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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : PROSIDING

Judul Karya Ilmiah : Quantitative Risk Analysis for Oil and Gas Projects: A Case Study
 Jumlah Penulis : 2 Orang (**J U D Hatmoko***, R R Khasani)
 Status Pengusul : Penulis pertama
 Identitas Prosiding : a. Judul Prosiding : IOP Conference Series: Earth and Environmental Science 448 (2020), 1st International Conference on Environment, Sustainability Issues and Community Development, INCRID 2019 Volume 448 (2020) 012073, pages: 1-9
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 f. Terindeks di (jika ada) : Scopus, SJR 0.179

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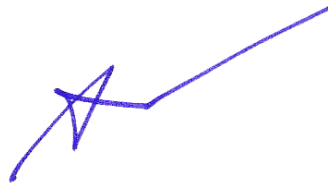
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c. Kecukupan dan kemutakhiran data/informasi dan metodologi (30%)	8.00	8.00	8.00
d. Kelengkapan unsur dan kualitas terbitan /prosiding (30%)	8.00	9.00	8.50
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Nilai pengusul = 60% x 26.50 = 15.90			

Reviewer 1



Prof. Dr. Ir. Syafrudin, CES., M.T.
 NIP. 195811071988031001
 Unit Kerja: Departemen Teknik Lingkungan FT UNDIP

Reviewer 2



Prof. Ir. Mochamad Agung Wibowo, M.M., M.Sc., Ph.D.
 NIP. 196702081994031005
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d. Kelengkapan unsur dan kualitas terbitan /prosiding (30%)	9.00		8.00
Total = (100%)	30.00		27.00
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Kelengkapan dan kesesuaian unsur sudah lengkap sesuai template, yaitu terdiri dari judul, abstrak, pendahuluan, metode, pembahasan, kesimpulan, dan referensi. Artikel tidak sesuai bidang ilmu pengusul/anggota penulis walaupun masalah yg diangkat penulis pada paper pendekatan administratif pada persoalan lingkungan.

2. Tentang ruang lingkup dan kedalaman pembahasan

Isi artikel berkaitan dengan analisa resiko kuantitatif proyek pembangunan instalasi gas dan oli. Metode dan langkah yang dilakukan cukup jelas. Data-data yang ditampilkan cukup banyak, jelas dan detail yang dilengkapi dengan grafik dan gambar guna memperjelas pembahasan.

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Artikel ini memiliki nilai kebaharuan yang kurang yang didukung dengan 31 referensi jurnal internasional (2002 sd 2017) sehingga kemutakhiran informasi dirasa cukup. Originalitas penelitian cukup baik pada paper ditunjukkan oleh turnitin similarity index = 9% yang ditunjang 5% internet source, 6% publikasi dan 2% student papers.

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Unsur penulisan lengkap. Termasuk dalam prosiding forum ilmiah internasional dan terindeks oleh SCOPUS pada 2020 dengan SJR= 0.18; H Indeks 26, Proceeding IOP Conference Series: Earth and Environmental Science 448 (2020), diterbitkan oleh IOP Publishing Inggris. Pada tahun 2020 hingga sekarang masuk pada kualifikasi Proceeding Ilmiah Internasional Bereputasi berindex scopus.

Semarang, Maret 2022
Reviewer 1

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Prof. Dr. Ir. Syafrudin, CES., M.T.
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Nilai Pengusul = 60% x 26 =			15,6

Catatan Penilaian artikel oleh Reviewer :

1. Kesesuaian dan kelengkapan unsur isi prosiding:

Prosiding terdiri dari: abstract, Introduction, Litvratue Review, Research Method, Result and Discussion, Conclusion, Acknowledgements and References, semua unsur lengkap serta memenuhi terhadap substansi yg menajadi Topik Penelitian "Quantitative Analysis for oil and Gas Projects".

2. Ruang lingkup dan kedalaman pembahasan:

Pembahasan berdasarkan theory Risk Management → semua aspek pentahapan proses aplikasi Risk Management: Risk Identification, Risk Analysis dalam hal ini di detailkan dgn memakai Sensitivity Analysis serta Monte Carlo simulation → ditindak lanjuti dgn Risk Response → pada studi kasus Oil and Gas Projects → Pembahasan sdh sangat detail.

3. Kecukupan dan kemutakhiran data/informasi dan metodologi:

Data dalam hal ini planning and scheduling project oil and gas berupa POM → dianalisis berdasarkan teori Risk Management utk menjawab tujuan penelitian yaitu "Delay risk on the completion time an oil and gas project. The sensitivity Analysis terdiri dari activity sensitivity index dan Risk sensitivity index".

4. Kelengkapan unsur dan kualitas terbitan:

Paper diterbitkan di IOP Conference Series terindex Scopus, SJR 0.179 termasuk Prosiding International terindex Scopus.

Semarang, Maret 2022
 Reviewer 2

Prof. Ir. Mochamad Agung Wibowo, M.M., M.Sc., Ph.D.
 NIP. 196702081994031005
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Development, INCRID 2019; Santika Premiere HotelSemarang, Central Java Province; Indonesia;
23 October 2019 through 24 October 2019; Code 159006

Quantitative Risk Analysis for Oil and Gas Projects: A Case Study (Conference Paper) [\(Open Access\)](#)

Hatmoko, J.U.D.  Khasani, R.R.

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Civil Engineering Department, Engineering Faculty, Diponegoro University, Indonesia

Abstract

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Delays have been identified as one of the significant risks in oil and gas projects. A sound risk analysis is, therefore, one of the critical factors for the success of the projects. The aim of this research was to measure the impact of delay risks on the completion time of an oil and gas project in Indonesia as a case study. Data of relevant delay risks were initially collected from literature reviews and observations on project documents and finalized through interviews with key respondents of the project. A monte-carlo based simulation software was used to simulate 28 delay risks identified and applied to the 34 project activities. This research found a probability of less than 1% for on-time project completion according to the baseline schedule (366 days). It was also projected that the project duration could be extended by 10.6% (405 days) and 14.2% (418 days) with 50% and 80% probabilities, respectively. The sensitivity analysis indicated that the most influential activity on project delays was the tubular delivery, and the risk delay with the most significant impact to project delays was the delay of long-lead item delivery. This research showed the mechanism of incorporating delay risks into relevant project activities, and the findings allow a better understanding of stakeholders to develop appropriate risk mitigation strategies. © 2020 IOP Publishing Ltd.

SciVal Topic Prominence ⓘ

Topic: Cost Overrun | Construction Project | Change Orders

Prominence percentile: 96.679 ⓘ

Indexed keywords

Engineering controlled terms:

- Computer software
- Monte Carlo methods
- Risk assessment
- Sensitivity analysis
- Sustainable development

Engineering uncontrolled terms

- Baseline schedule
- Literature reviews
- Oil and gas projects
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- Quantitative risk analysis
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- Simulation software

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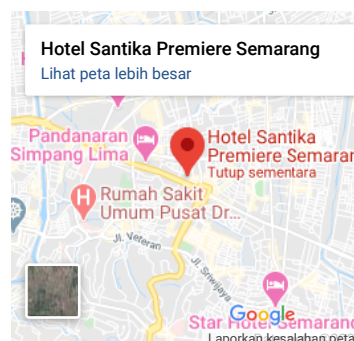
The 1st International Conference on Environment, Sustainability Issues and Community Development

“Discovering Innovations and Opportunities for Sustainable Living Environment”



Venue

23rd-24th October 2019
Santika Premiere Hotel,
Semarang–Indonesia



Topic Areas

A. Environment, Health, & Safety

- Environment, health, and safety system
- Environmental modelling and computation

B. Environmental Technology

- Waste management and treatment
- Water and wastewater engineering

C. Green Infrastructure

- Life cycle assessment
- Green building and technology option

D. Energy Conservation and Efficiency

- Clean and renewable energy
- Climate change and global warming

E. Urban Development & Resilient Community

- Urban development and management
- Community development and empowerment

F. Sustainable Development

- Sustainable economy, policy, and education
- Innovation in sustainable development goals (SDGs)



experiences and explore the possible influence of sustainable living environment in the future.

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CFD Simulation on the Natural Ventilation and Building Thermal Performance

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Abstract. The types of window, either permanent or impermanent will influence the building thermal profiles. Natural ventilation is one of technique to create passive cooling design in the building. It can improve the quality of indoor air, thermal comfort and reduction of energy consumption for air conditioning. In this present work, a study on the type of natural ventilation and the effect to thermal building performance was conducted. There are two types of natural ventilation as main variable in this study, top hung window and jalousie window. To develop the study, a simulation used Computational Fluid Dynamics (CFD) also conducted. One natural ventilation as outlet also added in the simulation. Based on the data measurement and computer simulation, jalousie window can provide better thermal performance. The range of difference between indoor air temperature on the chamber with jalousie window and chamber with top hung window is 0.2°C to 0.5°C, showing greater heat loss. The average of amount on the indoor air flow also was found 0.0317 m/s higher in the chamber with jalousie window. Particularly in the inlet, it was clear that the velocity of incoming air flow is faster and significantly allowed greater air with lower temperature entered from outside to inside.

1. Introduction

Natural ventilation is ventilation technique without any mechanical devices [1]. It is one of strategies to improve building thermal performance by resulting air temperature changes that entering building [2]. It also reduces the amount energy consumption for air conditioning and improving indoor air quality [3-6]. Building with natural ventilation has 40% lower for energy consumption [7,8]. Especially for traditional residential building, natural ventilation can increase the exchange of indoor and outdoor air, provides internal air renewal and thermal comfort for the occupant [9]. Sick building syndrome (SBS) is easy to come when building does not have enough ventilation [10-13]. Therefore, strategies of natural ventilation should be integrated into building design.

The existence of external wind velocities, wind direction and vegetation around building become the external factors that influence the performance of natural ventilation [14]. Elshafei et al. [15] also said that temperature, air velocity and humidity have strong influence on the natural ventilation. While



Analysis of Electricity Generation from Landfill Gas (Case Study: Manggar Landfill, Balikpapan)

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Abstract. Despite of adverse impacts on the environment, landfill has big potency as renewable energy sources since it generates biogas from organic waste degradation process which can be used for power plant purposes. In 2017, the volume of waste disposed to Manggar Landfill was 128,000 tons, which mostly are organic waste (59.4%). Therefore, this study aims to estimate the amount of energy that can be generated from landfill as methane, by calculating biogas production in landfill based on waste generation, as well as composition using LandGem and Afvalzorg model. In 2017, Manggar landfill produced about 4×10^3 Mg CH₄/year or about 5.31 to 6.44×10^6 m³/year. The estimated methane then converted to electricity using gas engine and trigeneration methods. Using gas engine, methane from Manggar Landfill is predicted to produce electricity about 787 MWh/month. On the other hand, if trigeneration method applied (by keeping the same gas engine as before), it produces 41.8% of heat which convert to 29.3 kWh of cold. In conclusion, it will be beneficial if Manggar Landfill capture and treat methane for generating electricity since Manggar Landfill produces about 6.44×10^6 m³/year which can be used for electricity purposes of around 10,000 people using gas engine.

1. Introduction

Landfilling is the most preferable method applied in developing countries, particularly in Indonesia, in handling its municipal solid waste. It is considered as cheap and convenient method since it is not restricted to advanced technology for treating and managing waste. Despite of its economics advantages, landfilling gives many adverse impacts on environment. The failure of landfilling methods may lead to many environmental contaminants due to leachate and which are soil pollution, ground water contamination and air pollution due to emission of greenhouse gases [1]. Therefore, waste management hierarchy put landfilling method as last option preferable due to its adverse effect to environment.

In Balikpapan, landfilling has been practiced many years ago, but proper landfilling area named Manggar landfill was opened in 2002. When opened in 2002, the volume of waste disposed to Manggar landfill was 69,000 tons and in 2017 it reached 128,000 tons. In a period of 15 years, the volume of waste has doubled. Urban waste that is directly piled up still contains a lot of organic waste at 59.4%. Followed by plastic waste, paper, and others, which have a composition respectively: 13.51%, 12.26%, and 10.62%. This high percentage of organic waste gives adverse impact from landfill gas produced by



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Monitoring Results of a 10kwp On-Grid Photovoltaic System in the Context of the Current Regulation for Solar Rooftops in Indonesia

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Abstract. To fulfil the Paris climate agreement, the Indonesian government aims to increase the share of renewable energy. New regulation for solar rooftops came into effect in January 2019 to give more security for investments in solar projects. However, for a majority of consumers, the implementation of the regulation and economical operation of a PV system brings many hurdles. A 10 kWp PV on-grid system at UKRIM University is monitored to gain information about energy data, return of investment (RoI) and levelized costs of energy (LCOE). Based on the monitoring results, three different consumer types (social institutions, residential buildings and offices) are analyzed with respect to profitability. For the PV installation at UKRIM, an RoI of 17 years is calculated. The LCOE is calculated as 0.08 USD/kWh and thus higher than the levelized feed-in price of only 0.076 USD/kWh. The current ten kWp PV system can offset 80% of the electricity demand of the building it is connected to. Nevertheless, the most economical size would be only seven kWp, showing that the most green (zero net energy) and the most economical system (fastest RoI) can differ greatly. The slow RoI makes a PV on-grid system economically not interesting for social tariffs. Though residential buildings and office buildings can achieve faster RoI, mainly because of higher electricity prices.

1. Introduction

In the Paris Agreement 2016, Indonesia, among 195 other countries, determined contributions to mitigate global warming. Indonesia aims to achieve 23% of renewable energy by 2025 until 2018, Indonesia reached 8% [1] The global technical potential for solar energy is 78,400 PWh/year [2]. The electricity generation by solar energy is still small compared to neighbour countries as seen in Figure 1.



Addition of Solid Recovered Fuel (SRF) to the Bio-drying Process and the Effects of Variation in Air Discharge on Temperature Parameters and Urban Waste Water Content

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Abstract. Bio-drying is a technology used to reduce water content in waste using microorganisms that naturally increase the temperature in the decomposition process. With this process, the water content can drop more within a month. Bio-drying produces a product in the form of Solid Recovered Fuel (SRF) which is produced from partially degraded waste. To obtain a waste that is not fully stabilized and maintains a high biomass content, degradation of organic compounds is carried out partially. During the bio drying process, temperature affects the degradation process. Temperature affects the bio drying, which will also affect the bio drying product that is indicated by the value of water content. Therefore, in this study, the change of process parameters will be explained, which is in the form of temperature and water content, that is caused by the difference in the air discharge entering the reactor (0, 2, 4, and 6 l/m) with the initial water content of 60%-65%. After 30 days, the optimum airflow is 4 l/m with a decrease in water content of 58.29%; on the last day of the bio drying process (30th day).

1. Introduction

Waste production in Indonesia has increased every year [1]. From the data of the Ministry of Environment and Forestry, it is noted that the total waste in 2017 was 65.8 million tons, and the total waste in 2018 was 65.752 million tons. This number is estimated to increase by an average of one ton per year. However, proper management efforts cannot yet be made because of the high investment required.

One alternative to reduce waste volume is by waste to energy (WTE) technology with an effectiveness of 90% [2]. Waste that can be converted into energy depends on the density, composition, and relative percentage of water content [3]. However, most of the waste in Indonesia is a wet waste with a lower calorific value, which makes it difficult to be burned [4]. Utilization of waste by increasing the calorific value of waste in the bio drying process is one of the excellent and effective solutions for reducing the level of municipal solid waste (MSW) in these conditions [5].

Bio-drying is the decomposition of partial organic substances by utilizing the heat generated by microorganisms that are helped by aeration [6]. The bio drying process only partially stabilizes waste.

