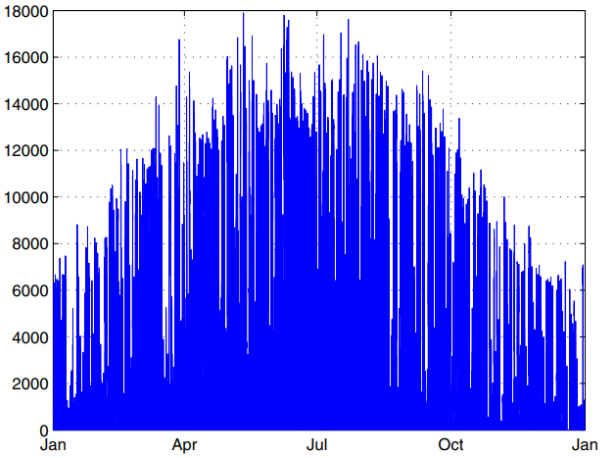

Fig.4. Solar energy generation (year)

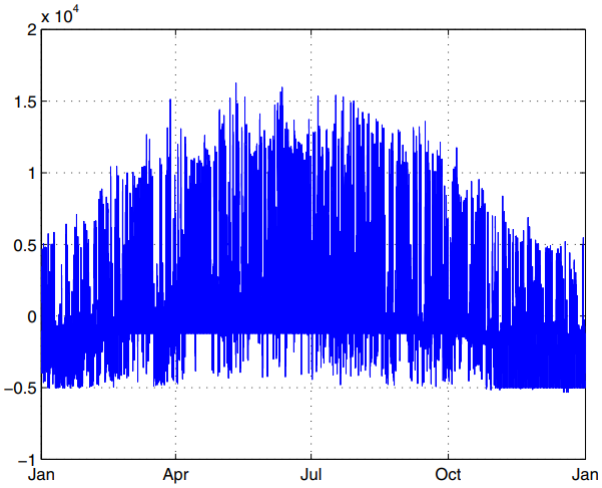

Fig.5. Different of supply/demand (year)

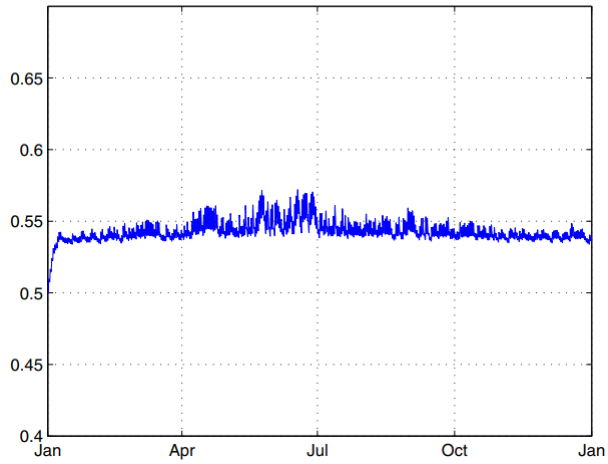

Fig.6. Battery – State of Charge (year)

5. Concluding remarks

In this paper, solar powered self-sustainable energy system with efficient energy usage is investigated. For such system energy management is optimised with the use of an intelligent controller. This work also described an optimal design and implementation of an efficient self-sustainable energy system with consideration of energy storage options for excess energy produced by renewable energy sources. The analysis presented in this paper is indicated that for small-scale system battery energy storage is a best option.

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