

IEPRe NEWSLETTER

Volume 2: Issue 1, 2022

WELCOME

TO
ENERGY POLICY
NEWSLETTER

We are pleased to provide you with Issue 1 for the year 2022.

Within this issue, IEPRe includes the most recent information from our institution from January through July 2022, as well as a variety of viewpoints for a better understanding of energy.

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Highlights :

- Idea Generation Session (IGS) - Project Ideation Workshop with Energy Commission
- Launching of National Energy Centre (NEC)



IEPRe
Institute of Energy Policy and Research

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IEPR_e



UNITEN

Idea Generation Session (IGS) with Energy Commission

By Dr Norsyahida Binti Mohammad



Friday, 25th February 2022 - A Project Ideation Workshop was co-organized between The Institute of Energy Policy and Research (IEPR_e) and the Energy Commission to discuss the potential research topic to be executed under the Chair of Energy Economics of Energy Commission at UNITEN for the 2022-2023 term.

The welcoming remark was given by Encik Abdul Razib Bin Dawood, the CEO of the Energy Commission, followed by an introductory briefing by Ts. Dr. Siti Indati Binti Mustapa, the Director of IEPR_e.



Encik Abdul Razib Bin Dawood, the CEO of the Energy Commission gives his insights on the research areas pertinent to the current energy dilemma

Interactive discussion with Professor Dr. Ken Koyama, Chair of Energy Economics, live from Japan



The discussion was initiated by a brief presentation of the five potential research topics, followed by comments from The Chair in Energy Economics of Energy Commission at UNITEN, Professor Dr. Ken Koyama via the virtual meeting platform, Microsoft Teams. Variable renewable energy, high dependency on coal, acceptance of smart meters, best power generation mix, and electric mobility were among the topics discussed.

The workshop was attended by IEPR_e members and representatives of various units of the Energy Commission, led by Encik Hilmi bin Ramli, the Head of the Strategic Planning and Communication Unit. The two hours discussion session was concluded by the Director of IEPR_e, after a brief discussion on the objectives, deliverables, and milestones of the proposed project.



Dr Siti Indati Binti Mustapa, the Director of Energy Policy & Research (IEPR_e) raises her concern on the security of energy supply

IEPR_e hopes to continue leading research in areas related to energy policy, energy security, and energy economics, intending to provide beneficial analysis and policy recommendations for Malaysian energy stakeholders.



Soft Launching of National Energy Centre (NEC)

By Dr Norsyahida Binti Mohammad

Thursday, 30th June 2022 -The NEC houses five energy centres of excellence - Institute of Energy Policy & Research (IEPR_e), Institute of Sustainable Energy (ISE), Institute of Power Engineering (IPE), Institute of Energy Infrastructure (IEI), and Institute of Informatics & Computing in Energy (IICE), forming a Strategic National Energy Framework with the aspiration of Malaysia as the regional energy hub and core for strategic industrial collaborations.



The soft launching of NEC was held at DK1, College of Computing and Informatics, UNITEN Putrajaya Campus. The establishment of NEC is timely as Malaysia aims to achieve net zero GHG emissions by 2050.

The Energy and Natural Resources (KETSA) Minister Datuk Seri Takiyuddin Hassan explained that the establishment of NEC in UNITEN was a proactive effort of higher education institutions to contribute expertise to the national development agenda which includes the efforts of increasing RE capacity and dealing with carbon emissions.

The NEC is expected to contribute to the 12th Malaysia Plan (2021-2025), particularly in supporting the long-term strategic direction toward carbon neutrality and emissions reduction to 45% of GDP by 2030 in line with the Paris Agreement.



Housing five energy centres of excellence including the Institute of Energy Policy & Research (IEPR_e), NEC intends to serve as the hub and core for strategic industrial collaborations.



The initial launch of the NEC at UNITEN Putrajaya Campus was jointly officiated by the Deputy Minister of Energy and Natural Resources (KeTSA), Datuk Ali Biju, and his counterpart at the Ministry of Science, Technology and Innovation (MOSTI), Datuk Ahmad Amzad Hashim.

IEPRe is thrilled to be part of the NEC, a unified platform of energy research, backed by competitive talents, expertise, and state-of-the-art facilities with an emphasis on strategic research partnerships. IEPRe believes that the transdisciplinary research culture at NEC is the key to delivering innovative solutions to energy stakeholders in Malaysia, particularly in the six focus areas of IEPRe which includes Energy Economics, Energy Security, Energy Policy, Energy & Environment, Energy & Social Sustainability and Energy Supply Industry.

National Energy Centre (NEC)



Located in UNITEN Putrajaya Campus, the establishment of NEC is timely to spearhead transdisciplinary research related to the energy transition towards net zero by 2050

29th | 30th | AUGUST 2022
KUALA LUMPUR CONVENTION CENTRE

3 IEPRe
 UNITEN

By Dr Norsyahida Binti Mohammad

Deep-dive Workshop 8 (DDW8) Youth Empowerment: Save for the Future

UNITEN via IEPRe has been entrusted to organize the Deep-dive Workshop 8: Youth and Empowerment: Save for the Future as part of the 5th International Sustainable Energy Summit (ISES 2022). ISES 2022 is organized by the Sustainable Energy Development Authority (SEDA) Malaysia in collaboration with the Ministry of Energy and Natural Resources (KeTSA).

The one-hour and 30 minutes Deep-dive Workshop 8 (DDW8) session will be chaired by Dr. Hezri Adnan, Adjunct Professor at Universiti Tenaga Nasional and the Executive Director of the Malaysian Institute of Economic Research (MIER).

The panelists of the session are Mr. Eqram Mustaqeem, a Capacity Building Member of the Malaysian Youth Delegation for Climate Change, Ilanur Elyssa Bart Aswain, the President of the Economics, Energy, Environmental & Sustainable Club (3ESC) UNITEN, Prof. Ir. Dr. Izham Zainal Abidin, Dean of College of Engineering, UNITEN and Assoc. Prof. Dr. Mohd Mursyid bin Arshad from Universiti Putra Malaysia (UPM).

The DDW8 aims to inspire and increase the engagement of youth in energy transitions by discussing their role, opportunity, and challenges in the energy sector towards sustainability and saving the future of energy.

We believe that youth are valuable contributors to the energy transition and can be an important positive force for change when they are engaged and empowered. On behalf of the organizing secretariat, IEPRe invites you to join ISES 2022, with the theme "Empowering Energy Transition", which will be conducted from 29 to 30 August 2022 at the Kuala Lumpur Convention Centre (KLCC).

DDW8 Chair & Panelists


Dr Hezri Adnan

 Adjunct Professor at UNITEN
 Executive Director of Malaysian Institute
 of Economic Research (MIER)

Prof. Ir. Dr. Izham Zainal Abidin

 Dean
 College of Engineering, UNITEN

Assoc. Prof. Dr. Mohd Mursyid Arshad

 Department of Professional
 Development & Continuing Education
 Universiti Putra Malaysia (UPM)

Eqram Mustaqeem

Malaysian Youth Delegation


Ilanur Elyssa Bart Aswain

 President of Economics, Energy
 Environmental & Sustainable
 Club (3ESC), UNITEN

 More info on DDW8 at
<https://www.ises.gov.my/programme/>
 Register for ISES 2022 here:


Perspectives: The Potential of Blockchain Technology in the Energy Sector

By Dr Noor Raida Binti Abd Rahman

The energy sector is in transition and is facing several challenges associated with integrating distributed renewable energy sources into the existing centralised energy system. Blockchain technology can play a significant role in providing secure digital distributed platforms, facilitating digitization, decarbonization, and the decentralisation of energy systems.

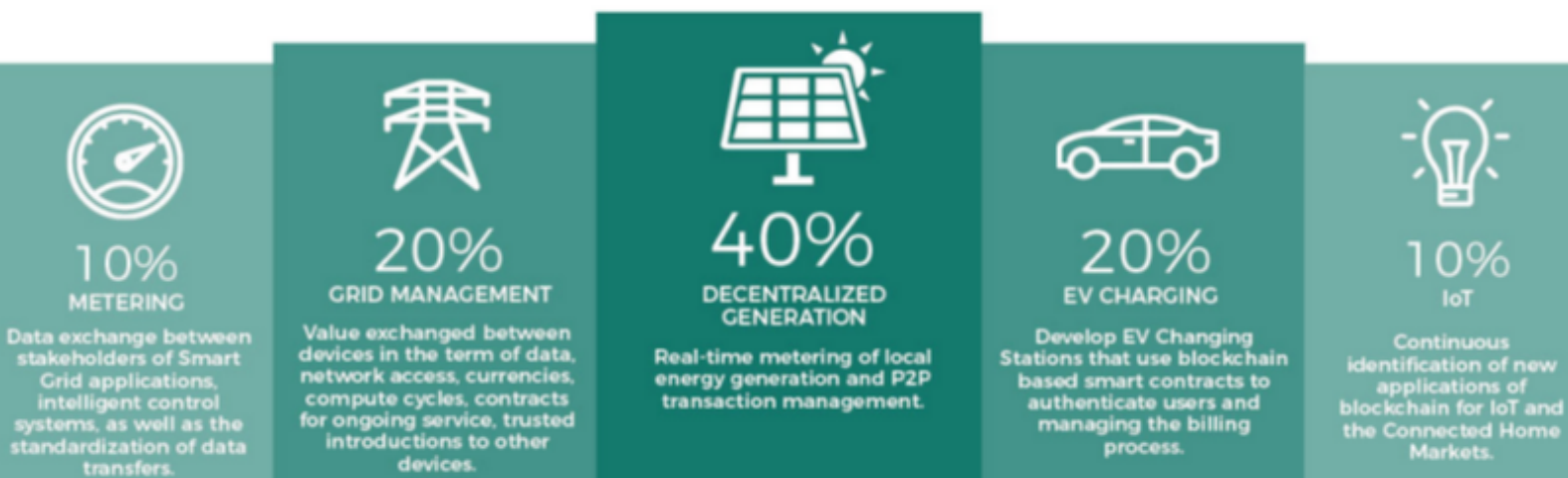
Blockchain technology can be described as a digital and distributed ledger for transactions where data used in communication or transactions is stored in a publicly available network of digital blocks. Initially, it serves as the framework for cryptocurrency.

However, it is slowly making waves in many industries, including the energy sector. The application of blockchain technology in the energy field refers to the energy blockchain. It combines traditional energy with new energy based on blockchain technology, which can encourage more efficient use of traditional energy and accelerate the widespread use of new energy.

Decentralization, transparency, immutability, traceability, privacy, authenticity, and automation are the favorable features of blockchain that promote its application in the energy field.

The potential of blockchains in the energy sector has just started to be realised, as shown by the increasing number of startups, pilots, trials and research projects. The current state of energy blockchain applications in energy scenarios, as well as the greatest potential for the future, can be summarised as follows ;

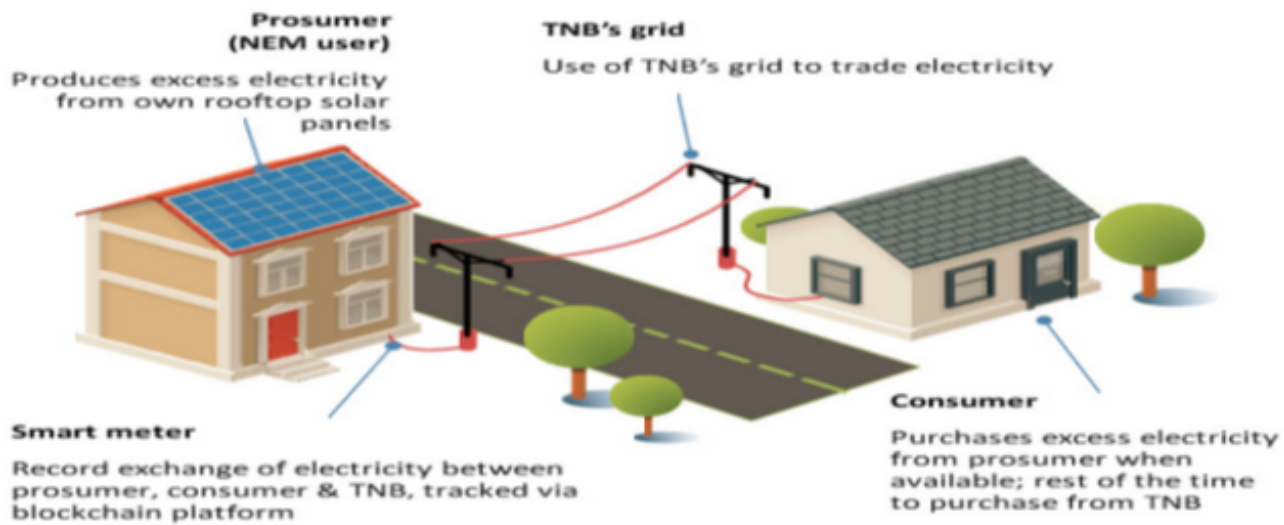
EMERGING ENERGY BLOCKCHAIN USE CASES



Sources: Zigurat Innovation & Technology Business School

VISIT OUR WEBSITE FOR INFO ON CURRENT NEWS AND PUBLICATION!

By Dr Noor Raida Binti Abd Rahman

 CONCEPT OF
P2P ENERGY
TRADING PILOT
RUN IN
MALAYSIA


Blockchain for P2P Energy Trading and Decentralized Generation

The majority of blockchain energy projects are focusing on building a peer-to-peer (P2P) grid network and generating energy in a decentralised manner. By using blockchain, P2P transactions can be managed and local energy generation can be measured in real-time. In Malaysia, P2P is one of the strategies to be explored under the Renewable Energy Transition Roadmap (RETR) 2035 study being undertaken by the Sustainable Energy Development Authority Malaysia (SEDA) to augment the solar PV rooftop market.

Grid Management

Blockchain technology potentially offers a solution for various issues related to decentralised energy grids' coordination means. For instance, blockchains provide real-time monitoring of smart meters. When blockchain is incorporated into smart meters, the electricity generated and consumed will be recorded into a distributed ledger. Another example is that blockchain technology can be applied to the automated execution of smart contracts in peer-to-peer (P2P) networks. Given their ability to protect customer data, blockchains can locally streamline multi-party settlements, bulk customization of complex contracts, and direct cross-device offerings.

Electric Vehicle Charging

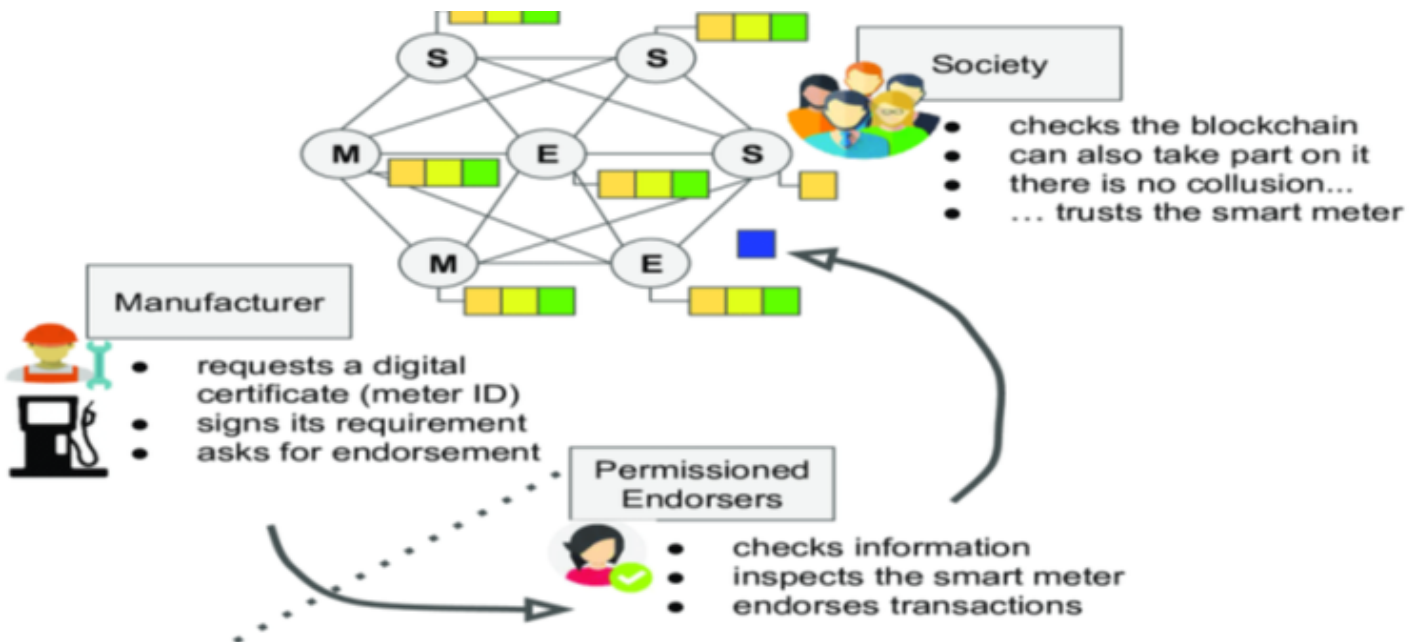
Blockchain is also being tested in electric vehicle (EV) charging facilities, where it will enable access to all charging points for EV drivers by creating a network of EVs and charging facilities and creating an easy payment and efficient settlement process between all stakeholders. According to the Guidehouse Insights Report, the blockchain-based EV charging and grid integration market is expected to experience a 78% compound annual growth rate from 2020–2029. Powered by RISE (Emergence Innovative Sdn Bhd) is the Malaysian market's only charging station operating on blockchain technology.

Metering

Automated billing for consumers and distributed generators can be carried out with the application of blockchain for smart contracts and smart metering. Integrated metering infrastructure and automated billing potentially reduce administrative costs and the probability of mistakes and fraud.

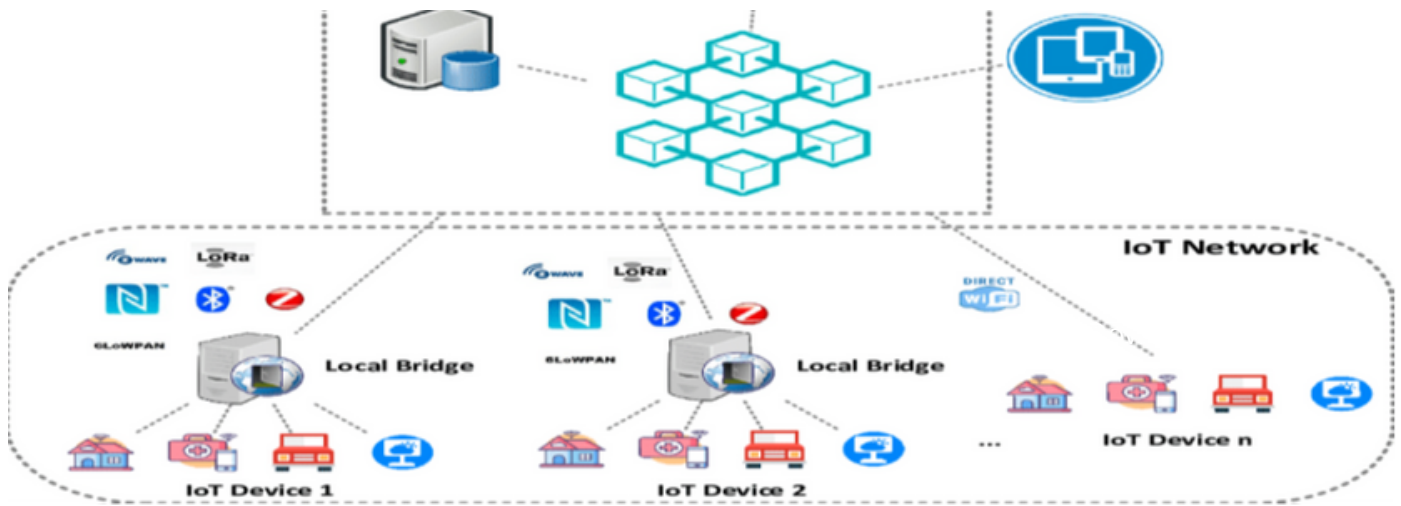
VISIT OUR WEBSITE FOR INFO ON CURRENT NEWS AND PUBLICATION!

By Dr Noor Raida Binti Abd Rahman



Internet of Things (IoT)

Automated billing for consumers and distributed generators can be carried out with the application of blockchain for smart contracts and smart metering. Integrated metering infrastructure and automated billing potentially reduce administrative costs and the probability of mistakes and fraud.



Way Forward

Mainly due to its infancy stage of technological development and low level of industrial application, blockchain is hampered by various obstacles on its way to being widely implemented within the energy sector. For blockchain technology to play a bigger role in the energy field, there is still a need for more research to understand the full capacity of the technology and its applications. More business model innovations for the energy sector are needed, and the application of blockchain should be accompanied with improvement measures according to the needs of specific scenarios. IEPre plays a vital role in assisting the government to implement a supportive policies for such innovative solutions and energy policies related to blockchain technology that have the potential to revolutionise the energy market.

VISIT OUR WEBSITE FOR INFO ON CURRENT NEWS AND PUBLICATION!

Publication of Journal Article

By Dr Amar Hisham Jaaffar

The Relationship Between Leadership Style and Turnover Intention of Nurses In The Public Hospitals of Jordan

Alkarabsheh, O. H. M., Jaaffar, A. H., Wei Fong, P., Attallah Almaaitah, D. A., & Mohammad Alkharabsheh, Z. H. (2022), Cogent Business & Management, 9(1), 2064405.

<https://doi.org/10.1080/23311975.2022.2064405>

This paper aimed to empirically determine the significant relationships between transformational leadership, authentic leadership and turnover intention among registered nurses (RNs) working in Jordanian public hospitals.

Kesan Pandemik COVID-19 Terhadap Jaminan Bekalan Makanan di Malaysia (Implication of COVID-19 pandemic on food security in Malaysia)

Ali, N. I. M., Aiyub, K., Kuok-Choy, L., Kasavan, S., Siron, R., & Ali, S. S. S. (2022), Malaysian Journal of Society and Space 18 issue 2 (155-171)

<https://doi.org/10.17576/geo-2022-1802-12>

This paper discussed in depth the impact of the COVID-19 pandemic on food security in Malaysia, especially in terms of food supply and demand.

Implikasi Pandemik COVID-19 Terhadap Penjanaan Sisa Pepejal Semasa Perintah Kawalan Pergerakan di Semenanjung Malaysia (Implications of COVID-19 Pandemic on Solid Waste Generation during Movement Control Order in Peninsular Malaysia)

Kasavan S., Ali N. I. M., Ali S. S. S., Yusoff S. & Siron R. (2022), Akademika 92(1), 2022: 179-194

<https://doi.org/10.17576/akad-2022-9201-14>

This paper examined the research gap by conducting research based on the implications of the COVID-19 pandemic for solid waste generation during MCO and the month of Ramadan in Malaysia.

The Mediating Effect of Fatigue on the Nature Element, Organisational Culture and Task Performance in Central Taiwan

Alkharabsheh, O.H.M.; Jaaffar, A.H.; Chou, Y.-C.; Rawati, E.; Fong, P.W. (2022), . Int. J. Environ. Res. Public Health 2022, 19, 8759

<https://doi.org/10.3390/ijerph19148759>

This paper seeks to investigate the effects of the nature element and organisational culture on the task performance of employees with fatigue as a mediator.

Determinants of Residential Consumers' Acceptance of a Utility-Scale Battery Energy Storage System in Malaysia: Technology Acceptance Model Theory from a Different Perspective.

Jaaffar, A.H.; Majid, N.A.; Alrazi, B.; Ramachandaramurty, V.K.; Dahlan, N.Y. (2022), Energies 2022, 15.

The paper aim to investigate the factors affecting acceptance by Malaysian residential consumers of BESS as it relates to the Technology Acceptance Model Theory.

Hydrogen-rich Syngas Production from Bi-reforming of Greenhouse Gases Over Zirconia Modified Ni/MgO Catalyst

Farooqi, A. S., Yusuf, M., Zabidi, N. A. M., Saidur, R., Shahid, M. U., Ayodele, B. V., & Abdullah, B. (2022), *International Journal of Energy Research*, 46(3), 2529-2545.

<https://doi.org/10.1002/er.7325>

In this paper, the influence of ZrO₂ modifications on the activity and stability of MgO-supported Ni catalyst in the BRM reaction was investigated.

Interaction Effect of Process Parameters and Pd-electrocatalyst in Formic Acid Electro-oxidation for Fuel Cell Applications: Implementing Supervised Machine Learning Algorithms

Hossain, S. S., Ali, S. S., Rushd, S., Ayodele, B. V., & Cheng, C. K. (2022), *International Journal of Energy Research*

<https://doi.org/10.1002/er.7602>

In this paper, machine learning algorithms namely Support Vector Machine (SVM) regression, Regression Trees, and Gaussian Process Regression (GPR) were configured for modeling the effect of palladium supported on carbon nanotube used for formic acid electro-oxidation.

Elucidating The Effect of Process Parameters on The Production of Hydrogen-rich Syngas by Biomass and Coal Co-gasification Techniques: A Multi-criteria Modeling Approach

Bahadar, A., Kanthasamy, R., Sait, H. H., Zwawi, M., Algarni, M., Ayodele, B. V., ... & Wei, L. J. (2022), *Chemosphere*, 287, 132052.

<https://doi.org/10.1016/j.chemosphere.2021.132052>

This paper aimed to employ various machine learning algorithms such as regression models, support vector machine regression (SVM), gaussian processing regression (GPR), and artificial neural networks (ANN) for modeling hydrogen-rich syngas production by gasification and co-gasification of biomass and coal.

Circular Economy Framework for Energy Recovery in Phytoremediation of Domestic Wastewater

Mustafa, H. M., Hayder, G., & Mustapa, S. I. (2022), *Energies*, 15(9), 3075.

<https://doi.org/10.3390/en15093075>

This article studied the possibilities of using the CE framework in wastewater bioremediation and energy recovery using hydroponic tanks.

Drivers of Food Waste Generation and Best Practice Towards Sustainable Food Waste Management In The Hotel Sector: A Systematic Review

Kasavan, S., Siron, R., Yusoff, S., & Fakri, M. F. R. (2022), *Environmental Science and Pollution Research*, 1-16.

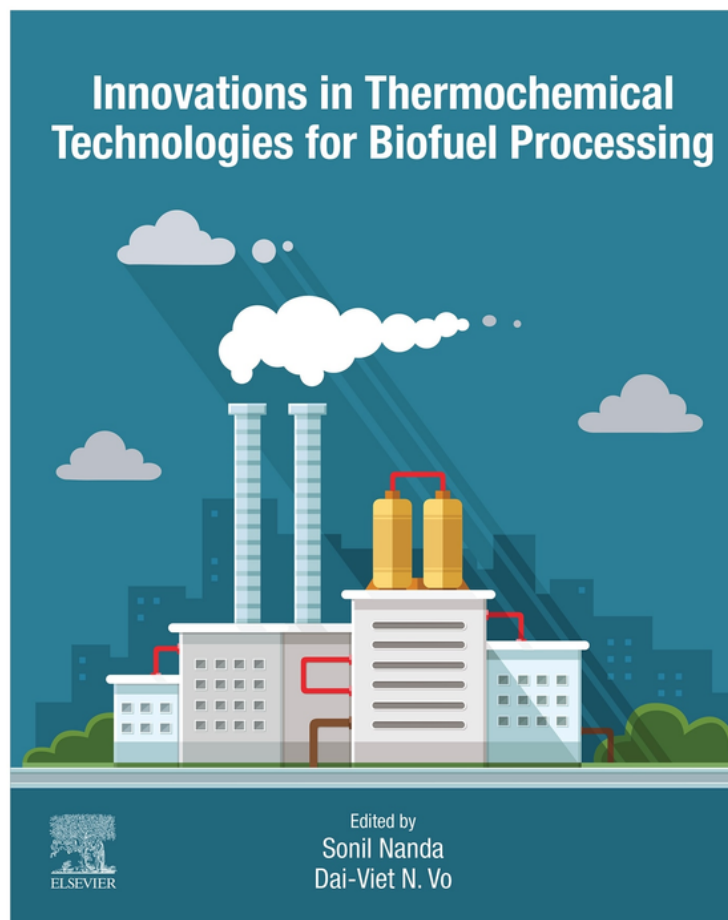
<https://doi.org/10.1007/s11356-022-19984-4>

This systematic review focuses on food waste issues in the hotel sector to identify food waste generation drivers and good business practices towards mitigating food waste.

Publication of Book Chapter

By Dr Amar Hisham Jaaffar

Title : Innovations in Thermochemical Technologies for Biofuel Processing



Chapter : Thermochemical valorization of oil palm biomass to value-added products: A biorefinery concept

Authors : Ayodele, B. V., Mustapa, S. I., Alsaffar, M. A., Cheng, C. K., & Patinvoh, R. J.

Year Published : 2022

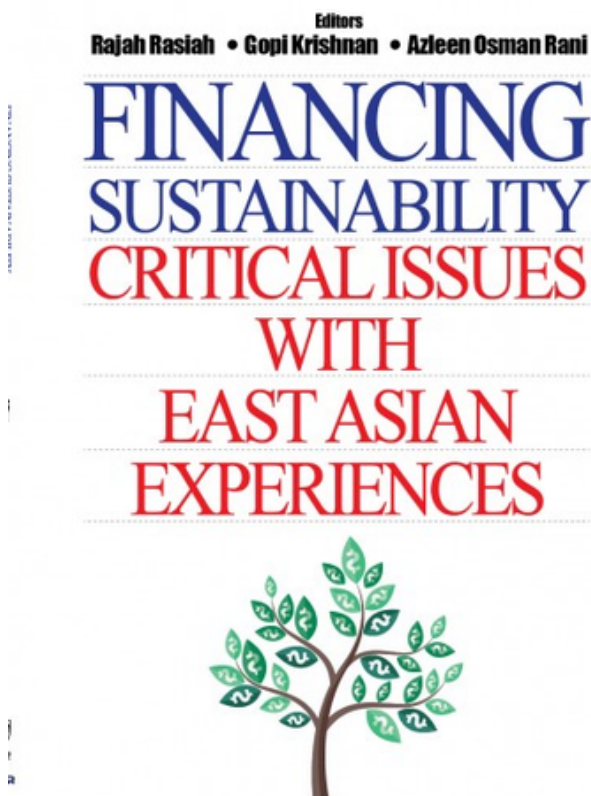
ISBN : 978-0-323-85586-0

Abstract : Several tons of biomass waste are often generated from oil palm plantations as well as during the processes. These biomasses range from empty fruit bunches, mesocarp fibers, palm kernel shells, and palm oil mill effluent. If left unutilized, these waste biomasses could constitute a health risk to the environment. The thermochemical process is a technological process of valorizing the various oil palm biomass (OPB) to value-added products. The applications of different thermochemical processes such as pyrolysis, gasification, reforming, and hydrothermal liquefaction that has been used for converting OPB waste to valuable products were examined. To effectively optimized resource utilization from each of the standalone thermochemical valorization processes, a biorefinery concept is proposed.

Publication of Book Chapter

By Dr Amar Hisham Jaaffar

Title : Financing Sustainability. Critical Issues With East Asian Experiences



Chapter : Energy Consumption and Greening: Strategic direction for Malaysia

Authors : Rasiah, R., Mustapa, S.I., and Jaaffar, A.H.

Year Published : 2022

ISBN : 978-967-488-210-5

Abstract : In a developing country such as Malaysia, studies of determinants which influence residential consumers of the Battery Energy Storage System (BESS) are limited. This paucity of studies was the catalyst for this study and its aim to investigate the factors affecting acceptance by Malaysian residential consumers of BESS as it relates to the Technology Acceptance Model Theory. A sample of 331 residential consumers indicated that consumer attitudes, social norms and self-efficacy, or the perception of behavioral control, had a positive and significant relationship with the intention to use BESS. Additionally, trust was a factor had a significant effect on the consumers' perceptions of cost, benefits and anticipated effects. All these variables significantly affect consumer attitudes.

IEPRE Family Board

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 **UNITEN MAIN CAMPUS**

Bulletin



Moving



New Member



Farewell



Contact Us



Move to New Building

IEPRE Temporary Office - Administration Building

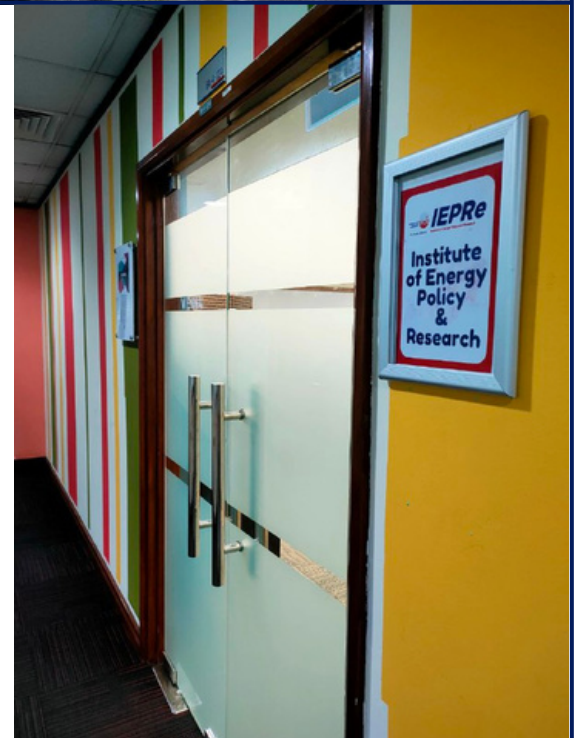


IEPRE Move to Temporary Office

**From SQ3 & SQ4 to Administration Building
BA-04-024 & BA-04-063**

Institute of Energy Policy and Research (IEPRE) is currently located at Level 4, Room BA-04-024 and BA-04-063, in Administration Building as a temporary office before National Energy Centre (NEC) is ready for operation.

It is estimated that in October, IEPRe will be moving to the National Energy Centre (NEC) building



**NEC is still
in progress**



Farewell



Dr Hasmaizan Binti Hassan
2018 - May 2022



Dr Zeittey Karmilla Binti Kaman
2018 - May 2022



Dr Ayodele Bamidele Victor
Jan 2019 - May 2022



With love and du'a, we bid our farewell
to our members.

Thank you all for the memories we've
shared. We wish you great
accomplishments in your career and family.



Welcome to New Family Members

Dr Noor Raida graduated for her Doctor of Philosophy (Accounting) in Universiti Teknologi Malaysia (UTM), Kuala Lumpur.

Her research interest includes carbon reporting, carbon performance, corporate governance, earnings management, financial performance, working capital management.



Core Member

Dr Noor Raida Binti Abd Rahman



Research Officer

Amalia Nabilla Binti Azman

Our Research Officer, Amalia Nabilla graduated from International Islamic University Malaysia (IIUM) for both of her bachelor and master degree. She studied Bachelor of Economics and Master of Economics, specializing in International Economics and Trade.

We welcome our new member, Dr Noor Raida and Amalia Nabilla as part of IEPR team.

Hope we all could get along and contribute to each other betterment.

UPCOMING EVENTS

ISES 2022

Events

ISEBA 2022



Hosted by:  

Organised by: 

International Sustainable Energy Summit
ISES
2022 Empowering Energy Transition

5th ISES 2022
EMPOWERING ENERGY TRANSITION
29th | 30th | **AUGUST 2022**
KUALA LUMPUR CONVENTION CENTRE

JOIN US!

Endorsed by:  

Funded by: **AAIBE**

www.ises.gov.my

The poster features an illustration of a globe, solar panels, and people working together, symbolizing energy transition and collaboration.

DDW8

Deep-dive Workshop 8 Youth Empowerment : Save for The Future

Date
: 30th August 2022

Day
: Tuesday

Venue
: Kuala Lumpur Convention Centre

Co-Organiser
: Institute of Energy Policy and Research (IEPre), UNITEN

ISEBA 2022

Date
: 28th September 2022

Day
: Wednesday

Venue
: UNITEN, Sultan Haji Ahmad
Shah Campus

Organiser
: College of Business and
Administration (COBA),
UNITEN



Virtual
**INTERNATIONAL
SYMPOSIUM & EXHIBITION ON
BUSINESS AND ACCOUNTING 2022**

28 SEPTEMBER 2022
UNITEN, SULTAN HAJI AHMAD SHAH CAMPUS

Co-organiser:
 

The banner features a background of a hand holding a smartphone with a glowing globe and various digital icons, representing a virtual event.

**Check out our next newsletter Issue 2
by December 2022**

CONTACT US

Institute of Energy Policy and Research (IEPR)

Email: iepre@uniten.edu.my

NEWSLETTER COMMITTEE

Advisor/Editor :

Ts Dr Siti Indati Binti Mustapa @ Jaafar

Chief Editor :

Dr Muhummad Khairul Islam

Contributor :

Ts Dr Amar Hisham Bin Jaaffar

Dr Noor Raida Binti Abd Rahman

Dr Norsyahida Binti Mohammad

Nurul Syuhadah Binti Yakath Ali

Designer :

Amalia Nabilla Binti Azman