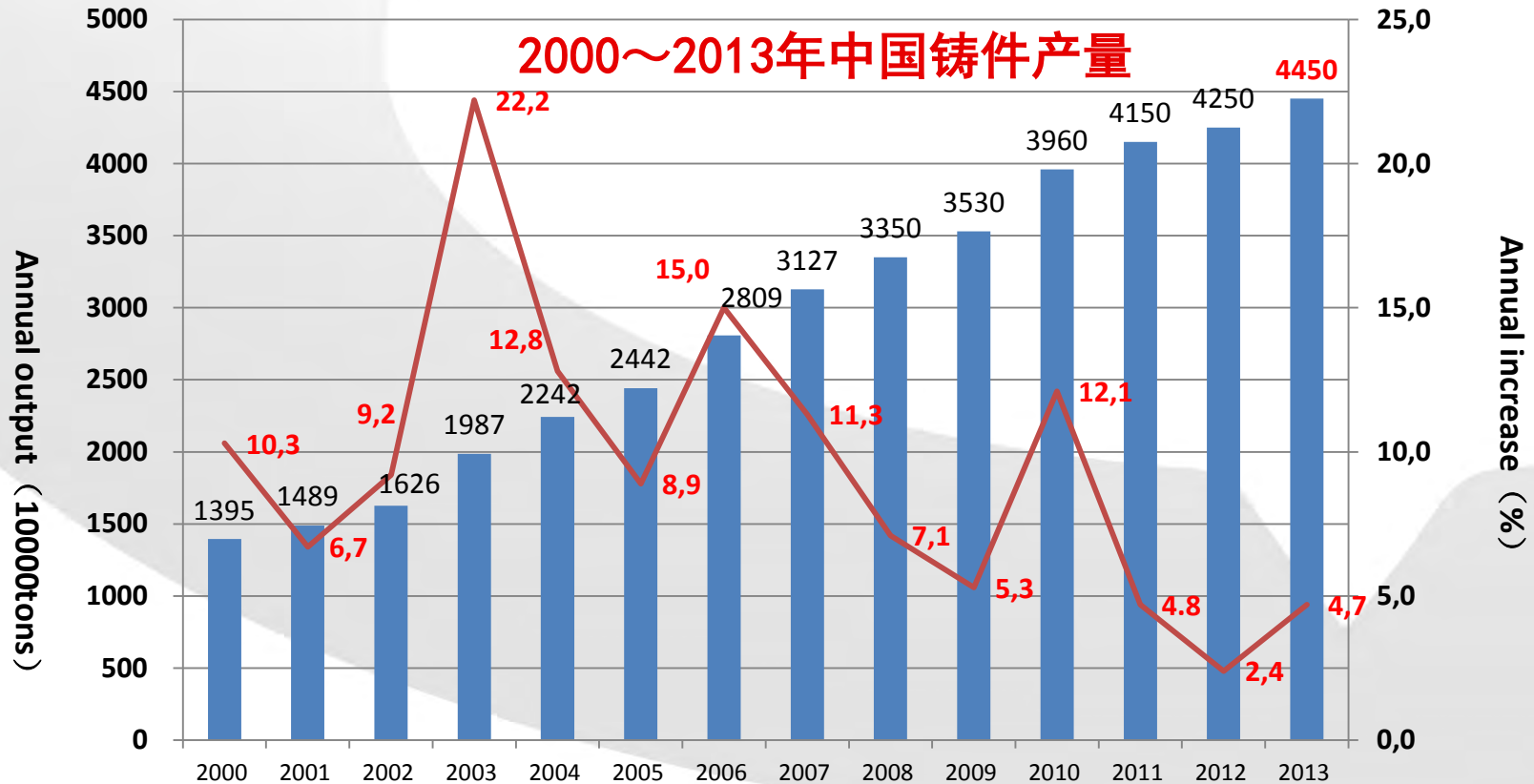
Wen Ping

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Maine Contents

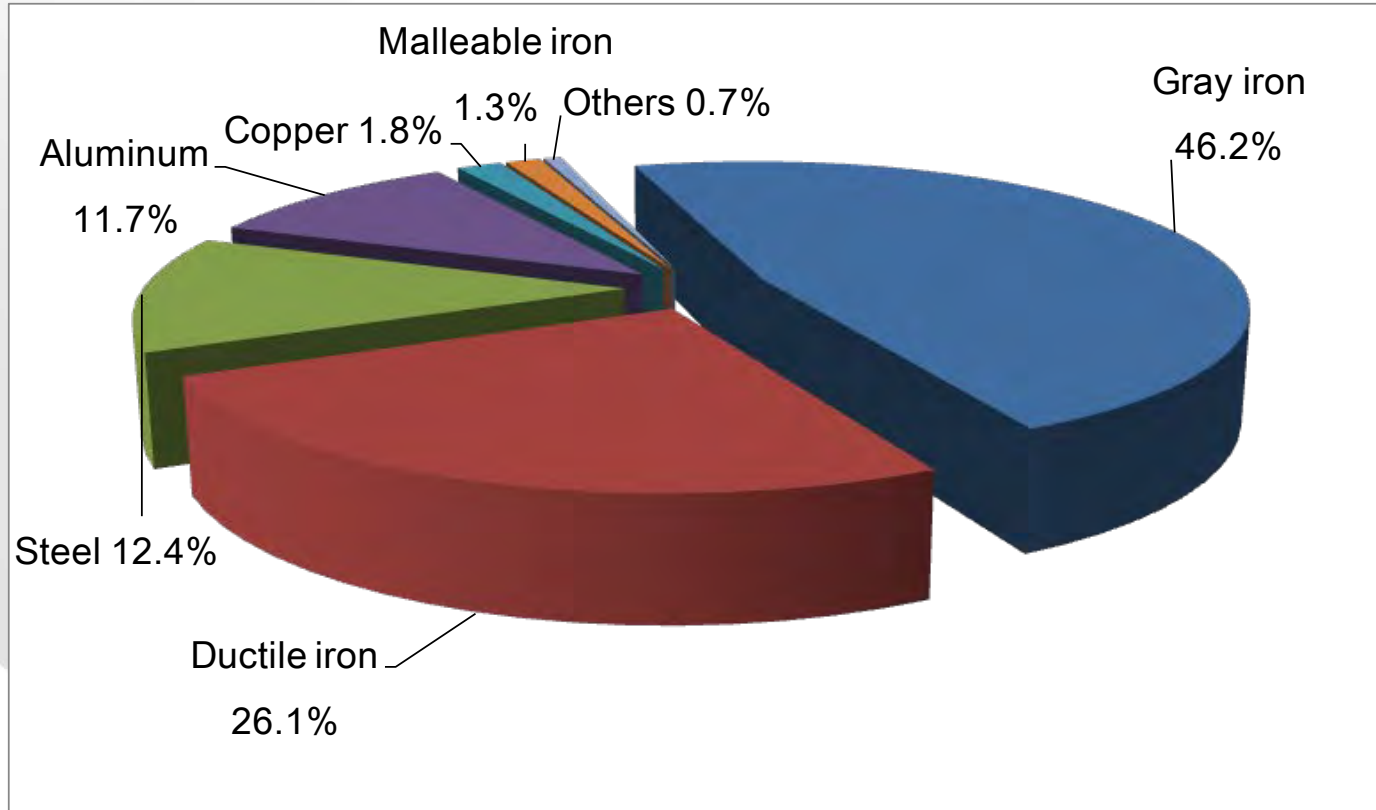
- 1. Analysis on the situation of Chinese foundry industry**
- 2. Impact on the industry of implementing the *Access to Foundry Industry***
- 3. The future need for foundry equipment of China**

1.The Situation and Development Trend



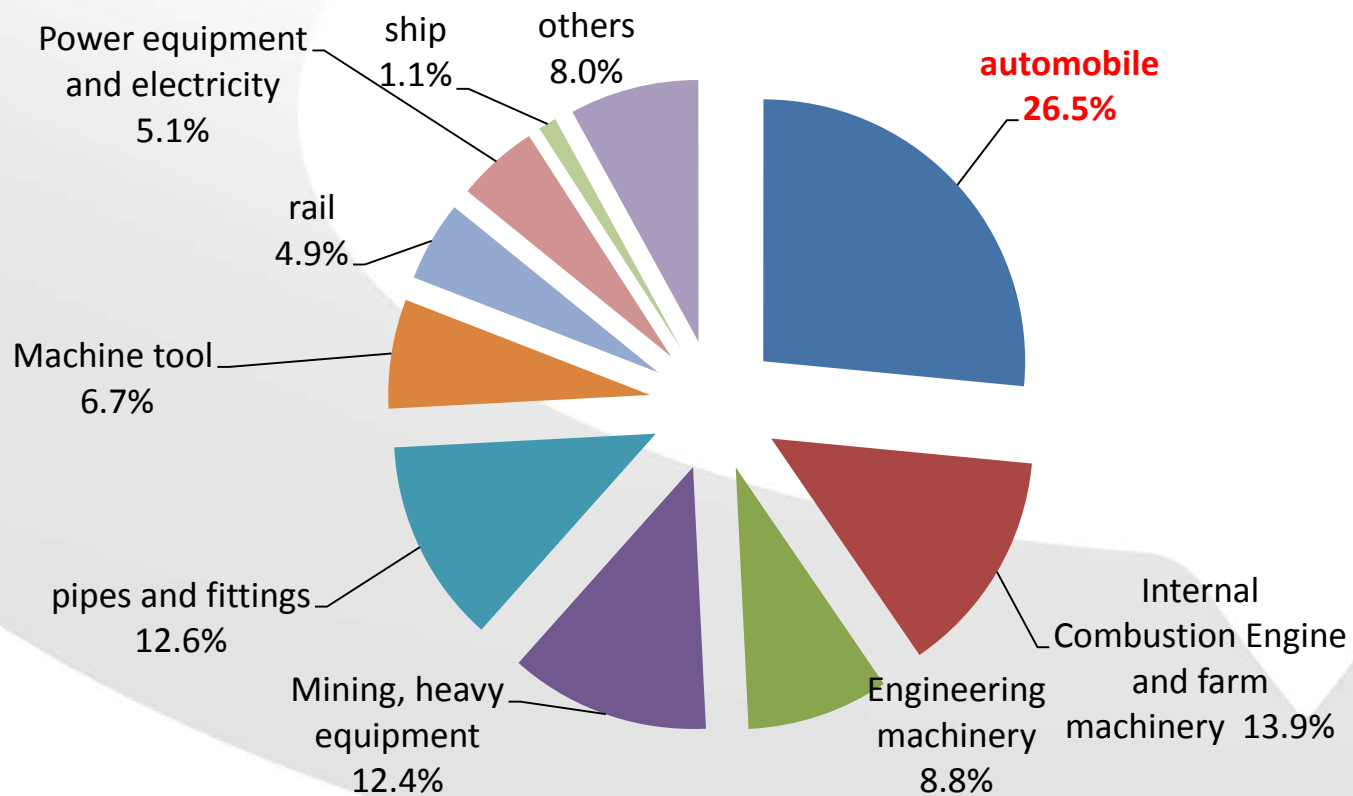
The average annual increase in 2001~2010 was 11%
 Afterwards, growth slows down.

➤ Castings breakdown in materials in 2013



Ferrous metals accounted for about 85%, non-ferrous metals accounted for about 14%; **Changes**, aluminum production increased by 16% compared to 2013, ductile iron production increased by 6.4% compared to 2013

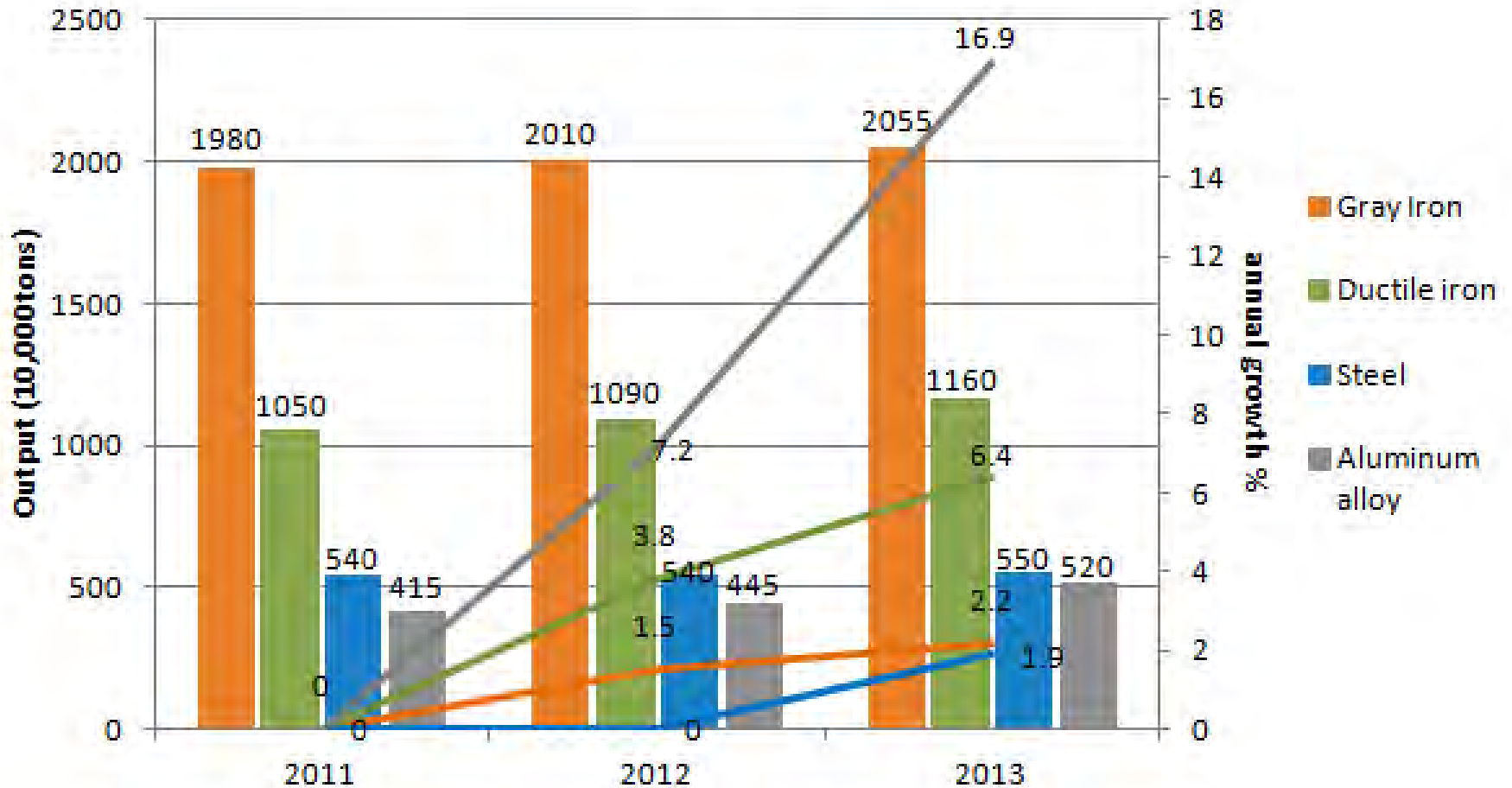
Castings demand breakdown in 2013



Output and breakdown by materials in 2011 and 2013

Cast materials	Gray iron	Ductile iron	Malleable iron	Steel	Aluminum alloy	Copper alloy	Others	Total
2011 (10,000 tons)	1,980	1,050	60	540	415	75	30	4,150
2012 (10,000 tons)	2,010	1,090	60	540	445	75	30	4,250
2013 (10,000 tons)	2055	1160	60	550	520	75	30	4,450

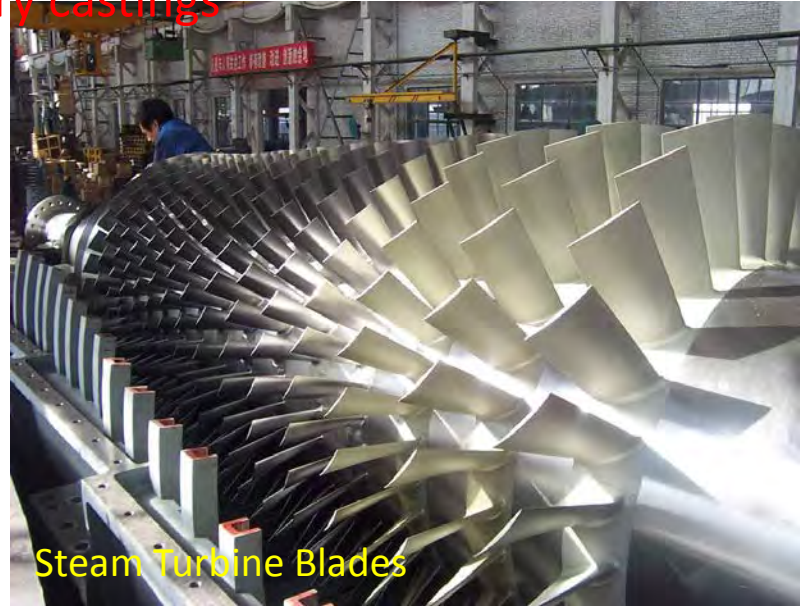
Output and breakdown by materials 2011-2013



High-end equipment manufacturing industry castings



High-thrust rocket castings



Steam Turbine Blades



Manned space titanium alloy castings



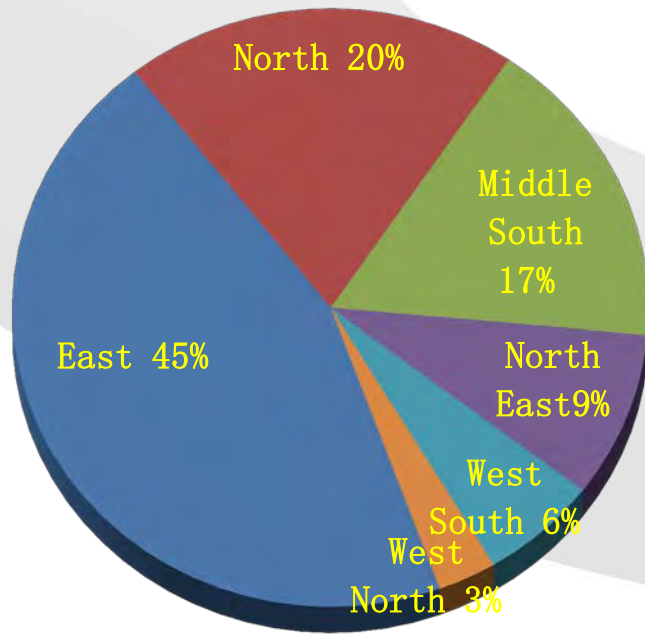
Stainless steel casting of turbine runner

CFA Overview

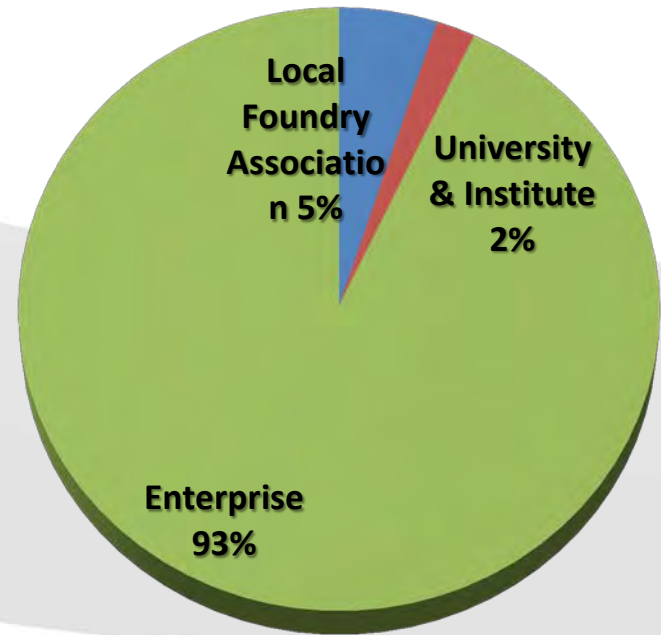
Members: 8,400

Direct 1,400 (enterprise: 1,340 ,organization member 60)

Indirect 8,000 (among organization member)



Members distribute ratio as region



Members distribute ratio as property

2. Impact of the *Access to Foundry Industry*

To strengthen the management and standardize the market order, the *Access to Foundry Industry* was issued by Ministry of Industry and Information Technology in May, 2013. It covers 9 aspects:

- Construction conditions and layout
- production process
- production equipment
- Company scale
- product quality
- energy consumption
- environment protection and resource comprehensive utilization
- job health, safety and protection
- personnel ability

- the aim of implementation of the *Access to Foundry Industry*
- promoting the structural adjustment and upgrading of foundry industry
 - promoting the energy-saving and emission reduction, reduce the outdated capacity
 - containing low level and repeated construction, avoiding blind expansion, protecting the environment, leading the sustainable development of the industry.

The *Access to Foundry Industry* is an industrial leading policy, the different local management level can carry out it by policy guiding and market driving in line with local conditions.

➤ Items Related with Foundry Equipment

- Enterprises should be equipped with various kinds of the necessary production equipment and testing equipment matching with its production capacity, and effective sound insulation and noise reduction, ventilation, dust/smoke removal systems.
- The sand mold enterprise should be equipped with sand reclamation equipment.

sand reclamation ratio: sodium silicate sand $\geq 60\%$,
Alkaline phenolic resin sand $\geq 70\%$, furan resin-sand $\geq 90\%$,
clay sand $\geq 95\%$.

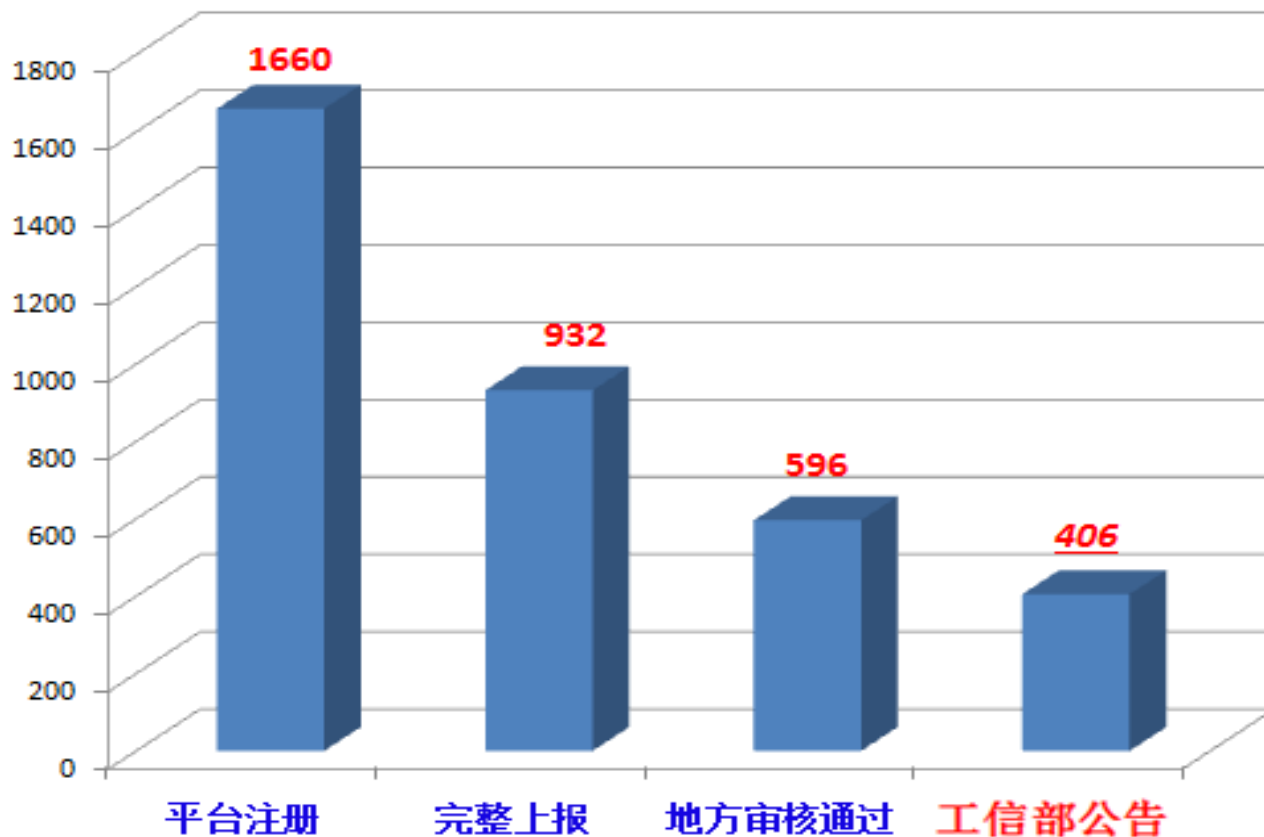
- **Enterprises should establish energy management system in line with GB/T 15587-2008.**

The melting equipment should meet the energy consumption indicators requirements:

- **Cupola's energy consumption indicators of melting cast iron**
- **energy consumption indicators of no-core medium frequency induction furnace of melting cast iron**
- **energy consumption indicators of steel melting Induction furnace**
- **energy consumption indicators of induction furnace melting Aluminum alloy**
- **energy consumption indicators of steelmaking electric arc furnace**
- **energy consumption indicators of resistance furnace melting aluminum alloy**
- **energy consumption indicators of gas furnace melting aluminum alloy**

The recognition work for the Access in 2013 has finished and is currently in the recheck period. The application for recognition in 2014 is about to start.

2013年铸造企业准入申报情况



3.China foundry equipment demand in the future

- Advanced and efficient automatic mold making, core making and cleaning equipment
- Efficient and energy-saving melting, sand processing and reclamation equipment
- On-site application of various kinds of robots
- Aluminum alloy melting and die-casting equipment
- Dedusting equipment
- Online casting detection, testing and analyzing devices

A new round of quality, efficiency and technology improvement of China's foundry industry is under way.

- **Industrial restructuring, upgrading will accelerate, small and micro enterprises will exit the market. Enterprises will develop to large-scale and conglomeration, the industry will go to clustering and intensive development.**
- **Foundry enterprises' process, equipment and technology level will improve greatly, promoting the application of automatic and intelligent casting equipment.**
- **The technical innovation in energy conservation and emission reduction will be strengthened greatly, boosting the overall environmental protection level.**
- **Promoting the overall improvement of casting quality.**

Thank you!