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## Coals seam gas (CSG) and its application in agriculture industry

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Coalbed methane (CBM) or coal seam gas (CSG) as it is known in Australia is becoming an increasingly important source of energy around the world. Many countries such as United States, Canada, Australia and China are investing in the CSG industry. Arise in the cost of conventional natural gas and many other energy resources, along with a decline in these conventional resources and issues such as climate change have encouraged a global interest in alternative resources of energy like CSG. The estimated quantity of CSG worldwide is around  $1.4 \times 10^{14}$  m<sup>3</sup>, it is clear that coal seam gas is a significant source of energy. CSG can be the alternative fuel for high fuel-consumption industries such as agriculture. In this article, a technical analysis was conducted to show the potential of natural gas in replacing diesel in agriculture. A comparison of different conversion methods such as dual-fuel and mono-gas systems is undertaken. Data was collected from a number of sources to determine the potential demand for natural gas in the agricultural sector in Queensland (QLD) and New South Wales (NSW). Also, a conversion cost analysis is conducted. Analysis finds compressed natural gas (CNG) to be the preferred alternative fuel to diesel engines in the agricultural sector.

### Biography

Talal Yusaf is currently the Executive Director of the International and Development at the University of Southern Queensland and Professor in the Faculty of Health Engineering and Sciences. He is also leading the bioenergy/biofuel research group at the National Centre for Engineering in Agriculture, Australia. From 2010 - 2013, he led the International Sponsorship and Research Partner (ISERP) team at USQ. He obtained his first PhD on Alternative Energy from UKM and the second PhD on Biomechanical Engineering from his current University (USQ). He is the Editor/guest Editor of excellent international Energy journals (Energy, Applied Energy, Energies) with extensive publications in high ranked international journals. He is also visiting/Adjunct Professor at International Universities such as University College London UCL, University Malaya UM and University Malaysia Pahang UMP.

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## Mesozooplankton community structure in a degrading mangrove ecosystem of Kerala, India

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This contribution presents the diversity, abundance and community structure of mesozooplankton from 10 hydrographically different mangrove ecosystems in Cochin. Eleven zooplankton groups were identified, of which copepods (62%) formed the predominant population followed by Crustacean nauplii (22%) and mysids (12%). Nutrient limiting (N:P ratio  $5.13 \pm 7.03$ ) with mixo-mesohaline salinity conditions ( $8.96 \pm 3$  ppt) and relatively low temperatures ( $30.28 \pm 0.9$  °C) was a characteristic feature of the study zones. Non-metric Multidimensional Scaling (NMDS) based on Bray-Curtis similarity (PRIMER) analysis revealed that there was not much variations in the mesozooplankton structure among stations (Stress 0.05; ANOSIM test Global R:0.325, P=19%). BEST (Bio-Env + Stepwise) analysis indicated that temperature and salinity showed best correlation (0.696) with fauna. Hence, from our observation, it is clear that, the zooplankton communities were getting depleted due to shallowness and unfavourable environmental condition of water bodies as a result of human intervention.

### Biography

Sreelekshmi S is UGC Junior Research Fellow perusing her PhD in the Department of Marine Biology, Cochin University of Science and Technology. She has 3 years of research experience.

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