1. Steel demand outlook is quite strong in the long term
2. Material substitution and steel
3. Factors that will improve the competitiveness of the steel industry
4. Steelmaking capacity and impacts for the future of the industry
5. The sustainable development of the steel industry
6. The need to ensure open markets for steel
7. The role of state-owned enterprises in the steel industry
8. Issues for discussion
1. Introduction

• Steel: bright future as a material but uncertain outlook as an industry
  – Steel will remain one of the most important materials for modern societies;
  – However, steel industry faces huge challenges: overcapacity, volatility of raw materials and energy markets, risks of protectionist policies...

• This presentation aims to:
  – Highlight some future trends for the steel industry
  – Raise main questions on the viability of the steel industry in the long term

2. Steel demand prospects

• Global steel demand is expected to increase to 2.3 billion tonnes in 2025 (CAGR of 3.7%)

![Diagram showing steel demand prospects](source: Metal Bulletin Research)
2. Steel demand prospects

- Slowdown of global steel demand growth driven by:
  - Reduction of China’s contribution with slower and more service-oriented GDP growth,
  - Modest steel demand growth in advanced economies,
  - Less quantity of steel per unit in several industries.

- 90% of the expected increase in 2011-2025 from:
  - Construction driven by residential and infrastructure projects in emerging economies (68% of the increase),
  - Mechanical engineering (13% of the increase),
  - Pipelines, “oil country tubular goods” (OCTG) and other tubes (9% of the increase).

3. Material substitution and steel

- The most viable substitute is aluminium
- Research by Allwood and Cullen (2012):
  - Wood, stone and concrete other substitutes but with less favourable properties than steel.
  - Trends in the way steel is made and used:
    - Using less steel through improved product design,
    - Reducing yield losses,
    - Longer life products.
4. Factors that will drive the competitiveness of the steel industry

Blast furnace and EAF cost drivers in September 2012
% of total operating cost

<table>
<thead>
<tr>
<th></th>
<th>BF/BOF</th>
<th>EAF</th>
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<tr>
<td>Iron Ore</td>
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<td>Coking Coal</td>
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<td>Total Raw Materials</td>
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<td>Energy</td>
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<tr>
<td>Consumables</td>
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<td>10.1</td>
</tr>
<tr>
<td>Services</td>
<td>8.2</td>
<td>4.4</td>
</tr>
</tbody>
</table>

Sources: McLellan, OECD

Operating costs for BF/BOF processes
USD per tonne of billet produced

Sources: McLellan, OECD
4. Factors that will drive the competitiveness of the steel industry

International natural gas prices
USD per 1000m³

5. Steelmaking capacity

- **Further growth expected in steelmaking capacity.**
  - It would increase the risk of over-supply, trade frictions, low prices and weak profitability.
  - A problem particularly for multi-plant companies.

- Principal challenges for policy makers:
  - To **discourage market-distorting practices** that foster the installation or maintenance of inefficient capacity.
  - To **enhance trade in steel** which is a way to offset the need for building new capacity in other regions.
5. Sustainable development of the steel industry

• 2\textsuperscript{nd} largest industrial user of energy
• 1\textsuperscript{st} largest industrial CO\textsubscript{2} emitter
• Large progresses made but much more to be done:
  – Between 1975 and 2004, energy efficiency increased by almost 50% (driven by capital stock turnover, growing share of electric arc furnaces, process innovation).
  – Carbon Capture and Storage (CCS) and breakthrough iron and steel-making technologies will be needed.
• Other challenges: how to reconcile social, environmental and commercial (e.g. land acquisition problems for new steel plants)

7. The need to preserve open markets for steel

• Protectionist policies and subsidies can exacerbate crises in steel, notably:
  – Non-tariff barriers on steel imports,
  – Export restrictions of raw materials,
  – Measures that favour over-capacity.
• These measures can lead to the adoption of similar policies in competing markets
• The health of the steel industry will depend on:
  – Policies that keep markets open and;
  – Policies that do not shift the burden of adjustment to other countries.
8. Ensuring competitive neutrality between private and state-owned enterprises (SOE)

- There are 35 SOEs among the 128 largest steelmakers representing 29% of the crude steel production of these companies.
- SOEs can potentially enjoy significant competitive advantages over competitors.
- These advantages do not exist in countries that implement “competitive neutrality”

Selected issues for discussion

- **Steel demand**: role of energy, impact of industrial policies?
- **Material substitution**: in which sectors, products?
- **Competitiveness**: what are the most promising technologies? How to manage operations in volatile market conditions?
- **Capacity**: where new capacity is needed or should be avoided?
- **Sustainable development**: What role for governments to help meet climate change goals? What is the role of steel in building a green economy? How to reconcile the social, environmental and commercial objectives?
- **Open markets for steel**: Is protectionism increasing in the steel industry? What trade measures are of the most concern?
- **Competitive neutrality between POEs and SOEs**: What are the main concerns regarding SOEs? How can the Steel Committee work to address these concerns?