

Jorge Lacerda Thermoelectric Complex

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August 2013

Jorge Lacerda Thermoelectric Complex



Jorge Lacerda A Thermoelectric Power Plant - UTLA



UTLA – 232 MW



1&2: 1965/66 - 2 x 50 MW

3&4: 1973/74 - 2 x 66 MW

Jorge Lacerda B Thermoelectric Power Plant - UTLB



Jorge Lacerda C Thermoelectric Power Plant - UTLC

UTLC – 363 MW

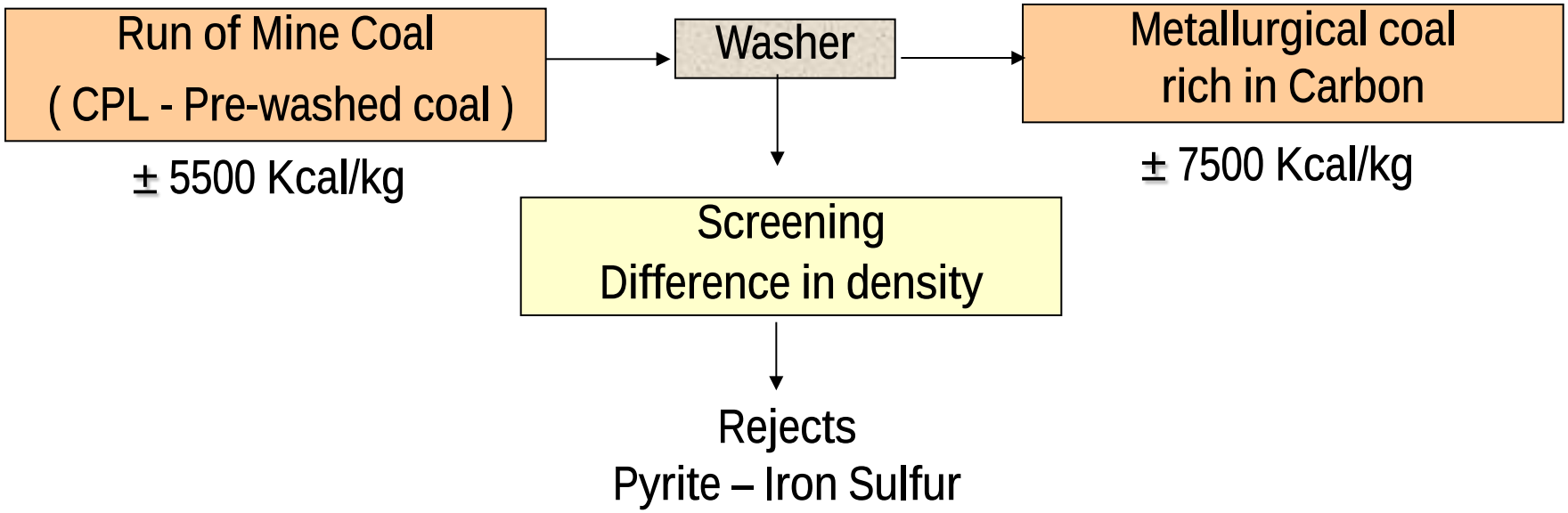


Background to the Jorge Lacerda Thermoelectric Complex

Late forties - postwar

- CSN coal washer:

ü **difficulty in importing from Europe**



Background to the Jorge Lacerda Thermoelectric Complex

Early sixties

- Rejects:

- ü **environmental problems**
- ü **still has energy value**

Screening:

- **Metallurgical coal**
- **Coal Steam**
- **Pyrite**

4500 Kcal / kg

UTCA – Capivari TPP

CTJL – Produtive Chain



Mining

3,300 employees

Jorge Lacerda Thermoelectric Plant

900 direct employees

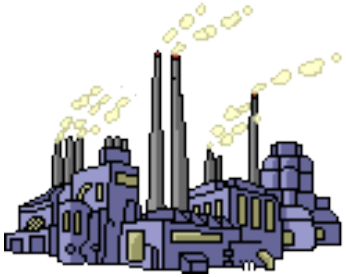
(350 TBLE + 550 Hired)

Reviews: + 600 employees



Coal Transportation

400 employees



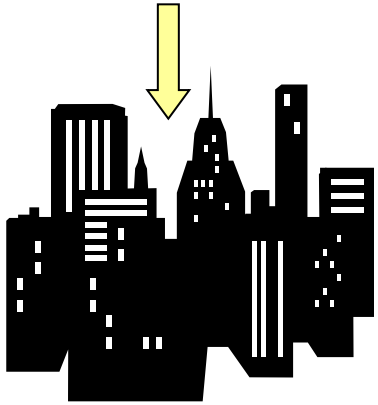


Cement Industry

Transportation – 300 employees

Industry – 1100 employees*

*** Rio Branco Cement – SC/PR**



Industry / Commerce / Residences

35 % of the consumption in the state of SC

Total number of employees created:

6,600 + Unit reviews (600)

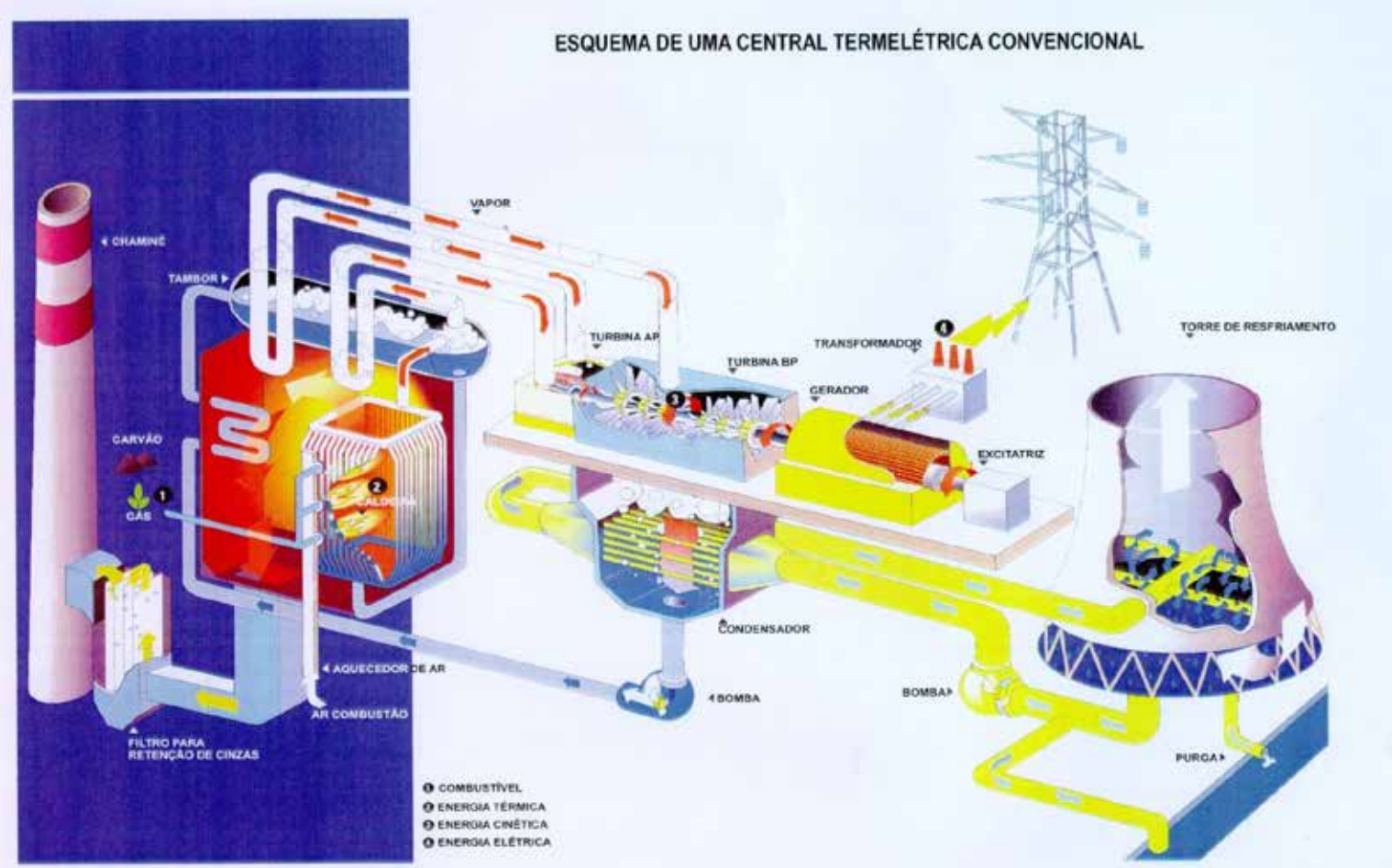
Economic Relevance

- Coal production chain creates more than 6 thousand jobs in the following activities:
  - coal mining
  - coal transportation and supply
  - electric energy generation
  - extraction and transportation of ash

- Injection of resources into the economy in the south of SC (2013) :
  - R$ 660 million – fuels
  - R$ 150 million – own personnel, operating budget (routine), special services, unit reviews and investments

- CTJL accounts for 70% of the municipal tax revenue collected and for 75% of the economy of Capivari de Baixo

Thermoelectric Power Plant Operation





Social Responsibility

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Social Programs
Fire Brigade



Social Programs
CEACA



Social Programs
Model Vegetable Garden Environmental Education and APAE Project



Professional Training
Tractebel – SENAI Agreement



Energy Generation

Technical Course



Boiler Soldering Course

Professional Training
Adolescent Apprentice Program



Visit Program









Model Vegetable Garden Environment Education





Horto Florestal Park





- ü **Monthly Production of 10,000 saplings**
- ü **Donation of 90,000 saplings/year**
- ü **Recovery of endangered species**

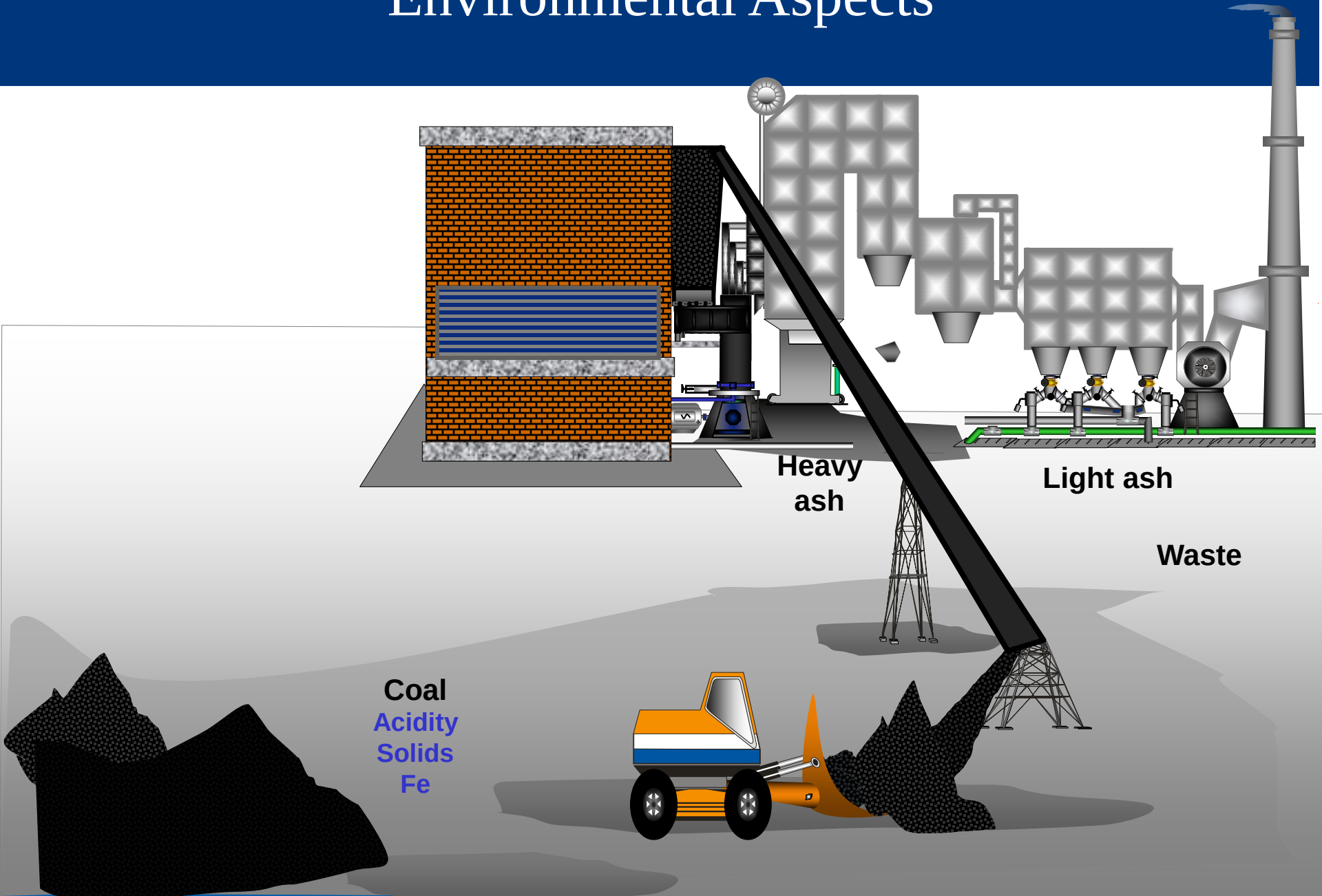
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Environmental Management

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Environmental Aspects



Disposal of Heavy Ash

Before

Tubarão River



After 2009





Comitê da Bacia do Rio Tubarão e Complexo Lagunar

Restoration of Degraded Areas



Restoration of Degraded Areas



CSN Coal
Fines Basin



Prêmio Brasil Ambiental 2007

Light Ash



Collected through Electrostatic Precipitators and stored in concrete silos, light ash is sold to the cement industry.

Environmental Monitoring Stations

Capivari de Baixo





Vila Moema

- ü Particulate Material Analysis – PTS
- ü Particulate Material Analysis – PM10
- ü Particulate Material Analysis – PM2,5
- ü SO_2 Analyzes
- ü NO_X
- ü Ozone
- ü Carbon oxides analyzer (CO and CO_2)
- ü Solar Radiation



São Bernardo

Analyzers



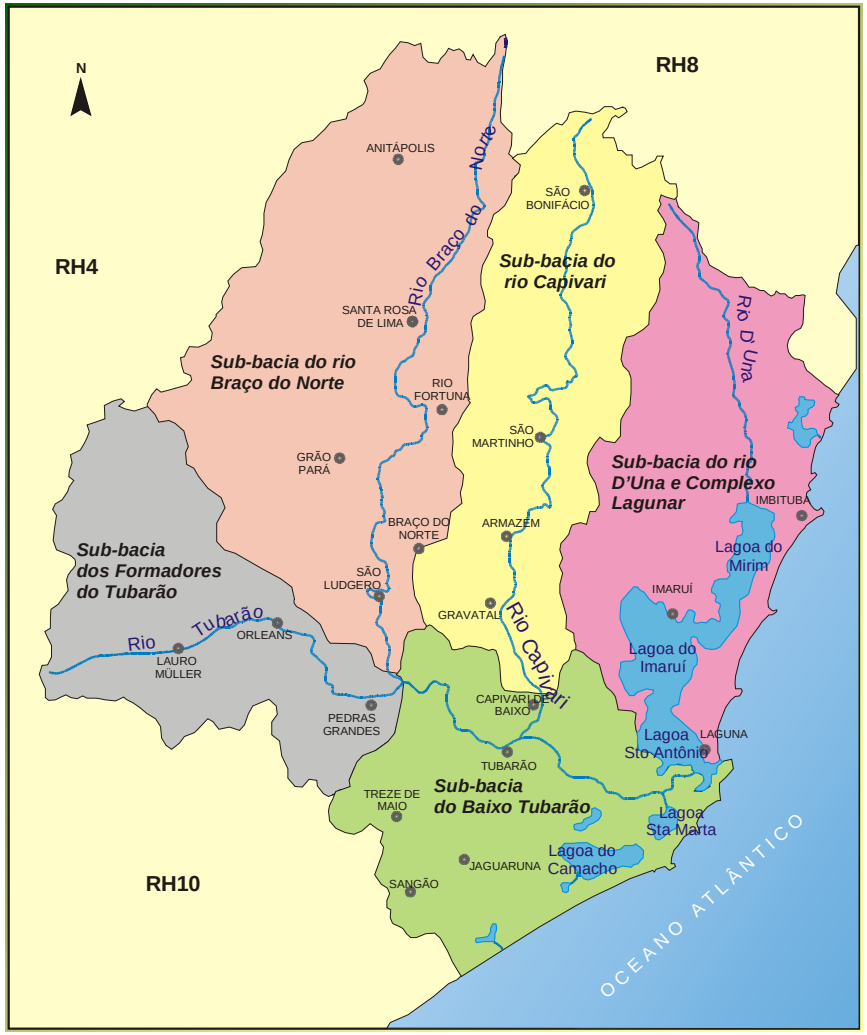

BAM 1020
Environics
6100
MULTI-GAS CALIBRATOR
HORIBA
HORIBA

Monitoring of Water Quality

Environmental Monitoring of Water Quality is undertaken at the following collection points:

- ü Tubarão River Basin: 05 points
- ü Capivari River Basin: 02 points
- ü Plant Effluent: 07 points
- ü Watertable: 11 points

Protection of Springs Project



Management of Hazardous Waste







- ü **Hazardous Waste: 167 ton**
- ü **Non-hazardous Waste: 1,178 ton**

- ü **Recycled Hazardous Waste: 159 ton (95%)**
- ü **Recycled Non-Hazardous Waste: 952 ton (81%)**

Baseline Year: 2012

UTLB/UTLC Coal Yards



UTLB/UTLC Coal Yards



Environmental Park



Environmental Park



R&D Project – Photovoltaic Solar Energy



Continuous Improvements

- ISO 9001 – Quality Management (2004)
- ISO 14001- Environmental Management (2004)
- OHSAS 18001 (since 2010)



Thank you for the attention!!!

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