ing the level of integration of the wind power sustainable operation, which can greatly assist in lowering costs and improving the stability of wind power by reducing undesirable output power degradation and forecasting the demand for the coming year, which gives chance to handle maintenance schedules and reduction wind turbine and grid downtime. Consequently, the study's findings bring in a new era for Egypt's wind energy generation in terms of forecasting future energy demand and supply. Egypt, as a developing country, may benefit from this development to achieve its low-cost renewable energy generating targets. Furthermore, the findings may be extrapolated to similar meteorological areas throughout the country to illustrate the feasibility and economic worth of wind power potential.

REFERENCES

[1] Sunil Kr. Jhaa, Jasmin Bilalovicb, Anju Jhab, Nilesh Patelc and Han Zhangd" Renewable energy: Present research and future scope of Artificial Intelligence"
[2] Bimal K. Bose" Artificial Intelligence Applications in Renewable Energy Systems and Smart Grid – Some Novel Applications".
[3] https://www.britannica.com/science/energy.
[4] K. Rahbar, J. Xu, and R. Zhang, "Real-time energy storage management for renewable integration in microgrid: An off-line optimization approach," IEEE Trans. Smart Grid, 2015.
[5] W. Liu, J. Zhan, C. Y. Chung, and Y. Li, "Day-Ahead Optimal Operation for Multi-Energy Residential Systems with Renewables," IEEE Trans. Sustain. Energy, 2019.
[6] B. Jie, T. Tsuji, and K. Uchida, "Impact of renewable energy balancing power in tertiary balancing market on Japanese power system based on automatic generation control standard model," J. Eng., 2019.
[7] R. Pasupathi Nath, V. Nishanth Balaji." Artificial Intelligence in Power Systems"
[8] Stuart J. Russell, Peter Norvig (2010) Artificial Intelligence: A Modern Approach, Third Edition, Prentice-Hall ISBN 9780136042594.
[9] Wei Lee Woon • Zeyar Aung Stuart Madnick (Eds.) Data Analytics for Renewable Energy Integration Second ECML PKDD Workshop, DARE 2014 Nancy, France, September 19, 2014, Revised Selected Papers.
[10] A. Mellit and S. A. Kalogirou, ''Artificial intelligence techniques for photovoltaic applications: A review,'' Prog. Energy Combustion Sci., vol. 34, no. 5, pp. 574–632, Oct. 2008.
[11] Data Analytics for Renewable Energy Integration Second ECML PKDD Workshop, DARE 2014 Nancy, France, September 19, 2014, Revised Selected Papers.
[12] Michalski RS, Carbonell JG, Mitchell TM. Machine learning: An artificial intelligence approach. Berlin: Springer-Verlag; 1984.
[13] Hong, J. (2009). "The Development, Implementation, and Application of Demand Side Management and control (DSM+c) Algorithm for Integrating Micro generation System, within Built Environment". Ph.D. Thesis, University of Strathclyde, Glasgow, UK.
[14] C. J. Huang and P. H. Kuo, "Multiple-Input Deep Convolutional Neural Network Model for Short-Term Photovoltaic Power Forecasting," IEEE Access, 2019.
[15] Egypt New & Renewable Energy Authority. www.nrea.gov.eg.
[16] Modeling and Simulation of ICT Network Architecture for Cyber-Physical Wind Energy System, Mohamed A. Ahmed, [illegible] Kang, Young-Chon Kim.
[17] Table 3.1 V47–660 kW with OptiTip® and OptiSlip®.
[18] Development of Hardware-in-the-Loop-Simulation Testbed for Pitch Control System Performance Test by Jongmin Choon 2, Jinwook Kim, ORCID, Joohoon Lee, Kichang Lee, and Youngkin Choi 2.
[19] https://www.weather.gov/media/zhu/ZHU_Training_Page/winds/pressure_winds/pressure_winds.pdf..
[20] https://www.windml.org/windmill-vs-wind-turbine/.
[21] Alfred Joensen, He& Madsen. and Torben Skov Nielsen. "Nan-parametric statistical Ethods far wind power prediction", presented at EWEC '97. Dublin. Denmark.
[22] Wind Energy Explained Theory, Design and Application Second Edition J. F. Manwell and J. G. McGowan Department of Mechanical and Industrial Engineering, University of Massachusetts, USA.
[23] J. F. Manwell and J. G. McGowan "WIND ENERGY EXPLAINED. Theory, Design and Application, Second Edition".
[24] Alok Kumar Mishra and L. Ramesh," Application of Neural Networks in Wind Power (Generation) Prediction".
[25] M. Carolina Mabel and E. Fernandez." Analysis of wind power generation and prediction using ANN".