

DESIGN OF A POWER GENERATION PILOT WITH PHOTOVOLTAIC ENERGY FOR THE SILVESTRI COMPANY ORIENTED TO REDUCING OPERATING COSTS AND RELIABILITY IN SUPPLY.

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Description

The objective of this project is to integrate a grid-connected electrical self-consumption generator system of photovoltaic panels to the Cunardo farm, owned by the agricultural sector company De Silvestri located in Polonuevo - Atlántico with which it is expected to reduce costs by up to 20% of your monthly energy bill.

The main challenges and restrictions of this project were:

- The location and distance of the photovoltaic generator within the farm.
- Detailed geographical plan of the farm.
- Absence of the single-line diagram of the farm's electrical installation.
- Precise technical data sheets of the equipment and detailed analysis of the power required hour by hour.
- Energy policies in Colombia.

In addition to the requirements and restrictions, we rely on criteria of reliability in the supply, useful life of the generator, low operating, installation and investment costs to propose two design scenarios within the selected alternative with an installation power according to consumption. from:

5120 kWh / Month and a grid power purchase price of \$ 550 pesos per kW / h.

Situation 1



Design bearing in Account for the initial requirements of the project.
Location: About structure above the sheds.

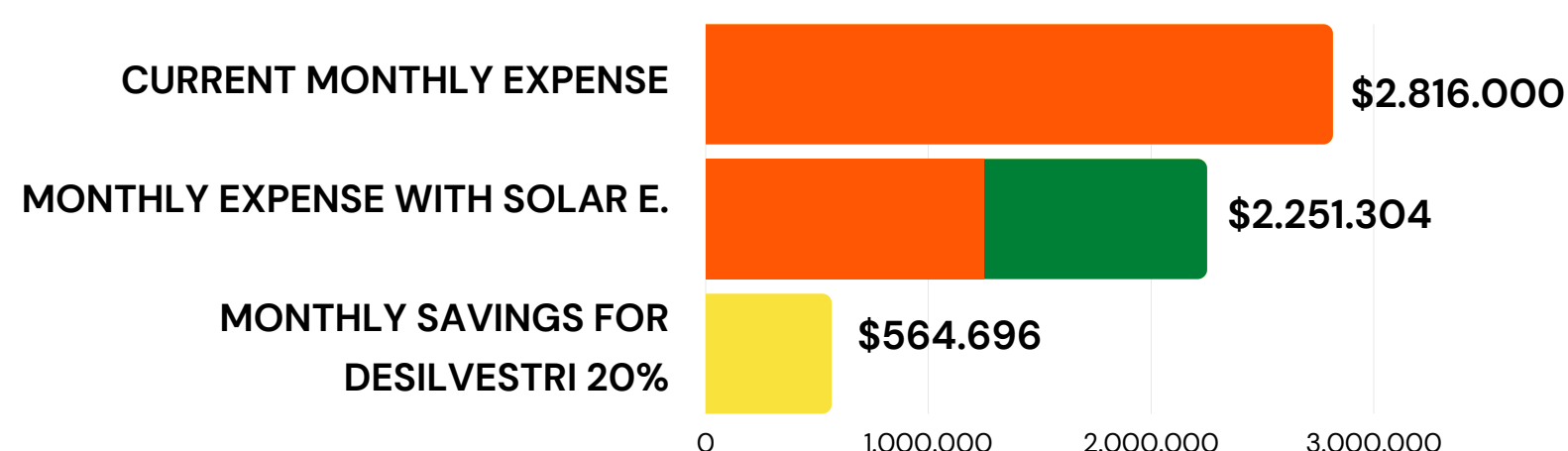
Total inversion:
\$332'537.581 millions

Situation 2



Design proposal reduction oriented first cost stage.
 Location: Close to the consumption area.

Total inversion:
\$133'597.095 millions



Conclusion

It is suggested that further detailed engineering research be carried out in order to propose more scenarios to achieve feasibility with a lower initial investment.