









## 5. CONCLUSION

It is known that in a developing country, such as Brazil, there are areas to be prioritized, such as public health, education, basic sanitation, etc. But in relation to the micro generation it would be interesting to create governmental or even private initiative programs so that citizens can get to know the operation of photovoltaic systems connected to the grid. The advantages they provide and the difficulties that may exist.

As the case study focused on the city of Curitiba, analyzes and estimates were made for the State of Paraná. Numerically the calculated results prove that the photovoltaic energy can be one of the alternatives for the decentralization of the energy generation, collaborating for the diversification of the State energy matrix.

Although distributed generation benefits the power grid in many respects, it is necessary to take into account some aspects intrinsic to its use. Questions about the control, penetration level of photovoltaic generation facilities, the types of technologies used, the configuration of the distribution network itself, the network protections, the ability of the grid to operate with bidirectional power flows, among other aspects, can interfere in the integration of generating units.

Therefore, like most of the sources of electricity generation, photovoltaic generation also impacts the environment and the structure of the current distribution network used in Brazil.

The economic and environmental advantages make it attractive to increase the use of this energy source in the Brazilian energy matrix.

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