

Wind Farm in the North Access: Harnessing Wind Energy in Parana

National Technological University

Paraná Regional School

Electromechanical Engineering Department

Inglés I

Academic year: 2023

Members:

- Unrein Francis Uriel.
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INTRODUCTION

Paraná:

- 1,426,426 inhabitants
- 5 districts - 254 neighborhoods



Our Purpose

- Investigate a possible solution to electrical problems in Paraná
- Generate more energy to reduce costs and improve efficiency
- Obtain a more ecological option to collaborate with the environment and the population of Parana

**Map of the
Presentation:**

-Description of the problem

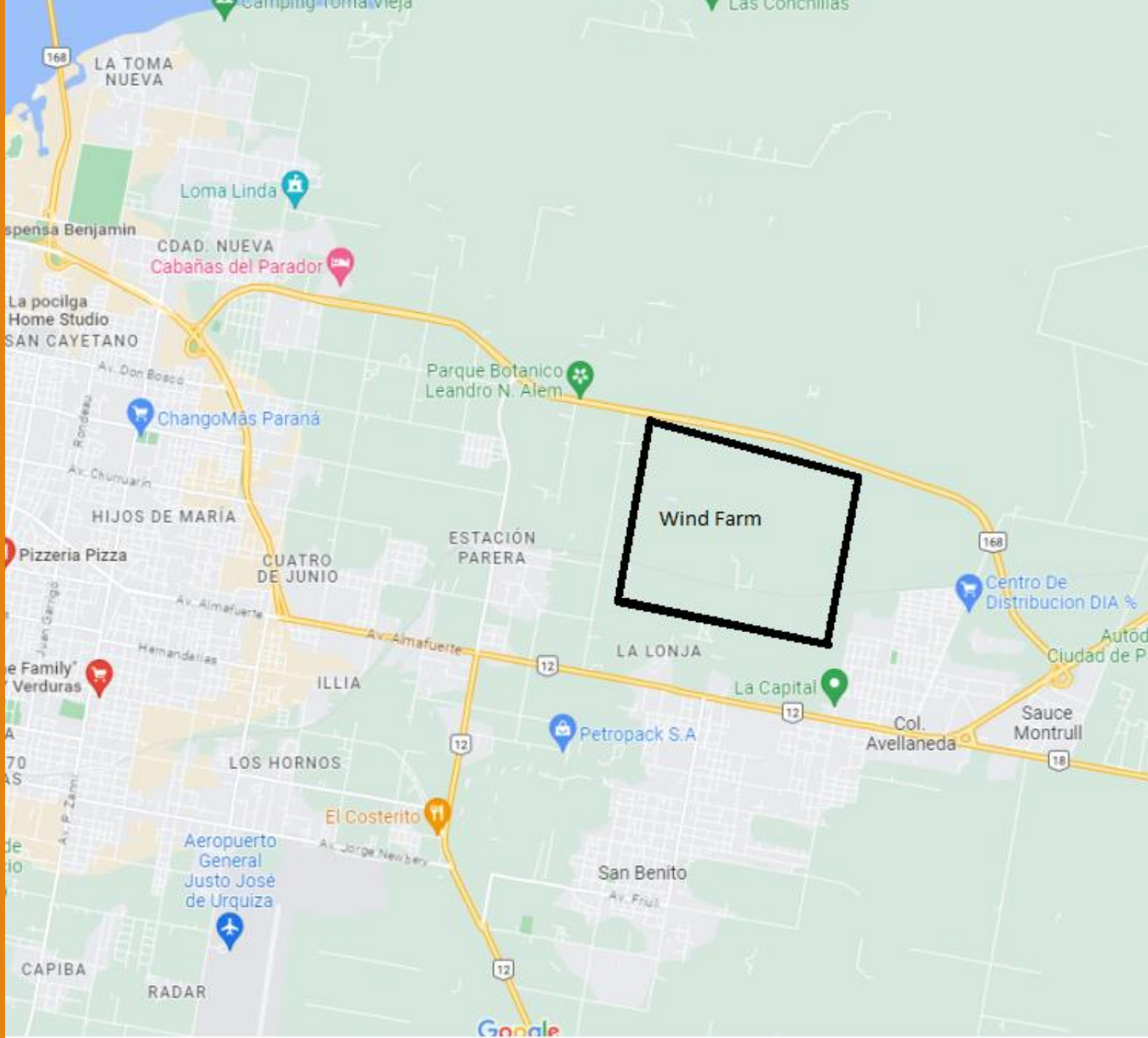
-Causes that give rise to the problem

-Consequences of the problem

-Solution

Description of the Problem

LOCATION



Parana: North Access



-No Constructions

-Wide and
Uninhabited Area

-Lands Ready for
Construction

Problem Statement



The electricity in Parana is inefficient and expensive.

Description of Scenes that Help Picture the Problematic Situation

Enersa
Energía en Entre Ríos S.A.
Sede Social: Buenos Aires 87 (E3100BQA) Paraná Entre Ríos
I.V.A. Responsable Inscripción - C.U.I.T. N° 30-70917667-2
Ingr. Estado N° 30-70917667-2
Código de Actividades: 020505

ID: 500849303
N° de Factura
230110130179

B/P: PARANA
CODIGO LINK: 258500849303
Referencia de Cobro

1056 Año Bim. 2023 1
Tarifa Nro. Medidor: 83187304
Tarifa 1 - Uso General

Fecha de Emisión
12 01 23

Titular
[Redacted]

Domicilio del Suministro
SAN MARTIN, GRAL. JOSE DE 499 PARANA (CP:3100)

Condición Fiscal IVA
Resp. Monotributo

CUIT
[Redacted]

Fecha Lectura Anterior	Fecha Lectura Actual	Días
10/11/22	11/01/23	62

Tipo de Consumo	Número de Medidor	Lectura Anterior	Lectura Actual	Lectura Por	Consumo Resultante
Activa (BT)	83187304	1263	4892	1.000	3429

Concepto	Importe
Cargo Fijo Bimestral	1.295,92
Consumo Energía Activa p/bloques	76.786,57
Contribución Municipal 8.6956%	6.789,74
Tasa Municipal CF/CV 15.00%	12.730,83
Interés por pago vencido	904,38
Nota de Crédito por Tasa de Rehabilitación	-2.082,50
Tasa por envío Aviso de Suspensión	212,40
Contribución Municipal(CV) 8.6956%	-83,98
IVA Resp. Monotributo 27.00%	22.632,08

Periodo	Csmo (kWh)
01/22	1320
02/22	1335
03/22	1076
04/22	248
05/22	6
06/22	1287
01/23	3429

Promedio (kWh): 1243

Potencia Contratada
6,0 kW

Vencimiento Próxima Factura
03/04/23

Información Desglosada
Cargo Fijo Bimestral: (62x1295,9200)/62=1295,92
Primeros 250 kWh: 250x (62x16,4916)/62=4122,90
Siguientes 450 kWh: 450x (62x29,4480)/62=9210,50
Excedentes 2729 kWh: 2729x (62x23,2534)/62=43453,07

TOTAL FACTURA 119.185,44

Bimonthly bill from January 2023, in a store in the center of Paraná



Store in the center of Parana without energy.

Identification and Analysis of Causes or Factors That Give Rise to the Problem

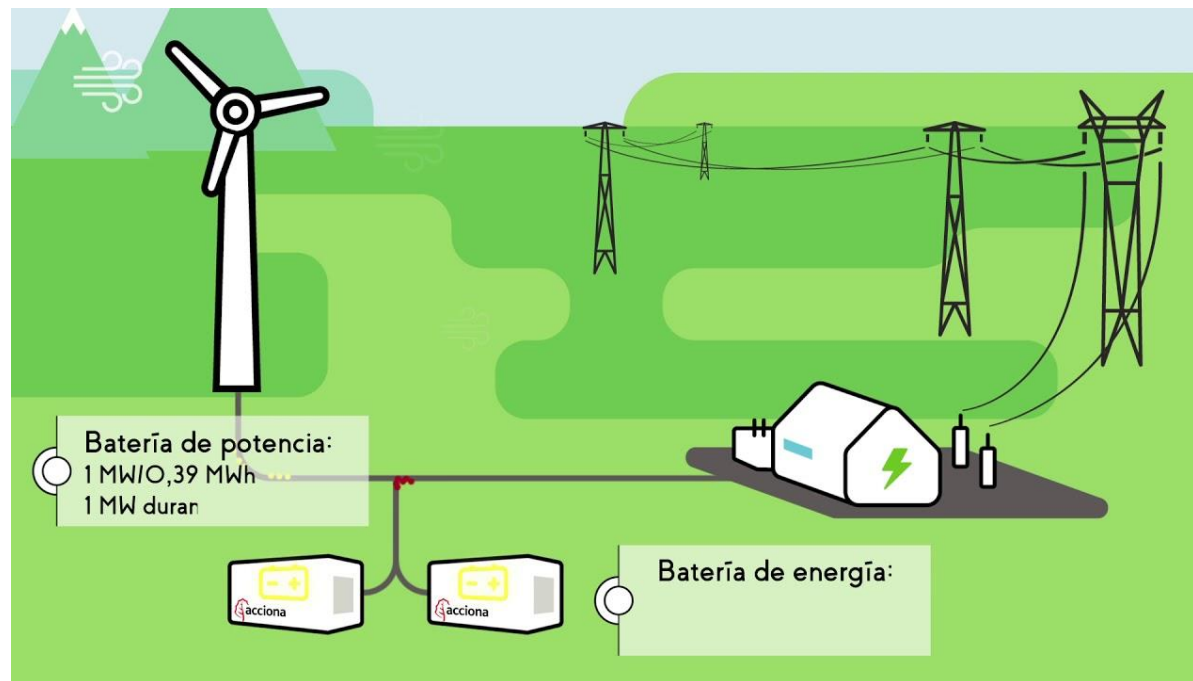
- ❖ High temperatures, especially in summer
- ❖ Inefficient light systems
- ❖ Increase in the price of the natural gas

Identification and Description of the Consequences

- ❖ Increase in the poverty of the population
- ❖ Low quality of life
- ❖ Loss of electricity generated by inefficient lighting systems

Problem Approach.

The best option for solving the problem and reducing the cost of the energy bills is by creating a wind farm, installing eolic turbines in the north access of the city.



Strengths and Weaknesses of the Proposal

- ❑ Strengths: -Minimum maintenance
 - Low contamination

- ❑ Weaknesses: -Price of the turbines and their installation
 - Noise that the turbines produce

Conclusion

The inefficient and high cost of the light in Parana is a serious issue and can be solved installing a wind farm in the North Access.

References

- ❖ *Google Maps, Location of Parana.* <https://www.google.com/maps/@-31.7531508,-60.4950511,13z?entry=ttu> (accessed Jun 8, 2023)
- ❖ *Google Maps, Location of Paraná.* <https://www.google.com.ar/maps/search/Paraná> (accessed Jun 9, 2023)
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- ❖ *“Senador provincial asegura que los aumentos de luz superan en un 35 a la inflación” elentrerios.com* <https://www.elentrerios.com/actualidad/senador-provincial-asegura-que-los-aumentos-de-luz-superan-en-un-35-a-la-inflacin.htm> (accessed Nov. 12 2023)

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