

VOL. 3, NO. 1  
ISSN 2581-5849  
INDEXED WITH J-GATE

# PDPU JOURNAL OF **ENERGY AND MANAGEMENT**

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*Dr. P. B. Sarolkar*

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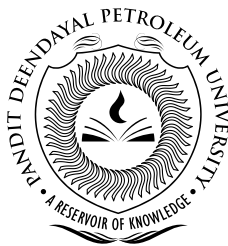
*Nisarg Shah*



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**PANDIT DEENDAYAL PETROLEUM UNIVERSITY**

Gandhinagar, Gujarat, India



## **PDPU JOURNAL OF ENERGY AND MANAGEMENT**

UGC APPROVED JOURNAL: NO. 63922

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PDPU JEM shall be published biannually.

All editorial correspondence should be addressed to the Chief Editor, C. Gopalkrishnan, School of Petroleum Management, Pandit Deendayal Petroleum University, Gandhinagar, Gujarat - 382007 or sent by mail to [jem.pdpu@pdpu.ac.in](mailto:jem.pdpu@pdpu.ac.in) or [jem.pdpu@gmail.com](mailto:jem.pdpu@gmail.com).

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#### **CONTACT DETAILS:**

**Dr. Ashutosh Muduli, Managing Editor**

School of Petroleum Management,  
Pandit Deendayal Petroleum University  
Gandhinagar, Gujarat - 382007, India.

E-mail: [jem.pdpu@pdpu.ac.in](mailto:jem.pdpu@pdpu.ac.in)  
[jem.pdpu@gmail.com](mailto:jem.pdpu@gmail.com)

#### **PUBLISHER'S DETAILS:**

Pandit Deendayal Petroleum University,  
Gandhinagar, Gujarat - 382007, India.

Telephone: +91 79-23275101

E-mail: [jem.pdpu@pdpu.ac.in](mailto:jem.pdpu@pdpu.ac.in)  
[jem.pdpu@gmail.com](mailto:jem.pdpu@gmail.com)

Website: <https://www.pdpu.ac.in>

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## EDITORIAL

We are pleased to present to you the Vth issue of PDPJ Journal of Energy and Management. The following are the highlights of the papers presented in the journal.

‘Geothermal as Energy Source for Remote Areas’ by Dr. P. B. Sarolkar discusses the geothermal energy status in India and suggests measures for development of geothermal resources in India. The paper further examines the prospects of utilization of hot springs in Gujarat. The author observed that in India, geothermal energy sources are mainly located along the Himalayan belt in the north, Son - Narmada - Tapi lineament in central India, West Coast, and Godavari valley. There are isolated hot springs reported from Gujarat, Jharkhand and North Eastern Region, mostly located in interior parts. The hot springs in India range from 30°C at Ladakh to 97°C at Tatapani, Chhattisgarh. The estimated reservoir temperature in geothermal fields in India ranges from 110°C in West Coast to >200°C at Puga, Ladakh. The geothermal resources in these areas are a potential source of energy as a substitute to electricity, as well as for direct heat uses, like spa, hot water baths, space heating, food processing, green house cultivation, and aquaculture concludes Dr. Sarolkar.

In the second paper, Rashmi Singh, Madhu Sharma, and Chandan Banerjee explain ‘Performance monitoring of high-efficiency Moxon™ based SunPower PV plant in the composite climate of India’. The paper presents a case study of long-term performance monitoring of high-efficiency Moxon™ based SunPower solar plant installed at the National Institute of Solar Energy, Gurugram, India. The paper also focuses on the suitability of high-efficiency SunPower solar technology in the composite climate of India by the analysis of the Performance Ratio (PR) and Thermal normalized PR (PRSTC). The authors also explain estimation of the thermal factor, as well as spectrum factor. The paper found that the average PR and the PRSTC found to be maximum in June and minimum in December months. PR of the SPV system correlates with the four seasons and temperature of the SPV module, as the key feature of assessment. It has been found out that the range of PR is 0.94-0.96 during winter, 1-1.01 during summer, and 0.95-0.98 during the post-monsoon and 0.93-0.98 during Monsoon.

The third paper on ‘Solar Distillation System with Nano Particle: A Review’ by Ruchir Parikh, and Dr. Umang Patdiwala focuses on different desalination methods and improvements, which are needed to commercialize these methods. The paper also discusses different parameters that affect the performance of the distillation system. From among the different desalination techniques and desalination methods which integrate renewable sources of energy, the authors summarized that solar desalination is the most effective technique as it does not require external power or any other conventional energy sources. Solar desalination is also effective in the remotely located area, where energy and water are not easily accessible or are costly to meet the requirements of people.

The fourth paper on ‘Achieving Inclusive Development through Smart Village’ by Anand Singh and Megh Patel discusses the upcoming urban development projects focused on developing smart cities and observes that development of smarter villages have been ignored so far. Cities are being crowded at an unprecedented pace globally, 30% of the world’s population was urban in 1950 with a projection of 66% by 2050. Lack of basic amenities and limited economic growth in villages lead toward uncontrolled migration from rural to urban area. Current scenario of urban living shows cities are struggling to cope up with the basic infrastructure like transportation, healthcare, housing and utilities. 30% of urban residents are living in slums. Rural development focusing on development of smarter villages will avoid further migration and can help to bring a balance to the entire ecosystem.

Finally, the paper ‘Analysis of the Key Factors Affecting Levelized Cost of Electricity of Solar PV in India’ by Nisarg Shah discusses the recently introduced reverse auction process by the government of India which helps in reducing the tariff of power from Solar PV below Average Power Purchase Cost (APPC). The author commented that although such low tariff has raised doubt about the viability of solar PV project considering the high cost of debt prevailing in India. Further, the recently set target of deployment of 100 GW of Solar PV by the year 2022 in India may lead to around \$100Bn investment. Under this condition, it is important to analyse the impact of various sets of factors affecting the levelled cost of electricity. This analysis will be helpful to investors for avoiding the problem of underbidding and/or overbidding. This analysis is also helpful to policy makers for maintaining the competitive nature of markets as well as the sustainability of the market.

Wishing all the readers of the Journal a very Happy 2019.

- C. Gopalkrishnan