Charcoal Sustainability Protocol

The Protocol was signed on April 3rd, 2012, by the Companies:

- Aperam South America
- ArcelorMittal
- Gerdau
- Siderúrgica Norte Brasil - Sinobras
- Thyssenkrupp CSA Siderúrgica do Atlântico
- Usiminas
- Vallourec & Sumitomo Tubos do Brasil
- V&M do Brasil
- Villares Metals
- Votorantim Siderurgia
Sustainability Protocol of Charcoal

1. Operate according to the principles of sustainable development and in perfect consonance with the law, considering in an integrated and harmonious way, the social and economical environmental aspects;

2. Work with the production chain in order to eliminate practices and activities that violate labor rights or cause damage to the environment;

3. Maintain commercial relationships only with companies in full compliance with all legal social-environmental requirements;

4. Demand the documental requirements, under the law, from producers of charcoal and derived products;

5. Set up a partnership with the Public Power to develop a social and environmental awareness program for charcoal suppliers;

6. Conclude, within 4 years, full compliance of forest stocks with the respective production demands by means of own plantation or outsourced plantation, provided in accordance with the legal requirements;

7. Work in partnership with the Government continuing the development and implementation of the technology to capture and flare of gases generated from charcoal production process, so as to reduce emissions of greenhouse gases;

8. Present periodically the development of the actions listed above in the steel industry’s Sustainability Report.
Actions Performed

• 2012 / 2013
Sustainable Development

• Operate according to the principles of sustainable development and in perfect consonance with the law, considering in an integrated and harmonious way, the social and economic environmental aspects.

All member companies of the Brazil Steel Institute seek constantly to act in accordance with current legislation and in a sustainable way, considering the environmental, social and economic aspects.

Information about actions and sustainability indicators of the sector:


. Sustainability Reports of the Companies.
Sustainability of the Chain from Pig Iron to Charcoal

• Work with the production chain in order to eliminate practices and activities that violate labor rights or cause damage to the environment

• Maintain commercial relationships only with companies in full compliance with all legal social-environmental requirements

• Demand the documental requirements, under the law, from producers of charcoal and derived products

  . Individual initiative of the companies

  . Conceptual model to improve sustainability of pig iron production
Individual Initiative of the Companies

• 100% of the companies have supplier qualification programs.

• Systematic level evaluation of compliance with social and environmental requirements to the pig iron and charcoal suppliers.

• Monitoring of Service Providers’ documents

• Contractual requirement to comply with the rights labor and legislation to suppliers and service providers.

• Suppliers training, including issues related to safety, environment and legislation.
Sustainability of the Chain from Pig Iron to Charcoal

• Work with the production chain in order to eliminate practices and activities that violate labor rights or cause damage to the environment

• Maintain commercial relationships only with companies in full compliance with all legal social-environmental requirements

• Demand the documental requirements, under the law, from producers of charcoal and derived products

. Individual initiative of the companies

. Conceptual model to improve sustainability of pig iron production
Concerned parties: Companies, ONGs, Public agencies, setorial entities.

**NORMATIZATION ABNT**

Elaboration of technical norm with requirements of sustainability to be complied.

Certification of Third part Credentialed Institutions

Based on the requirements defined in the technical norm - Gradual and progressive process

Inducing Agentes Ore Provider

Integrated and Independent Pig Iron Producing Companies

Inducing Agentes Pig Iron Consumer
Certification Modules for Pig Iron Producers

**Module 1**
- Charcoal Origin
  - Control of legal charcoal origin
  - Labor regime at pig iron and charcoal production
  - Environmental permit

**Module 2**
- Good Practices
  - Charcoal suppliers management with audits
  - Self supplies plan
  - Working conditions in pig iron production
  - Environmental requirements in pig iron production (residues, wastewater and emissions)

**Module 3**
- Sustainability
  - Charcoal from renewable sources
  - Environmental requirements in pig iron production (wastewater, atmospheric emissions and noises)
  - Management systems of environment, health and security.
Advantages of certification model

• Grant more credibility to the process

• Facilitate the credentialing as certification agencies of any entity having recognized expertise in the subject, democratizing the process.

• Improving the sustainability indicators of pig iron and charcoal production.
Certification Model: Actions And First Results

- Establishment of a Working Group to define strategies and implementation of the necessary actions to attend the Protocol.

- Preparation of a project proposal of technical norm (requirements).

- Discussions with MMA, MDIC and BNDES to obtain differentiated financing lines for research and projects associated with pig iron and charcoal production.

- Accession of Vale and Sindifer to the certification program.

- Approved creation of ABNT/CCE-201 - Commission of Special Study of Pig Iron and Charcoal Sustainability Production.
Socio-environmental Programs

- Set up a partnership with the Public Power to develop a social and environmental awareness program for charcoal suppliers.
  - Structuring Terms of Reference for implementation of awareness and training program to charcoal producers with the Federal Government.
  - Being prepared: Conducting workshops in Pará and Minas Gerais with the charcoal and pig iron producers.

Note: Companies associated with Brazil Steel Institute already conduct environmental education and training programs for their suppliers.
Forest Stocks of Steel Industry

- Conclude, within 4 years, full compliance of forest stocks with the respective production demands by means of own plantation or outsourced plantation, provided in accordance with the legal requirements.

Production of pig iron appropriate to charcoal (base 2012)

Charcoal Consumption

<table>
<thead>
<tr>
<th>Origin</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own Planted Forest</td>
<td>80%</td>
<td>86%</td>
</tr>
<tr>
<td>Outsourced Plantation</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Legalized Forest Residues</td>
<td>10%</td>
<td>4%</td>
</tr>
</tbody>
</table>
Forest Stocks of Steel Industry

• Own Forest Base: 507,000 hectares
• Work in partnership with the Government continuing the development and implementation of the technology to capture and flare of gases generated from charcoal production process, so as to reduce emissions of greenhouse gases.

• Technology development:
  . Establishment of a Working Group for technological development of charcoal production from planted forest in Minas Gerais.
  . Participating Companies: Arcelor Mittal, Aperam, Gerdau, Votorantim, V&M, Plantar
  . Participating Universities: Universidade Federal de Viçosa, Universidade Federal de Lavras, Universidade dos Vales do Jequitinhonha e Mucuri
  . Research lines:
    - Wood Drying
    - Oven Cooling
    - Gas Burner
    - Wood Quality
    - Supervisory System of Oven
    - Cogeneration of Energy
Charcoal Production: R&d

. Fapemig Project:

. Budget of BR$ 2 million from the Department of Science and Technology of the Government of Minas Gerais.

. 14 works/experiments (5 doctorates, 8 masters and a monograph)

. Pilot projects for Capture and Gas Burning

(one doctorate and one master)

. Partnership with Cemig for the development of power cogeneration technology.
Next Steps

- The continuity of investments in the formation of own forests and outsourced plantation.

- The editing of technical norm about sustainability requirements for pig iron production. The publishing of the standard, the definition of the rules and the credentialing of institutions interested in acting as certifiers agencies of pig iron charcoal production.

- The conducting of workshops with charcoal and pig iron producers.

- The continuity of R&D projects to improve the productivity and sustainability of charcoal production.

- The narrowing of the partnership with the Government for establishing measures to support sustainable production from pig iron to charcoal.
Partnership with the Public Power

- Structuring a platform of support of Federal and State Governments to the actions of the production from pig iron to charcoal sustainability is essential, including, among others:

  - Social and environmental education programs;

  - Social inclusion actions of micro charcoal producers;

  - Specific lines of funding and ways of incentives for the use of bio-reducer (e.g. Climate Fund resources);

  - Harmonization of forest policy between the Union and the states.