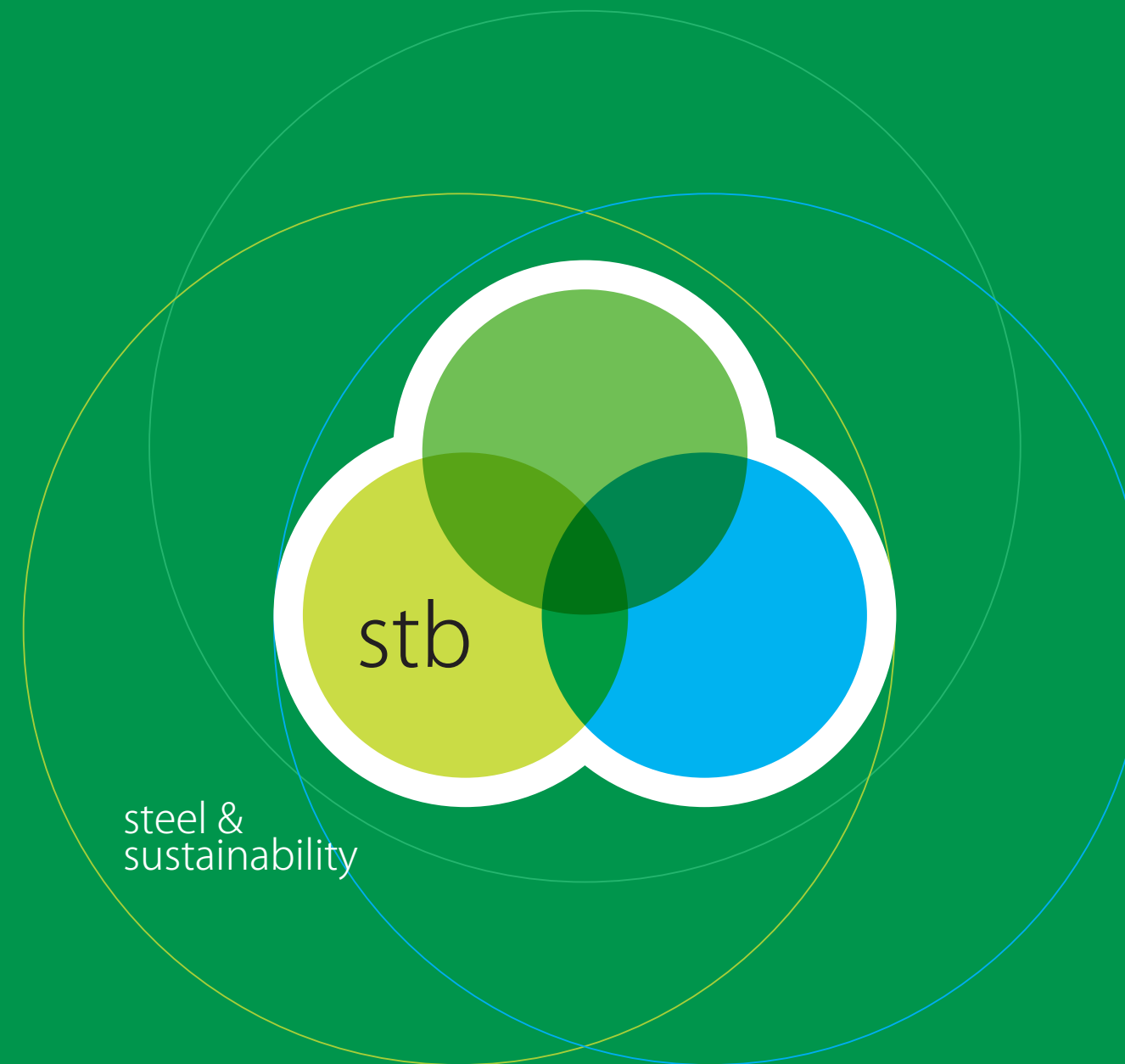


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STEEL | Building a Sustainable Future



Brazil Steel Institute

It was created in 1963, to promote competitiveness of Brazil steel industry and perform several activities such as studies, researches and representation in private and public forums. Throughout these years, the Institute has always been engaged with sustainable development within the country and social demands, as shown in its actions for sustainability, based on economic, social and environmental principles.

Associated Companies

APERAM SOUTH AMERICA
ARCELORMITTAL AÇOS LONGOS
ARCELORMITTAL TUBARÃO
COMPANHIA SIDERÚRGICA NACIONAL - CSN
COMPANHIA SIDERÚRGICA DO PECÉM - CSP
GERDAU AÇOMINAS S.A.
GERDAU AÇOS ESPECIAIS S.A.
GERDAU AÇOS LONGOS S.A.
SIDERÚRGICA NORTE BRASIL S.A. - SINOBRA
THYSSENKRUPP CSA - CIA. SIDERÚRGICA DO ATLÂNTICO
USIMINAS
VALLOUREC SOLUÇÕES TUBULARES DO BRASIL S.A.
VILLARES METALS S.A.
VOTORANTIM SIDERURGIA S.A.

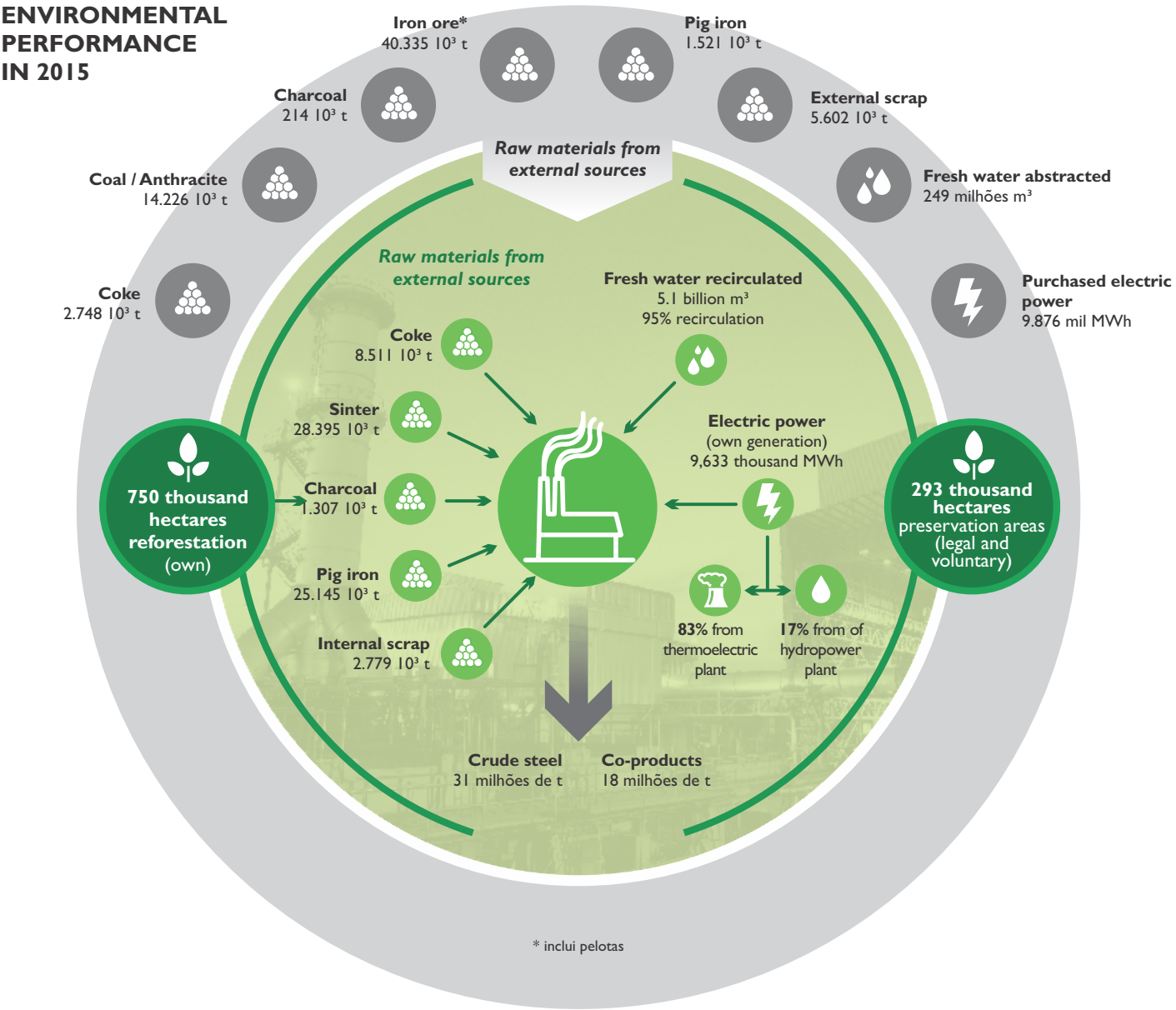


CHARCOAL SUSTAINABILITY PROTOCOL

The Charcoal Sustainability Protocolo,an initiative of Brazil Steel Institute and associated companies,was launched in 2012.It contains 8 commitments,one of which is to annually present the activities carried out,as follows:

Protocol Commitment	Actions Carried out in 2016
1.Acting within the precepts of sustainable development and in perfect harmony with the legislation, considering in an integrated and harmonious way the environmental, social and economic aspects.	Permanent commitment of the companies of the sector in the operation in total legal compliance and in accordance with the principles of sustainability in the production of steel, as well as demand from its suppliers the sustainable production of raw materials and inputs.
2.Working with the productive chain in order to eliminate practices and activities that violate labor rights or cause damage to the environment.	Published, in September 2015, the ABNT technical standard that establishes guidelines for the Sustainable Production of Pig Iron, addressing environmental, social and labor aspects.
3.Maintaining a business relationship only with companies that comply with all legal social and environmental requirements.	Sequentially, works to create the certification standard for pig iron based on ABNT NBR 16409:2015 began, in order to guarantee sustainable production and compliance with legal and social requirements in the pig iron chain.
4.Demanding documentary evidence required by law for suppliers of charcoal and products derived therefrom.	
5.Establishing a partnership with the Public Power for the development of a social and environmental awareness program regarding charcoal suppliers.	The steel industry has taken an important step towards the development of a social and environmental awareness program with charcoal suppliers by finalizing the Charter of Good Practices in Charcoal Production. The Charter addresses four key themes: health and safety, legal forestry, the environment, and labor conditions.
6.Concluding, in up to 4 years, the full compliance to forest stocks according to the respective demands of production through own planting or third-parties planting, provided that in line with legal requirements	In 2016, 98% of the charcoal used for steel production by members of Brazil Steel Institute was supplied by wood from its own or third-party planted forests, in accordance with legal requirements.
7.Acting in partnership with the Government, continuing the development and implementation of technology for capturing and burning the gases in the charcoal production process, aiming to reduce emissions of greenhouse gases	Studies have been carried out aiming at the improvement of technologies for capturing and burning the gases in the process of producing charcoal.
8.Periodically presenting the development of the actions mentioned above in the Sustainability Report of the steel industry.	Activities carried out in 2016 presented in this publication.

ENVIRONMENTAL PERFORMANCE IN 2015



The Brazilian steel industry invests in its own generation of energy, either through the reuse of the gases generated in the production process in thermoelectric plants or through its own hydroelectric plants. In 2016, **49% of the electric power** consumption of the plants was supplied through **self-generation** (41% in thermoelectric plants and 8% in hydroelectric plants).

Companies in the sector invested **R\$ 1.1 billion** in 2016 in environmental protection projects. These initiatives include, among others, programs for energy conservation, water recirculation, waste reuse and emission reduction.



STEEL LIFE CYCLE



The Brazil Steel Co-products Center, created at Brazil Steel Institute, promotes actions for the technical qualification and value added to co-products of steel production, so that they can be used in several applications.

The most recent measurements and results are:

- Publication of Standard ABNT NBR 16364:2015 of application of steel aggregate as sub-base and base.
- Tax reclassification of steel slag in NCM 2517.20, as macadam of blast furnace slag, other slag and similar waste.
- Development of a study, together with DNIT, for the application of steel aggregate as base and sub-base in experimental sections.

Co-products: Blast furnace and steelworks aggregates are used in the manufacture of **cement, road paving and other applications**. Powders and sludge collected in pollution control systems are recycled in the process by replacing part of the raw materials and therefore **by reducing the consumption of non-renewable natural resources**.

Brazilian Steel Industry 2016

Steel Producer Complex:
30 Power Plants (15 Integrated and 15 Semi-integrated)
Administered by 11 groups

Net Turnover:
R\$ 67 billion
(US\$ 19.4 billion)*

Taxes Paid:
R\$ 12.2 billion
(US\$ 3.5 billion)*

Installed Capacity:
50.4 million tons/year
of crude steel at the end of 2016

9th World Ranking Producer
Production (ton of Crude Steel):
Brazil = 31.3 million t
World = 1,629.6 million t
1.9% (Brazil/World)
Latin America = 59.7 million t
52.4% (Brazil/Latin America)

Associates:
Own staff = 64,722
Third-party staff = 40,754

Productivity:
352 t/man/year

(*) Conversion to the average dollar of the month.