

# SMART DEMAND RESPONSE SYSTEM FOR CONSUMERS

## ABSTRACT

Presenting a novel Energy Management System (EMS) for Kerala State Electricity Board (KSEB) focusing on integration of smart electrical and renewable energy and power exchanges. This Energy Management System facilitates inter-microgrid exchanges and energy scheduling for individual microgrids during isolation. This Smart Demand Response System is tailored for consumers, aiming to optimize energy consumption and enhance grid stability. Employing IoT technologies and machine learning algorithms, the system enables real-time monitoring and adaptive control of electrical devices. Through dynamic pricing mechanisms and personalized recommendations, consumers can make informed decisions to mitigate peak loads, reduce costs, and promote sustainable energy practices.

## REFERENCES

- [1] Seyed Ehsan Ahmadi, Navid Rezaei, "*A new isolated renewable based multi microgrid optimal energy management system considering uncertainty and demand response*", International Journal of Electrical Power & Energy Systems, Volume 118, 2020, 105760, ISSN 0142-0615,
- [2] S. Ghosh, X. A. Sun and X. Zhang, "*Consumer profiling for demand response programs in smart grids*," IEEE PES Innovative Smart Grid Technologies, Tianjin, China, 2012, pp. 1-6, doi: 10.1109/ISGT-Asia.2012.6303309.
- [3] P. Palensky and D. Dietrich, "*Demand Side Management: Demand Response, Intelligent Energy Systems, and Smart Loads*," in IEEE Transactions on Industrial Informatics, vol. 7, no. 3, pp. 381-388, Aug. 2011, Doi: 10.1109/TII.2011.2158841.
- [4] C. Verma and R. janggi, "*Smart Household Demand Response Scheduling with Renewable Energy Resources*," 2019 International Conference on Intelligent Computing and Control Systems (ICCS), Madurai, India, 2019, pp. 266-270, doi: 10.1109/ICCS45141.2019.9065908.
- [5] Mahmoud, Magdi Sadek, S. Azher Hussain, and Mohammad A. Abido, "*Modeling and control of microgrid: An overview*", Journal of the Franklin Institute, 351, no. 5, 2014, pp: 2822-2859.

***Guided by,***

Mrs. Neetha Chandran  
Asst. Professor, EED MBCET

***Co Guided by,***

Mr. Ayush Vijayan  
Asst. Professor, EED MBCET

***Submitted by,***

Archit S Thampi (Roll no. 07)  
Muhammad Faris S (Roll no. 18)  
Nevin Thomas John (Roll no. 20)  
Sravan A R (Roll no. 33)

