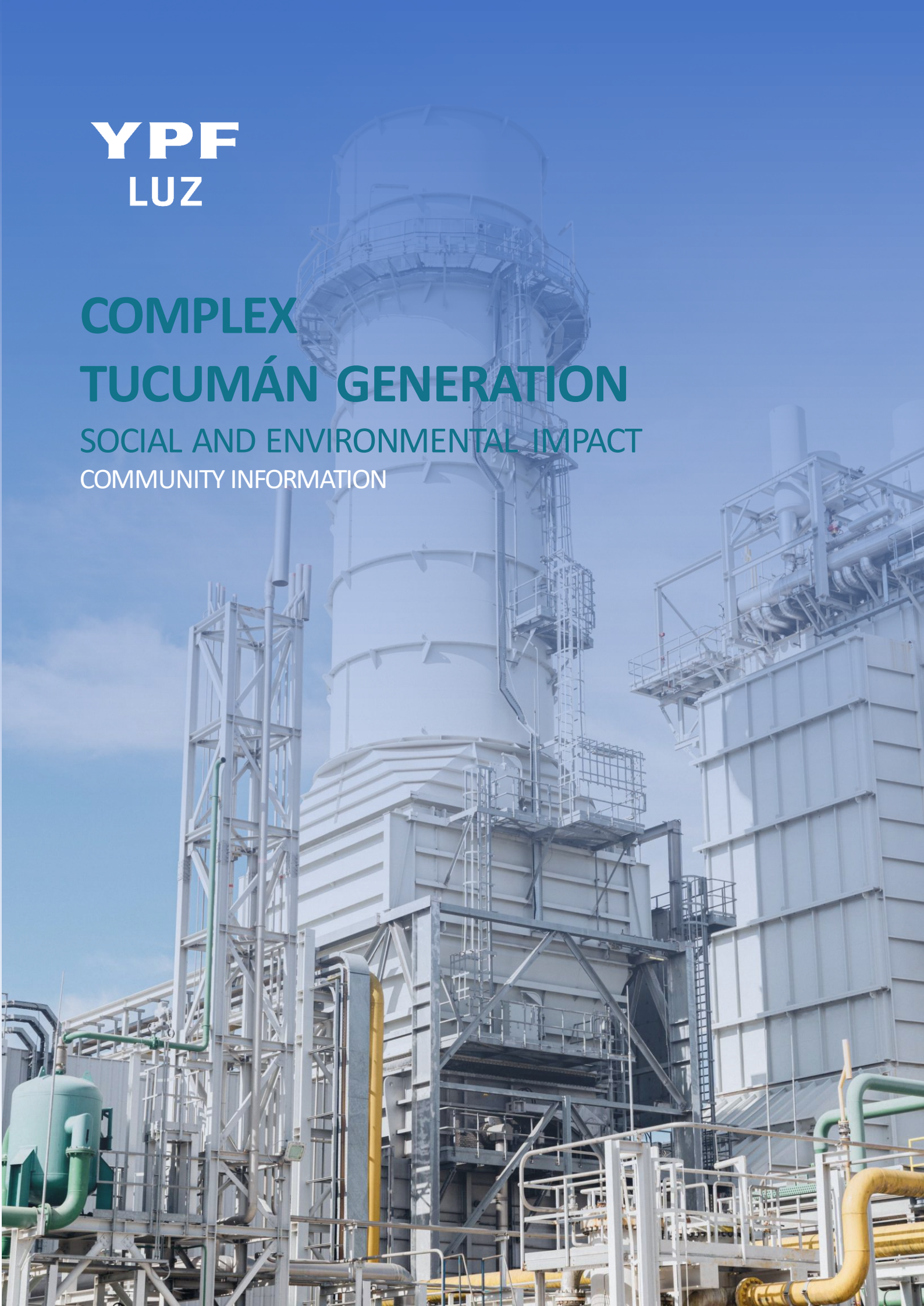
YPF LUZ

# COMPLEX TUCUMÁN GENERATION

## SOCIAL AND ENVIRONMENTAL IMPACT

### COMMUNITY INFORMATION



# 1. Introduction

This document is a non-technical summary of the social and environmental impacts of the construction and operation of the Tucumán Generation Complex (CGT), which includes the Tucumán Combined Cycle Power Plants (CTT), San Miguel de Tucumán (CTSMT) and El Bracho (CTEB) of YPF Energía Eléctrica S.A., hereinafter "YPF Luz".

The document describes how the construction of the park was developed and the potential environmental and social impacts that may be generated during its operation.

In addition, it clarifies the company's actions aimed at preventing, controlling and minimizing these impacts, and explains how environmental and social aspects are managed.

This document is part of the community relationship plan, which aims to keep employees, authorities and the community in general informed of all stages of the operation of the Tucumán Generation Complex. The plan details the communication actions with the different stakeholders, as well as the tools available for people to channel their doubts and concerns about the project.

# 2. Project design and construction

From the early stages of the development of new projects, YPF Luz is committed to acting responsibly with the communities. To this end, potential socio-environmental risks and impacts that may be related, directly and indirectly, to each of the stages of their projects are identified, evaluated and managed.

In 2013, YPF Luz acquired its first two combined cycle plants CTT and CTSMT.

In 2016, YPF Luz planned the installation of the El Bracho Thermal Power Plant, with a capacity of 473 MW. The plant has General Electric technology, with a high generation efficiency. It began its operation in January 2018.

The CGT has an installed capacity of 1302 MW and is one of the largest thermal generation centers in Argentina. The energy generated supplies the Argentine Interconnection System (SADI) through the El Bracho Transformer Station, which is operated by Transener S.A. and is located on a property adjacent to the complex.

# 3. Description of the complex and impacts identified

## 3.1. Resort Description

YPF Luz's Tucumán Generation Complex is located on National Route 9, Km 1272 in the town of El Bracho, Cruz Alta department, Tucumán province.

Below are the main characteristics of each combined cycle (CC):

| Combined Cycle | Installed power (MW) | Start of operation | Technology |
|---|---|---|---|
| CTT | 447 | 1999 | 2 TG Siemens y 1 TV General Electric |
| Damn it | 382 | 2002 | 2 TG General Electric y 1 TV Alstom |
| CTEB | 473 | 2018 | 1 TG y 1 TV General Electric |

## 3.2. Operation and Maintenance

The operation and maintenance activities of the complex are generally carried out with its own personnel, present at the plant throughout the year.

The control room of the complex consists of three consoles, one for each combined cycle. The operations team is made up of 12 operators who rotate to cover shifts and maintain operation 24 hours a day.

The main inputs for energy generation are natural gas and water. For the former, the complex has a derivation from the North Trunk Gas Pipeline, operated by TGN. More than 900 million m3 of natural gas are consumed annually.

The water is captured through underground wells. The annual consumption is greater than 4000 kton of water.

## 3.3. Environmental and social impacts

### Construction stage

The El Bracho work required the mobilization of workshops, machinery and component equipment to the site. For the transport of the main equipment, companies specializing in heavy transport were subcontracted. These companies were in charge of the study of the transport route with identification of interferences and possible affected communities.

One of the relevant environmental aspects during the work was the generation of hazardous and non-hazardous waste, so companies authorized by the province were hired to carry out its proper management.

The entire project required an investment of more than US$436 million. The construction of the combined cycle required more than 550 direct jobs at the peak of the work.

### Operation Stage

The main environmental impacts at this stage are related to liquid and gaseous effluents, and waste generation. For its proper management, the Tucumán Generation Complex has an Environmental Monitoring Program agreed with the applicable environmental authorities (ENRE at the national level and the SEMA of Tucumán) with which its environmental performance is monitored through the presentation of monitoring reports.

- **Gaseous effluents**

The exhaust gases are discharged into the atmosphere through the chimneys of each of the plants. The generation of electricity is produced by the generation of gaseous emissions, such as nitrogen oxides and particulate matter. The Plants do not exceed the maximum limits of the Admissible Concentrations for Short Periods (CAPC) and Long Period (CAPL) of the pollutants established as air quality parameters in accordance with the provisions of Resolution 294/89 of the Provincial Health Council of the Province of Tucumán, legal regulations applicable to the Project.

- **Liquid effluents**

The liquid effluents that are generated come from the activity and operation of the evaporative system, filter house, reverse osmosis rejection, and from rainwater and sanitary (sewage) drains, among others.

The liquid effluents of the Complex are evacuated through an underground aqueduct. The total tipping is approximately 130 to 170 m3/hour for the entire Complex.

- **Noises**

Both the occupational acoustic level (according to national law 19.587 and Res 84/15) and the environmental acoustic level (under IRAM 4062 methodology) are monitored and controlled periodically.

- **Household and special solid waste**

Thermal power plants require programmed activities that allow for proper operation and less wear and tear on the equipment used. In these activities, waste is generated that is classified as household waste (generation of paper, wood, plastics) and on the other hand, special waste is generated (used oils, solids with oils, paints, solvents). In the case of this special waste, YPF LUZ has registered as a generator of special waste and has contracts with companies authorized for treatment and final disposal. Regular monitoring of waste management is carried out.

# 4. Social Investment

The Company's social investment and donations policy establishes the guidelines for the development of social responsibility initiatives and includes donations, volunteer activities, community relations and any social investment associated with environmental, social, community or institutional projects.

The social investment strategy is aligned with different United Nations Sustainable Development Goals (SDGs) to contribute to the global agenda.

The objectives of the social and environmental investment strategy are:

- To improve the quality of life and infrastructure of the communities where we operate.
- To contribute to improving the quality of education and the environment.
- Promote the efficient use of energy and renewable energies.
- Collaborate with other organizations to achieve sustainable change.

# 5. Quality, safety and environment

The complex was built and operated in compliance with applicable national, provincial and municipal legal regulations, recommendations from equipment manufacturers and following the company's safety, health and environmental standards.

At the national level, the electricity generating industry is regulated by the ENRE (National Electricity Regulatory Entity), an entity that ensures compliance with strict environmental, health and safety standards specific to this industry. The Complex complies with applicable national and provincial legal regulations, recommendations from equipment manufacturers and following the company's safety, health and environmental standards.

YPF Luz implements the following monitoring plans at the plants:

- POAMS: Environmental and Social Objectives and Actions Plan (includes Environmental Impact Assessment and Monitoring Plans)

- POASS: Health and Safety Objectives and Actions Plan (Includes Occupational Risk Assessment and Hygiene and Safety Plans)
- POAC: Quality Objectives and Actions Plan

### 5.1. Methodology for environmental impact assessment

The Environmental Impact Assessment Study of El Bracho was developed in compliance with the provisions of the Law of the Province of Tucumán No. 6253, resolution ENRE 13/1997 "Practical Guide for the Assessment of the Atmospheric Environmental Impact" and through the Conesa Fernández Vitora methodology.

The environmental impact assessment was approved by Resolution No. 338/16, which is the environmental permit.

### 5.2. Certifications

The Tucumán Generation Complex has a unique certificate for the Integrated Management System, which includes the following standards:

- ISO 14.001: Environmental Management System.
- ISO 9.001: Quality Management System.
- ISO 45.001: Occupational Health and Safety Management System.
- ISO 50.001: Energy Management System.

## 6. Inquiries and complaints

The available consultation channels are listed below:

- Email: sugerenciasypfluz@ypf.com
- Contact form on website: www.ypfluz.com
- Leave a written inquiry with telephone and postal address at the CGT gate.

## 7. Ethics and Compliance

YPF Luz has a Code of Ethics and Conduct that guides the actions of all personnel on a day-to-day basis. It is applicable to directors and collaborators of YPF LUZ, as well as to third parties related to the Company.

Likewise, all employees and related third parties may make inquiries or report situations and/or behaviors that could constitute a real or potential breach of the provisions of the Code of Ethics and Conduct through the YPF LUZ Compliance Channel. YPF LUZ adopts the necessary measures to maintain the anonymity and confidentiality of all communications received.

Access to the Compliance Channel is done through the following tools:

- Página Web: www.canalcomplianceypfluz.lineaseticas.com
- Correo electrónico: canalcompliance.ypfluz@kpmg.com.ar
- By phone: 0800-122-0278
- In person (only YPF Luz employees): through your boss or the Compliance and Audit management.

## 8. Learn more

To access environmental, social and governance performance information, we invite you to read YPF LUZ's sustainability reports: YPF Luz