

# Geothermal Energy



## A Sustainable Alternative

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# Energy Sector

- Installed electrical generation capacity: 2707,3 MW
  - Thermal: 639,4 MW / 23,5%
  - Hydro: 1711,3 MW / 63,0%
  - Wind: 148,1 MW / 5,5%
  - Solar: 1,0 MW/ --
  - **Geothermal: 206 MW / 8,0%**
  
- Increase in consumption: 1990-2007: 5% /year  
2008-2011: 3% /year
  
- Electrification rate: 99,28%
  
- High potential for renewable energies:
  - Small hydro: not estimated but feasible
  - Large hydro: 4673 MW (+780 MW National Parks)
  - Wind: 126 MW
  - Biomass: 56 MW
  - Biofuels: not estimated but feasible
  - Solar energy: not estimated but feasible
  - Geothermal energy: 846 MW (including National Parks)

# Actual Geothermal Development

**206 MW installed geothermal generation supplies 13,9% of country's electric energy consumption**

## Geothermal projects in operation:

- Miravalles Geothermal Field
- Pailas Geothermal Field

## Miravalles Geothermal Field:

- Units I, II, III, V, Back Pressure Unit
- 163,5 MW
- Single Flash, Binary, Back Pressure
- In operation since 1994
- 5 Wells to drill



Units I and II, 55 MWe each



Unit III, 29,5 MWe

## Pailas Geothermal Field:

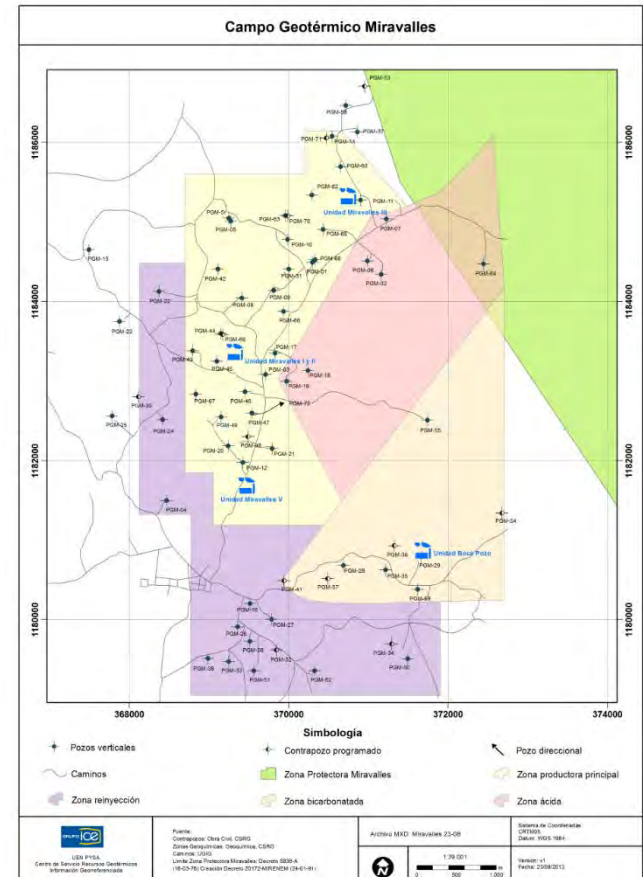
- Unit I, 42,5 MW
- 1 Well to drill
- Combined Cycle Binary
- In operation since 2011



Unit V, 19 MWe



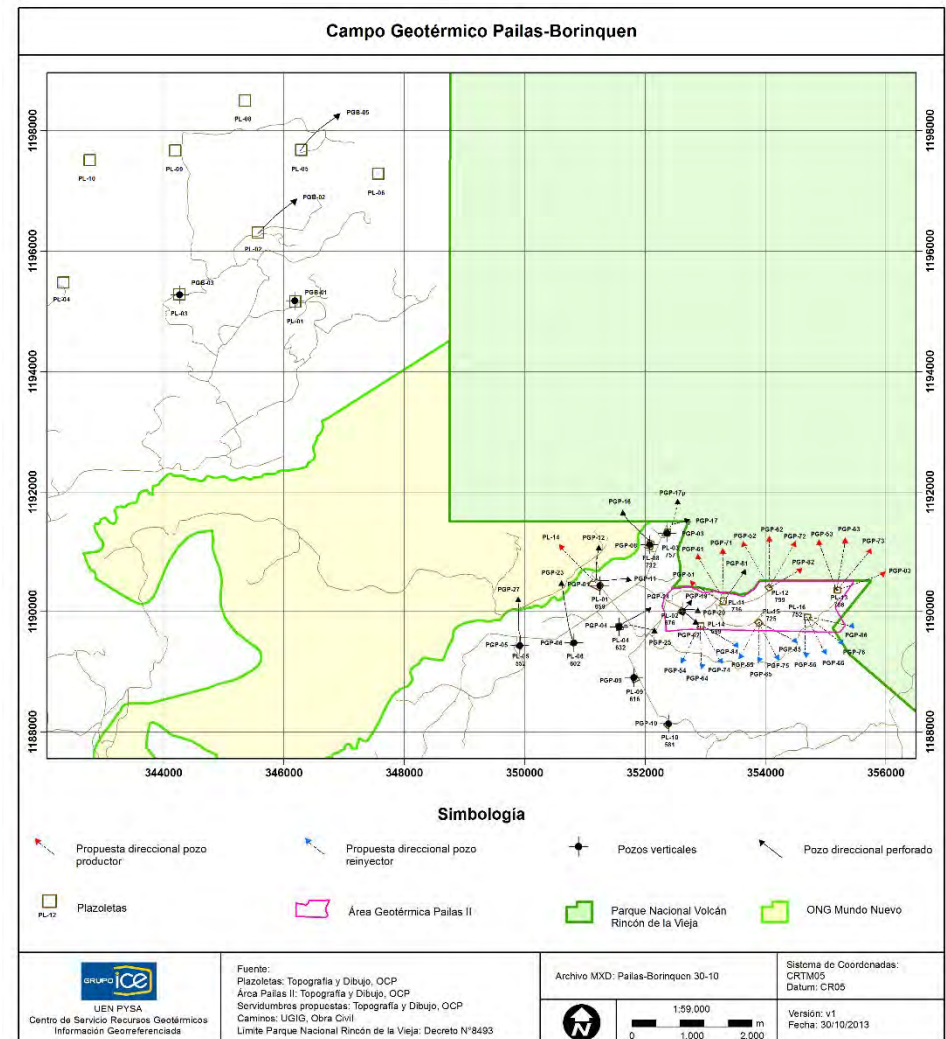
Miravalles Power Plants



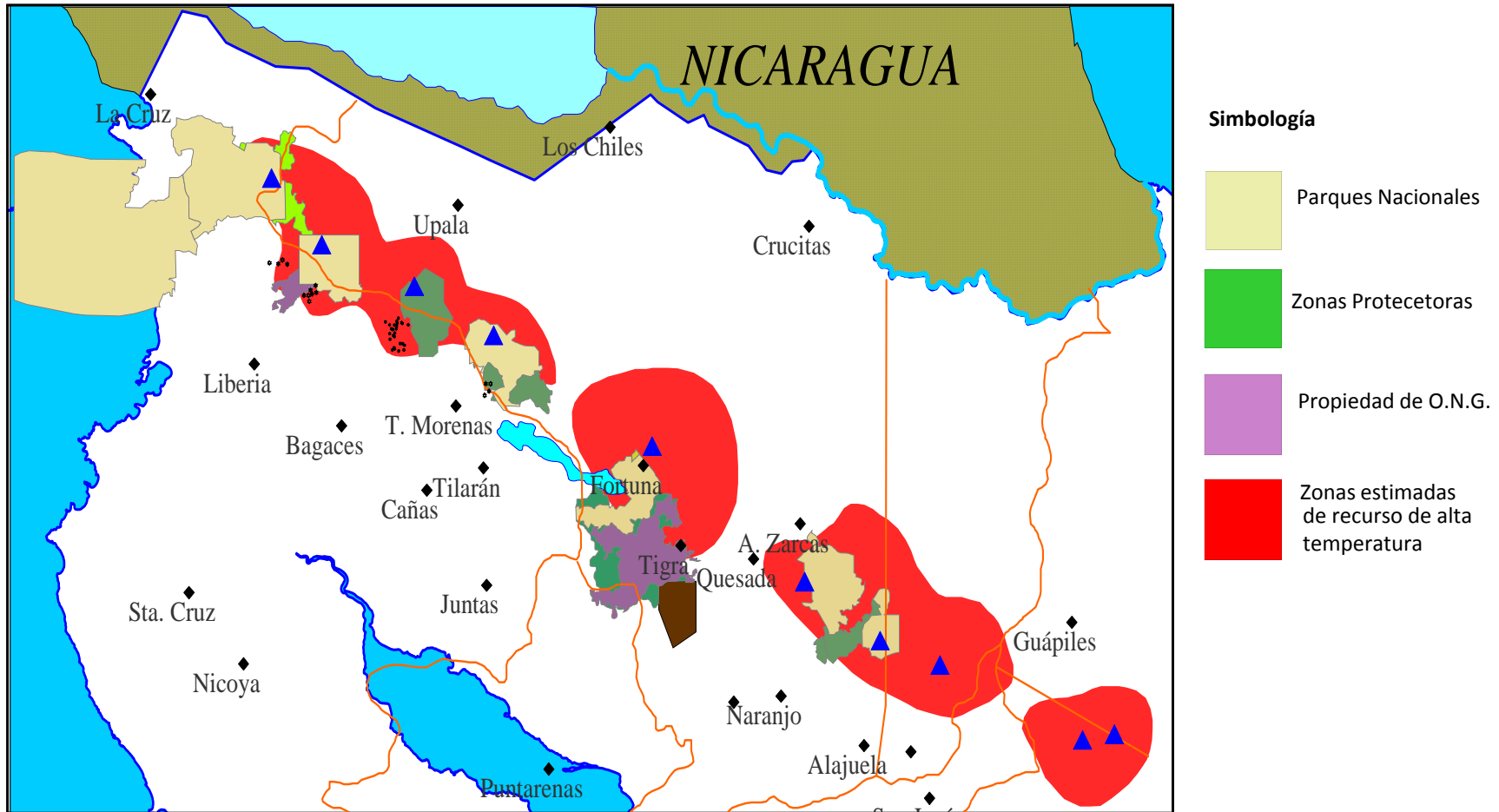
# Actual Geothermal Development

## Other projects in development:

- Pailas Unit II, 55 MW  
(19 Well to drill)
- Borinquen Geothermal Field, 2X55MW  
(37 Well to drill)

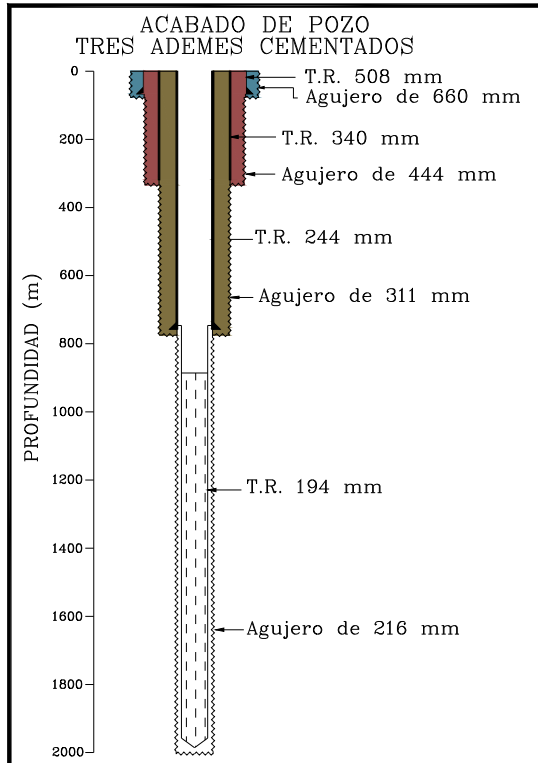


# Areas of Potential Geothermal Power



An important part of estimated geothermal resources are located in areas under the protection regime

# Acabado Pozo Geotérmico Vertical

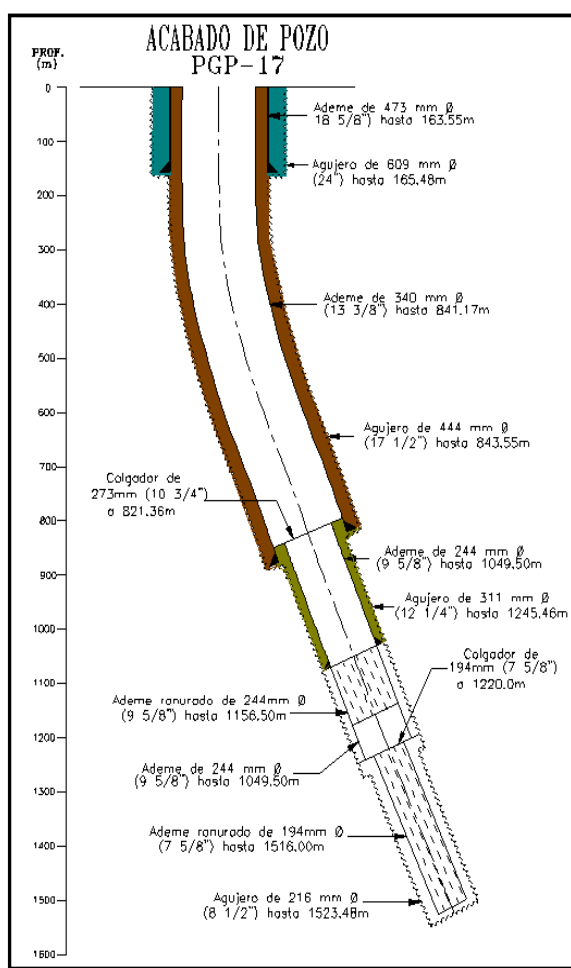


Vertical geothermal well. Used in the development of Pailas Miravalles and I.



Recovery ICE affected areas and areas previously affected by other uses

# Directional Well

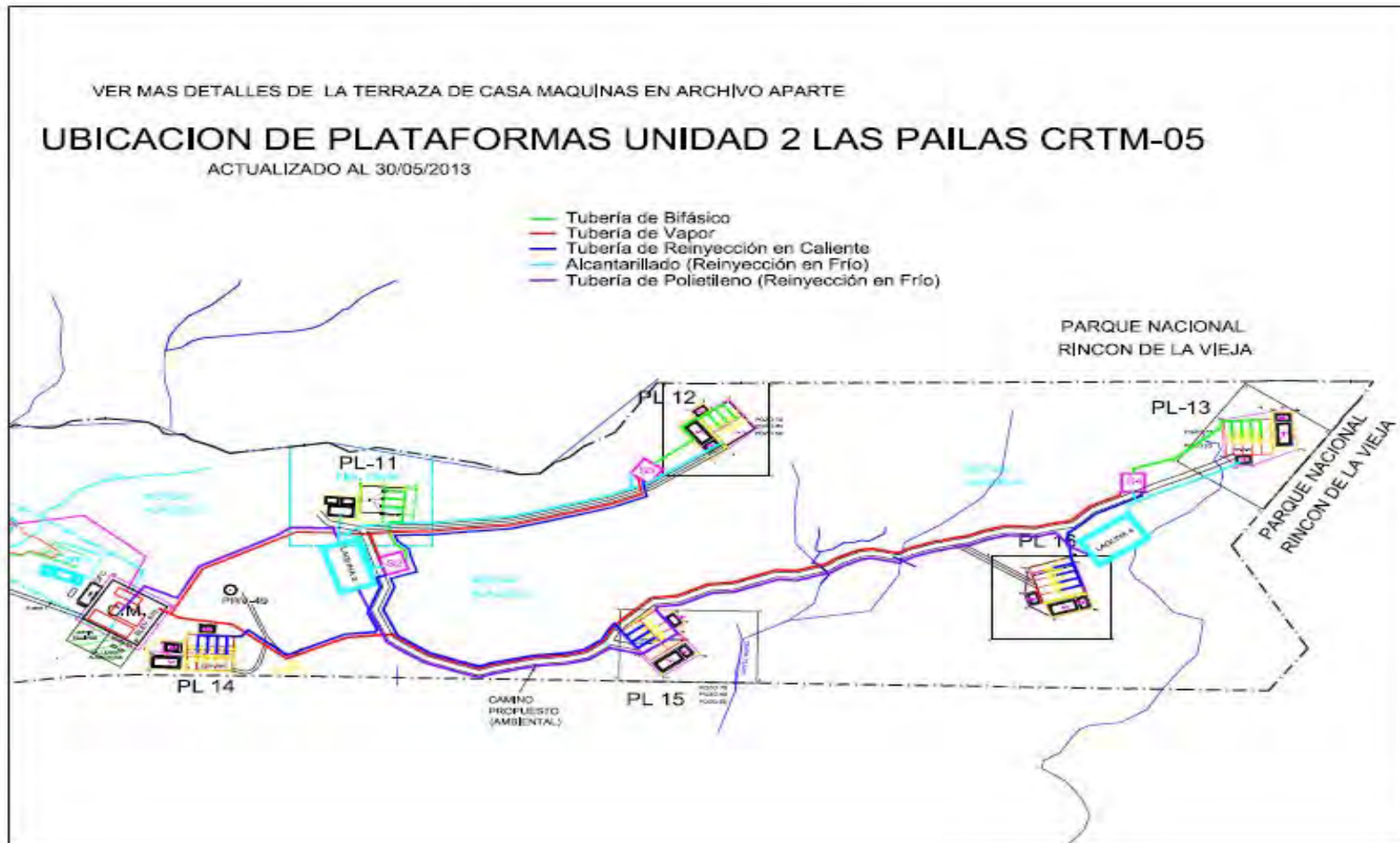


Partially used in the development of Pailas I, strategy used for the development of Pailas II

Technological improvements allow a significant reduction of environmental impacts, reducing the intervention areas up to 300%.

It reduces the amount of platforms, access roads, pipelines, sewers, etc.

# CAMPO GEOTÉRMICO PAILAS – UNIDAD II ESQUEMA DE DESARROLLO



- Integral Designs, which allow less surface affectation - Coexistence with the environment





Thanks!



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**Energía geotérmica,  
la alternativa sostenible**