

7 CONCLUSION

The present world needs more secure and sustainable energy. Renewable energy plays a significant role here. Through this thesis, I discuss the energy and overviews in Bangladesh with economic status. Discussion about those is very important for the acceptance of this study. Very carefully selected the location of the study and calculated the energy need for the selected location. With Homer pro microgrid simulation software, from several hundred results, one possible combination is selected. The simulation outcome shows that 100 kW 34 wind turbines, 200 kW diesel generator and solar PV with other essential components can meet 100% of the electric demand of Nijhum islanders. Where max renewable fraction 86.5 %, which is a satisfying result. On the other side, the COE is acceptable, which is 0.108 dollars compare with the current electricity price in Bangladesh. NPC and operating cost 9,345,982 and 234,793 dollars, respectively. If no big natural digester occurs, it can be assumed that the financial investment will pay back within the project's lifetime. In the near future, it is possible to connect with the national grid connecting then only modification will need diesel generator.