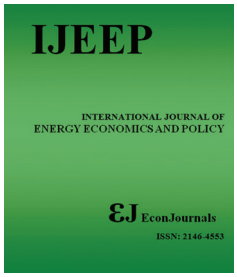


International Journal of Energy Economics and Policy

ISSN: 2146-4553

available at http: www.econjournals.com

International Journal of Energy Economics and Policy, 2021, 11(3), 395-402.

Indonesia's New SDGs Agenda for Green Growth – Emphasis in the Energy Sector

Suparjo Suparjo[1], Surya Darma[2]*, Nia Kurniadin[1], Jati Kasuma[3], Priyagus Priyagus[4], Dio Caisar Darma[5], Haryadi Haryadi[6]

[1]Department of Geomatics Technology, Politeknik Pertanian Negeri Samarinda, Indonesia, [2]Department of Agrotechnology, Faculty of Agriculture, Mulawarman University, Indonesia, [3]Faculty of Business and Management, Universiti Teknologi Mara (Sarawak branch), Malaysia, [4]Department of Economics, Faculty of Economics and Business, Mulawarman University, Indonesia, [5]Department of Management, Sekolah Tinggi Ilmu Ekonomi Samarinda, Indonesia, [6]Department of Economics, Faculty of Economics and Business, Jambi University, Indonesia. *Email: surya_darma@faperta.unmul.ac.id

Received: 17 December 2020 **Accepted:** 06 March 2021 **DOI:** https://doi.org/10.32479/ijeep.11091

ABSTRACT

The concept of green growth is one part of the realization of sustainable development. To support this mission, Indonesia is taking part in global change by accelerating the development programs contained in the SDGs. We need to study Green Growth (GG) which is determined by the empowerment of the energy sector such as Source of Electric Lighting (SEL), Renewable Energy Mix (REM), and Primary Energy Intensity (PEI) in Indonesia. Time-series data were analyzed using Ordinary Least Squares (OLS) modeling in the 2015-2024 period. The result, of the three targeted hypotheses, only two can be accepted which are explained by SEL and PEI have a positive effect on GG. In another exploration, one hypothesis that was rejected was that REM had a negative effect on GG. The implications of this study are brought to the attention of our findings that have raised important points, especially in the SDGs document on the energy sector.

Keywords: Sustainability, Electric Lighting, Renewable Energy, Energy Intensity, Green Growth, Indonesia
JEL Classifications: Q56, L94, Q42, Q43, O13

1. INTRODUCTION

Esquivel (2016) reflects on the "2030 Agenda Documents" published by large foundations and non-governmental organizations from all over the country that spend billions of dollars in budgets that have determined various aspects contained in the Sustainable Development Goals (SGDs). In addition, intergovernmental institutions that handle major financial and trade issues, especially from large countries, are influential actors who determine certain aspects of the SDGs.

The designs in the Millennium Development Goals (MDGs) have resulted in innovations, new partnerships, shown rapid progress, and dragged public opinion with ambitious goals (Kumar et al., 2016). However, the limitations of the MDGs gave rise to sharp criticism of important development goals, so the SDGs were adopted to reflect the convergence that is getting stronger in the global development agenda (Hulme, 2010). In addition, the SDGs also strengthen human rights, gender equality, and non-discrimination for the weak.

The target of increasing economic growth of 9.2% is consistently considered the main driver of development and countries are expected to support this significantly. The relevance between Gross Domestic Product (GDP) and the share of industrial jobs that are part of the SDGs, needs to focus on this (Ruhil, 2017; Rahman et al., 2019). The development mission can also be aligned by combining the subjects represented by the government, business

people, and other private sectors with the object of development itself, namely the community. Cappo and Verity (2014) focuses on an inclusive paradigm defined as a "participatory concept," in which they begin to be valued, involved, and their basic needs are met by considering local wisdom and community.

In 2013, something surprising happened, because the population density is in a large number of cities in Indonesia. As an illustration, the area of these big cities is proportional to the area of Europe today. The general picture in Figure 1 projects four major cities (DKI Jakarta, Bandung, Surabaya, and Makassar) which qualify based on GDP growth and proportion of population density. The size of the map has also been adjusted with several other cities for comparison, achieving economic growth of around 7%/year. Generally, cities that are classified as "developing" have a low growth category or <5% and the rest comes from the basis of "fast-growing" cities whose growth potential accounts for around 5% to 7%. We focused on the criteria of "developed cities" in Surabaya, Bandung, DKI Jakarta, and Makassar which had GDP growth above 7%, which were more prominent because of high political support, trade advantages, human resource interests, infrastructure, geography, investment flows abundant, and other factors which caused particular attention to these cities.

In essence, a transition to a "green" paradigm is urgently needed through fundamental changes as a consequence of shifting conventional GDP to green GDP. This requires a scenario that involves the transformation of social, economic, and environmental policies. A must integrate these three elements in a special policy. Explicitly, it is necessary to formulate solutions that are appropriate and mutually beneficial. Pasaribu (2013) emphasizes that a green perspective is not a new topic for Indonesia. Indonesia's development strategy must refer to four important points in development, including pro-jobs, pro-growth, pro-environment, and pro-poor.

The prediction by Yusuf (2010) that takes into account the value of green GDP in Indonesia has reduced the quality of the environment and also has an impact on the depletion of natural resources. The estimates indicated for the last several periods, green GDP growth in Indonesia amounted to 87% of the total conventional GDP. In 2010, around IDR 835 trillion was spent and spent on environmental costs. In the same year, the central government has budgeted the environmental costs of IDR 900 trillion from the initial plan.

Given the vital role of SGDs towards economic prosperity that takes into account environmental sustainability, we need to consider several goals in SGDs related to the energy sector to support Indonesia's green economic growth. The composition of this article is arranged in several stages. The first section describes the background and objectives. The second part is the literature review that is relevant to the article. In the third section, outline the steps in the method. Part four discusses the results and findings. Next, part five is for confirmation of the conclusion.

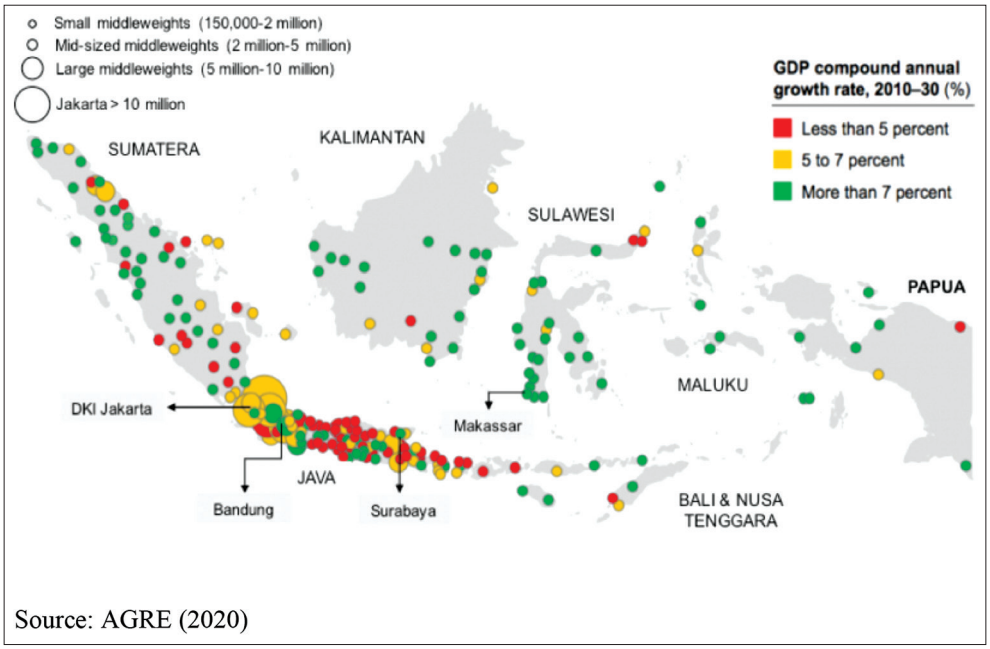
2. LITERATURE REVIEW

2.1. MDGs versus SDGs

The concept of environmentally friendly has been initiated since 2000 which involves the participation of all countries to agree on eight measurable and specific global elements related to development goals. The MDGs are the missionary responsibility of all components in the "millennium summit" for the togetherness of the government and its people (Diouf, 2019).

The MDGs are deemed to have failed to address sustainability in a complex manner. Ideally, objectives that are relevant to the situation in some cases, eg extra measures to tackle climate change are not a "priority." Ranked 13th, climate change is considered

Figure 1: GDP growth and population density by cities in Indonesia, 2030



Source: AGRE (2020)

less important and it shows relative importance by objective. Vandemoortele (2018) explains that climate change is not among the top three priorities, so issues in the MDGs such as hunger, poverty, and child mortality raise questions about whether the three problems are urgent by the world today.

The weaknesses in the MDGs are only aimed at developing countries, while the SDGs have a more universal prospect. Thus, the SDGs are presented to replace the MDGs in a direction that is more in line with the challenges of the global future. The concept of SDGs is also needed as a new development framework that accommodates changes that have occurred after the MDGs, especially focusing on every global situation since 2000 such as health (WHO, 2015).

2.2. Sustainable Development

Lack of understanding of the concept of "sustainable development" is still a serious problem faced by the government, academics, private companies, and the government. Mostly, the interpretation of SD is more likely to be caused by the incomplete concept of SD (Shi et al., 2019). The basic principles of certain SD organizations or groups have partly influenced the mindset of individuals towards SD. In practice, SD is not based on suggestions and goals but is interpreted as a simple process of transformation that takes place without limitations (Broman and Robert, 2017).

The aim of SD is to demonstrate that protection of the environment need not sacrifice well-being. In this conception, SD as opposed to "green growth" directly reacts to economic growth. According to Kasztelan (2017), SD also ignores vital issues related to the consequences of environmental protection, economic growth, and business aspects of the main objectives of SD. In relation to the emphasis on compatibility, the SD contained in green growth also claims that environmental protection can contribute to the expansion of growth.

2.3. Green Growth

UNEP (2011) links green economic growth as a green economy idea that is oriented towards strengthening social justice and community welfare along with ecological deficiencies and reducing the resulting environmental impacts. Although this concept is relatively new in the scientific community, has become a recent topic on the global scene, has been highlighted for discussion, and needs analysis in the last few decades, its role has been extraordinary in the ecological and environmental economics sectors (Kasztelan, 2017).

Throughout history, it was the first time the concept was used in the international "Blueprint for a Green Economy" report, as the British government had been the leader since 1989 to prepare a board of leading environmental economists (Barbier, 2011).

Stjepanović et al. (2019) respond to the importance of the economic dimension to a green growth approach that is very different from traditional GDP benchmarks, so it is necessary to integrate additional information qualitatively through method scouring of the opportunity costs of lost turnover and the costs of environmental damage (Rahman et al., 2017).

2.4. Alternative Policies to Crisis

Figure 2 categorizes the elements that formulate goals against the socio-economic paradigm aligned with the notion of progress, thus contributing to shaping discourse on alternative policies. The ILO (2009) designed several solutions to overcome the crisis and were categorized into three groups, namely projects for the green economy, projects for socio-economic transformation, and national stimulus packages that focus on all changes. Bernard et al. (2009) instructed each policy to be differentiated by its conception, socio-economic paradigm, and main objective.

At present, Bina and La Kamera (2011) draw a process that goes to the right and centers on ecological economic theory, explicitly provides a theoretical basis for environmental sustainability, has a systematic effect, illustrates the notion of boundaries, then highlights the need for the broad meaning of welfare, and raises important questions covering intergenerational and intra-generational justice.

3. METHODOLOGY

3.1. Measurement of Variables and Hypotheses

The variables that we determine are measured by two types, namely the independent variable and the independent variable. The provisions for independent variables as determinants directly predict or influence the dependent variable and vice versa the dependent variable is the variable predicted by the independent variable (e.g. Wijayanti and Darma, 2019; Asih et al., 2020).

Those that act as independent variables are Source of Electric Lighting (SEL), Renewable Energy Mix (REM), and Primary Energy Intensity (PEI). Meanwhile, Green Growth (GG) is an independent variable. Table 1 describes the operational definition of each of these variables.

Based on this linear equation, Figure 3 is compiled for the completeness of the study model design. SEL indicator is located in SDG 1 "Ending Poverty in All Forms, Everywhere," then SDGs 2 "Ensuring Access to Affordable, Reliable, Sustainable and Modern Energy for All" divides the two indicators (REM and PEI), and GG is the ultimate goal expected in the green economy concept. The hypothesis proposals are sorted as follows:
Hypothesis-1: There is a positive effect of SEL on GG.
Hypothesis-2: There is a positive effect of REM on GG.
Hypothesis-3: There is a positive effect of PEI on GG.

3.2. Data

The data is concentrated on time series data for a decade that refers to the national medium-term development plan (RPJMN). The data intended are for two planning periods for 2015-2019 and planning for 2020-2024 under the leadership of Jokowi (President of the Republic of Indonesia). We obtained the data collection through government agencies (BPS-Statistics of Indonesia) and private institutions (3GI of Indonesia) as the institutions authorized to compile Indonesia's SDGs documents.

The scope of the consistency study to invest in the effect of SEL, REM, and PEI on GG with different units in the 2015-2024 period, where specifically for the period 2020 to 2024 uses projection

Table 1: Variable constraints

Indicator	Targeted	Concept	Interpretation	Function
Percentage of households with electricity as the main source of electricity from the State Electricity Company (PLN) and non-PLN electricity	Increased access to information for the lowest 40% of the population to 100% by 2019	Percentage of poor and vulnerable households whose main source of lighting is PLN and Non-PLN. PLN electricity is a source of electric lighting managed by PLN. Non-PLN electricity is a source of electric lighting managed by agencies or parties other than PLN, including those using lighting sources from batteries, generators, and solar power plants (which are not managed by PLN)	The greater this value, the better the level of household/community welfare	To see household welfare from the housing side
Renewable energy mix	In 2019, the national energy mix originating from the new and renewable energy sector was achieved 19%	Final energy is energy that can be consumed directly by the end-user. Government Regulation of the Republic of Indonesia Number 79 of 2014 concerning "National Energy Policy" is energy derived from renewable energy sources, including from geothermal energy, wind, bioenergy, sunlight, water flows, and falls, movement, and differences in sea layer temperature	The renewable energy mix is the percentage between the total final consumption of renewable energy to the total final energy consumption	Knowing how large the proportion of renewable energy use is to total energy
Primary energy intensity	Primary energy intensity (1% decrease per year) to 463.2 barrels of oil equivalent (BOE) in 2019	Primary energy is energy provided by nature and has not undergone further processing based on Government Regulation Number 79 of 2014 concerning "National Energy Policy". Primary energy intensity as the total primary energy supply per unit of gross domestic product in units of SBM per IDR billion	The success of the application of energy conservation or how much energy can be saved to produce the same product	Identify how much energy is used to produce one unit of economic output. Primary energy intensity is a proxy for measuring how efficiently the economy can utilize energy to produce output. The lower the ratio of the primary energy intensity, the less energy is needed to produce one unit of output
Green growth	Increase in average green GDP growth	A movement towards a more integrated and comprehensive approach to incorporating social and environmental factors in the economic process, in order to achieve sustainable development	Economic growth contributes to the responsible use of natural capital, prevents and reduces pollution, and creates opportunities to improve overall social welfare by building a green economy and enabling the achievement of sustainable development goals. The components in GG include the cost of natural resource consumption (agricultural land, minerals, forests, water, fish resources, environmental depletion costs, and the level of environmental degradation)	To measure the level of natural values other than goods and services that have been measured in conventional GDP (without the cost of environmental impact)

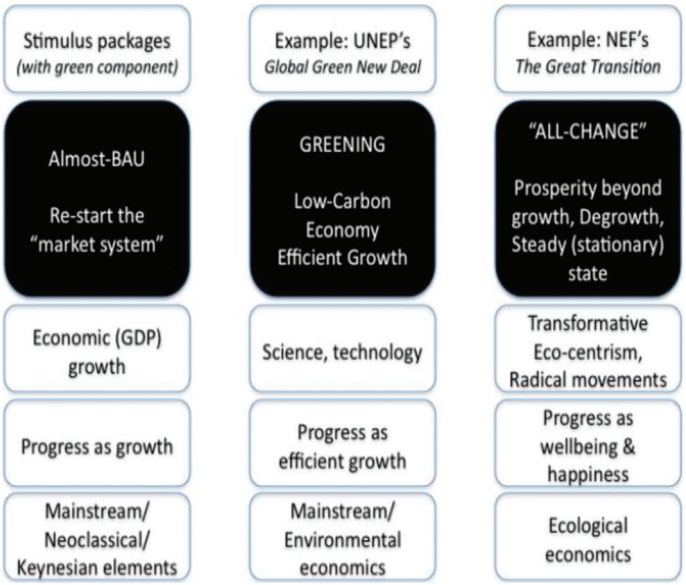
Source: BPS-Statistics of Indonesia (2020a, b), 3GI of Indonesia (2020)

data shown in Table 2. Evaluation of Jokowi's performance the indicators SEL, REM, PEI, and GG during the two eras are clearly striking. With the SDGs target in 2019, as a comparison for the first leadership period (2015-2019), only SEL had achieved success, while REM and PEI did not meet the target, and GG tended to fluctuate, showing that in 2015-2017 there was an increase and had decreased by 2.58% in 2018 and again increasing by 0.73% for 2019. Comparisons for the 2020-2024 period or the second leadership era (present) which are supported by projection data, the results in the SEL have consistently increased as before. Table 2 also presents REM in 2024 has met the criteria, but in 2020-2023 it has not been achieved. The PEI target is also similar to the previous era, which has not met the target and GG even fell from 2020 to 2021, then there was an increase of 2.25% and 2.31% in 2022 and 2023. Then, in 2024, GG has decreased again, so it is classified as inconsistent.

3.3. Empirical Model

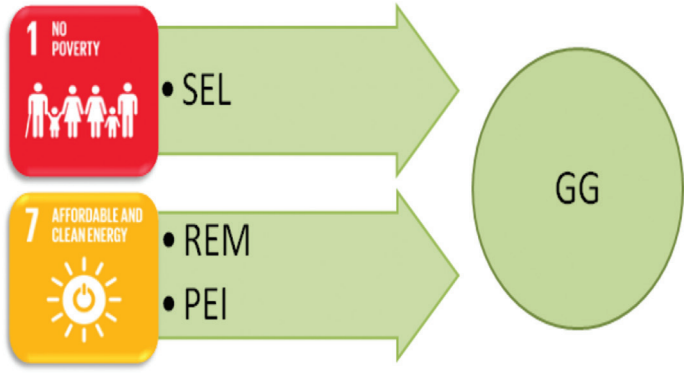
To implement the econometric method, we use the Ordinary Least Squares (OLS) method in multiple linear analysis to invest in the effects of the identified variables. In the data presentation process, it is presented with SPSS 25 software. OLS specification model, we replicate the equation function created by Aldieri and Vinci (2018) with the following simulation:

Figure 2: Response to multiple crisis policies



Source: Developed from Bina (2013)

Figure 3: Model report



Source: Inserts from UN (2020a, b)

$$lnGG_{it} = \alpha_i + \beta_1 lnSEL_{it} + \beta_2 lnREM + \beta_3 lnPEI_{it} + \varepsilon_{it} \quad (1)$$

The provisions, ln: natural logarithm, α: constant, β: vectors of parameters, GG_{it}: Green Growth effects, SEL_{it}: Source of Electric Lighting for GG i and year t, REM_{it}: Renewable Energy Mix for GG i and year t, PEI_{it}: Primary Energy Intensity for GG i and year t, and ε_{it}: disturbance term.

As for the summary statistics from data observations, we estimate it based on the GG, SEL, REM, and PEI variables reviewed in Table 3 which confirms that the comparison of all variables is varied. The maximum value, mean, and standard deviation are highest for PEI because its benchmarks are the most prominent among the others. Meanwhile, of the three indicators, the smallest contribution is GG. However, GG is the only variable whose skewness calculation is positive, while for kurtosis values, all of them are negative.

4. RESULTS AND DISCUSSIONS

The first step that needs to be presented is the assumption of normality. The principle in Figure 4 is to detect normality by looking at the spread of observations (points) on the diagonal axis of the graph on the residuals. Thus, we make a decision if the data has spread around the diagonal line and followed the direction of the diagonal line so that the pattern is normally distributed and the regression model meets the assumption of normality.

Table 2: Summary of data components

Obs.	SEL (%)	REM (%)	PEI (IDR billlion)	GG (%)
2015	91.47	5.19	145.00	5.53
2016	92.73	7.47	145.30	5.81
2017	93.55	8.39	135.05	6.02
2018	94.15	10.42	134.65	3.44
2019	94.83	12.20	140.62	4.17
2020*	95.78	13.40	144.75	6.29
2021*	96.46	14.28	141.82	5.35
2022*	97.01	15.51	142.24	7.60
2023*	97.54	15.93	148.97	9.91
2024*	97.62	16.70	145.10	8.78

Source: BPS-Statistics of Indonesia (2020a, b), 3GI of Indonesia (2020). Information: *Projection data

Table 3: Descriptive statistics (obs. = 10)

Model	Min.	Max.	Mean	SD	Skewness	Kurtosis
SEL	91.47	97.62	95.1140	2.11959	−0.395	−1.031
REM	5.19	16.70	11.9490	3.93634	−0.492	−1.057
PEI	134.65	148.97	142.3500	4.57940	−0.697	−0.121
GG	3.44	9.91	6.2900	1.98332	0.553	−0.101

Source: Own result

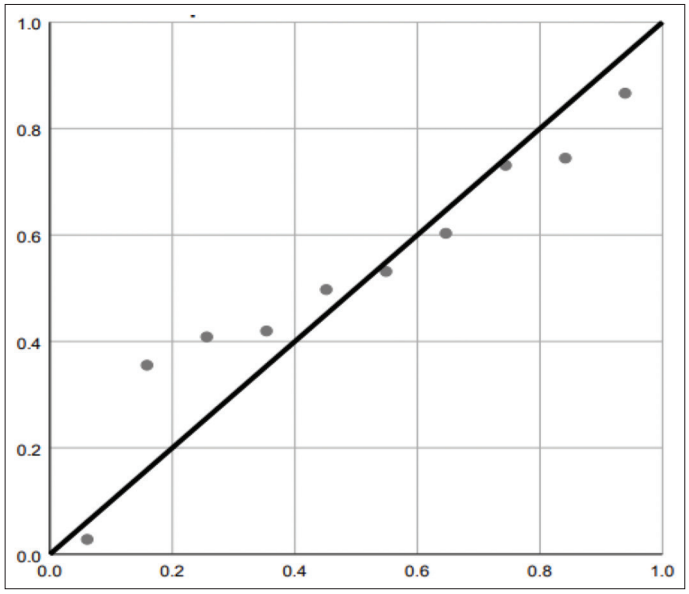
The second requirement is the assumption of heteroscedasticity with the aim of testing whether the regression model has inequality of variance from the residuals of one observation to another through a scatter plot (Figure 5). In practice, this observational variance means that there is no heteroscedasticity disorder because there is no certain pattern that causes irregular data distribution under and over the main axis.

Selection through the Person Correlation feasibility test to determine the closeness of the linear relationship between variables based on ratio and interval data, so that it fits in this study. We conclude that there is a positive coefficient which implies that the direction of the relationship is directly proportional. Table 4 also provides significant signals from GG, SEL, and REM to GG.

The next interpretation is to test the regression results in a complex manner to compare the proposed hypothesis with the suitability of the estimates. Table 5 attaches the partial test values of SEL, REM, and PEI and their predictions for GG which are also supported by the coefficient of determination. With reference to the probability level of 5% (1.96), the three variables have a significant effect on GG. Partially, SEL, REM, and PEI have $P < 0.05$, so it has a significant impact on increasing GG significantly. What prevents the relationship from being unidirectional is indicated by REM to GG which has a negative coefficient value. On the other hand, SEL and PEI have a positive contribution to encourage GG (ceteris paribus).

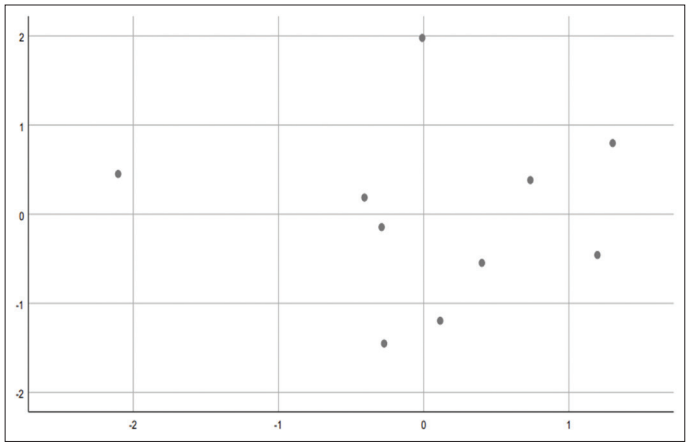
The reflection of the coefficient of determination is used as information on the suitability of a model and is interpreted to determine the extent to which a number of dependent variables are

Figure 4: Normal plot of model



Source: Own result

Figure 5: Scatter plot of model



Source: Own result

Table 4: Correlations (obs. = 10)

Model	GG	SEL	REM	PEI
GG	1.000	0.632 (0.025*)	0.581 (0.039*)	0.677 (0.016*)
SEL	0.632 (0.025*)	1.000	0.995 (0.000*)	0.301 (0.199*)
REM	0.581 (0.039*)	0.995 (0.000*)	1.000	0.293 (0.206*)
PEI	0.677 (0.016*)	0.301 (0.199*)	0.293 (0.206*)	1.000

Source: Own result. Information: *P<0.05

Table 5: Regression display

Model	Unstd. Coef. beta	SE	t	Sig.	VIF	Reality signs
Constant	−423.919	126.140	−3.361	0.015*		
SEL	4.470	1.428	3.129	0.020*	96.341	(+)
REM	−2.176	0.767	−2.836	0.030*	95.833	(−)
PEI	0.218	0.071	3.083	0.022*	1.104	(+)
R=0.925			F=11.779			
R Square=0.855			Sig. = 0.006			
Adjusted R Square=0.782			df=9			
DW test=2.094						

Source: Own result. Information: *P<0.05, predicted to GG

able to explain the independent variables for the regression model as a whole (Rachmawatie et al., 2021). Because the determination of the OLS method is more than 50%, it is concluded that it is very feasible to use. GG is determined by SEL, REM, and PEI at 85.5%, and 14.5% is explained by other variables outside the study model. In more detail, the built model has achieved very good criteria with the following structure:

$$GG = -423.919 + 4.470\ SEL + -2.176\ REM + 0.218\ PEI + 0.145 \quad (2)$$

The success of the economic system is very relevant to enable the efficient use of goods and services in the current industrial era. The concept of green growth must support this implementation in synergy with policies that are in line with energy savings (Aldieri and Vinci, 2018). It is the key to success in considering the progress of green growth, Stjepanović et al. (2017) describe important efforts and encouragement that require organization, energy security, industry, and the economic problem itself when measuring GDP.

Abdullah et al. (2017) highlighted that at the fundamental level, in general, some countries still make resource-allocation errors. The level of capital invested in acquiring energy efficiency, renewable energy, sustainable agriculture, ecosystems, biodiversity, water conservation, and public transportation is relatively small. The pattern of growth and development actually has a negative impact on the welfare of the current generation. It is not impossible, it also presents challenges and presents risks for future generations.

GDP growth largely determines aggregate economic indicators, but the economic impact is not fully reaching at the sectoral level. Dai et al. (2016) present certain reasons that give a message if there is no negotiation that links economic growth and renewable energy consumption. Meanwhile, the views of Taskin et al. (2020) focuses on the consumption of renewable energy and its impact on green growth in OECD countries. The factor of openness to international trade is explained by a green economy that drives broad opportunities and creates benefits in social equality, productivity, and quality of life. Case studies in several countries in the European Union, such as Lithuania, Slovenia, and Hungary consume increasingly renewable energy to increase green growth, while in Bulgaria and Romania they are in progress. Two-way causality that connects the level of renewable energy consumption and green growth in the long run, further confirms the validated hypothesis in a group of countries analyzed. In the 2020 target, the feasibility of a number of countries in Europe should be studied regarding public policy goals and increasing energy efficiency to achieve it (Marinaş et al., 2018).

No less interesting, the study of Ziolo et al. (2020) presents SDGs which present the right steps to reduce energy consumption, so that the use of renewable energy and energy efficiency runs optimally. An approach to closing the gap by investigating the relationship between economic development, financial support, and energy efficiency is in the spotlight of this century. The transition from developed countries such as China, Finland, Japan, and Germany has led to green growth leading to an economic and environmental

assessment system. The approach pioneered by Matraeva et al. (2017) focuses on fundamental considerations with the experience of leaders of a group of countries who have switched to energy efficiency through economic policy packages

5. CONCLUSIONS

Our findings confirm that SEL and PEI have a positive impact on GG, while REM has a negative effect. Through medium-term calculations, with an increase in SEL 1%, it will increase GG by 4.470%, and an increase in PEI of IDR 1 billion per period, will also increase GG by 0.218%. Conversely, if REM increases by 1%, it will reduce GG by 2.176%. In addition, the constant value reaches −423,919, which means that the average contribution of other variables outside the OLS model has a negative impact on GG.

This article has explored three vital points. Empirical findings do enrich scientific evidence regarding the impact of SEL, REM, and PEI on GG. One thing that must be considered is the follow-up on the externalities outside the model to calculate how much in the process of disseminating other knowledge in the environmental context.

Contributions in both practical and theoretical spheres are needed to enrich the present invention. For the future, practical insights put forward truly mature solutions initiated by the government in the SDGs document. In addition, the output theoretically refers to the constraints of this study which are limited by the data set published by the government. Another downside is that the time lag used is still medium-term. Therefore, it is hoped that future studies will consider this matter so that the presentation of the findings is more interesting and varied.

6. ACKNOWLEDGMENT

The authors gratefully acknowledge receipt of internal sponsorship (grant) from each institution. We also appreciate the performance and collaboration of the authors in this study.

REFERENCES

Abdullah, H., Bakar, N.A., Jali, M.R., Ibrahim, F.W. (2017), The current state of Malaysia's journey towards a green economy: The perceptions of the companies on environmental efficiency and sustainability. International Journal of Energy Economics and Policy, 7(1), 253-258.

Aldieri, L., Vinci, C.P. (2018), Green economy and sustainable development: The economic impact of innovation on employment. Sustainability, 10(10), 1-11.

Asia Green Real Estate. (2020), Indonesia's Second-tier Cities on the Move. Asia Insights. Electronic Resource. Available from: https://www.asiagreen.com/en/news-insights/indonesia-s-second-tier-cities-on-the-move. [Last accessed on 2021 Jan 16].

Asih, D., Setini, M., Soelton, M., Muna, N., Putra, I., Darma, D., Judiarni, J. (2020), Predicting green product consumption using theory of planned behavior and reasoned action. Management Science Letters, 10(14), 3367-3374.

Barbier, E. (2011), The policy challenges for green economy and sustainable economic development. Natural Resources Forum, 35(3), 233-245.

Bernard, S., Asokan, S., Warrell, H., Lemer, J. (2009), "The Greenest Bail-out?" The Financial Times. Electronic Resource. Available from: http://www.cachef.ft.com/cms/s/0/cc207678-0738-11de-9294-000077b07658.html#ixzz2Bq0aCIRS. [Last accessed on 2021 Jan 10].

Bina, O. (2013), The Green Economy and Sustainable Development: An Uneasy Balance? Environment and Planning C: Politics and Space, 31(6), 1023-1047.

Bina, O., La Camera, F. (2011), Promise and shortcomings of a green turn in recent policy responses to the "double crisis". Ecological Economics, 70(12), 2308-2316.

BPS-Statistics of Indonesia. (2020a), National Socio-economic Survey in 2019. Electronic Resource. Available from: https://www.sirusa.bps.go.id/sirusa/index.php/dasar/view?kd=1558&th=2020. [Last accessed on 2021 Jan 03].

BPS-Statistics of Indonesia. (2020b), Sustainable Development Indicator Data Compilation, 2019. Electronic Resource. Available from: https://www.sirusa.bps.go.id/sirusa/index.php/dasar/view?kd=131&th=2019. [Last accessed on 2021 Jan 03].

Broman, G.I., Robert, K.H. (2017), A framework for strategic sustainable development. Journal of Cleaner Production, 140(1), 17-31.

Cappo, D., Verity, F. (2014), Social inclusion and integrative practices. Social Inclusion, 2(1), 24-33.

Dai, H., Xie, X., Xie, Y., Liu, J., Masui, T. (2016), Green growth: The economic impacts of large-scale renewable energy development in China. Applied Energy, 162, 435-449.

Diouf, G. (2019), Millenium development goals (MDGs) and sustainable development goals (SDGs) in social welfare. International Journal of Science and Society, 1(4), 17-24.

Esquivel, V. (2016), Power and the sustainable development goals: A feminist analysis. Gender & Development, 24(1), 9-23.

Global Green Growth Institute of Indonesia. (2020), Green Growth and Investment Planning: A Guide to using Extended Cost-benefit Analysis (ECBA). Electronic Resource. Available from: https://www.greengrowthknowledge.org/sites/default/files/downloads/policy-database/mainstreaming%20green%20growth%20in%20investment%20planning%20(IDN).pdf. [Last accessed on 2021 Jan 17].

Hulme, D. (2010), Lessons from the making of the MDGs: Human development meets results-based management in an unfair world. IDS Bulletin, 41(1), 15-25.

International Labour Organization. (2009), Green Stimulus Measures. European Commission, Paper Series No. 15. Electronic Resource. Available from: https://www.ec.europa.eu/social/BlobServlet?docId=7247&langId=en. [Last accessed on 2021 Jan 04].

Kasztelan, A. (2017), Green growth, green economy and sustainable development: Terminological and relational discourse. Prague Economic Papers, 26(4), 487-499.

Kumar, S., Kumar, N., Vivekadhish, S. (2016), Millennium development goals (MDGs) to sustainable development goals (SDGs): Addressing unfinished agenda and strengthening sustainable development and partnership. Indian Journal of Community Medicine, 41(1), 1-4.

Marinaş, MC., Dinu, M., Socol, AG., Socol, C. (2018), Renewable energy consumption and economic growth. Causality relationship in Central and Eastern European countries. PLoS One, 13(10), e0202951.

Matraeva, L.V., Goryunova, N.A., Smirnova, S.N., Babenko, M.I., Erokhin, S.G., Solodukha, P.V. (2017), Methodological approaches to the assessment of energy efficiency within the framework of the concept of green economy and sustainable development. International Journal of Energy Economics and Policy, 7(4), 231-239.

Pasaribu, R.B. (2013), Indonesia's Green Economy. Electronic Resource.

Available from: https://www.rowlandpasaribu.files.wordpress.com/2013/02/11-perekonomian-hijau-indonesia.pdf. [Last accessed on 2020 Dec 28].

Rachmawatie, D., Rustiadi, E., Fauzi, A., Juanda, B. (2021), Driving factors of community empowerment and development through renewable energy for electricity in Indonesia. International Journal of Energy Economics and Policy, 11(1), 326-332.

Rahman, D.H., Majidi, N., Huwaina, F., Harun, N.F., Kasuma, J. (2017), Economic growth in Malaysia: A causality study on macroeconomics factors. Journal of Entrepreneurship and Business, 5(2), 61-70.

Rahman, D.H., Majidi, N., Kasuma, J., Yacob, Y., Marikan, D.A. (2019), The dynamic of macroeconomics elements in Malaysia: Further insight into causality analysis. Journal of International Business, Economics and Entrepreneurship, 4(1), 1-9.

Ruhil, R. (2017), Millennium development goals to sustainable development goals: Challenges in the health sector. International Studies, 52(1-4), 118-135.

Shi, L., Han, L., Yang, F., Gao, L. (2019), The evolution of sustainable development theory: Types, goals, and research prospects. Sustainability, 11(24), 1-16.

Stjepanović, S., Tomić, D., Škare, M. (2017), A new approach to measuring green GDP: A cross-country analysis. Entrepreneurship and Sustainability Issues, 4(4), 574-590.

Stjepanović, S., Tomić, D., Škare, M. (2019), Green GDP: An analysis for developing and developed countries. E a M: Ekonomie a Management, 22(4), 4-17.

Taskin, D., Vardar, G., Okan, B. (2020), Does renewable energy promote green economic growth in OECD countries? Sustainability Accounting, Management and Policy Journal, 11(4), 771-798.

United Nations Environment Programme. (2011), Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication. Electronic Resource. Available from: http://www.unep.org/greeneconomy/portals/88/documents/ger/ger_final_dec_2011/Green%20EconomyReport_Final_Dec2011.pdf. [Last accessed on 2021 Jan 07].

United Nations. (2020a). End Poverty in all its Forms Everywhere. Department of Economic and Social Affairs, Sustainable Development. Electronic Resource. Available from: https://www.sdgs.un.org/goals/goal1. [Last accessed on 2021 Jan 15].

United Nations. (2020b). Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for all. Electronic Resource. Available from: https://www.sdgs.un.org/goals/goal7. [Last accessed on 2021 Jan 15].

Vandemoortele, J. (2018), From simple-minded MDGs to muddle-headed SDGs. Development Studies Research, 5(1), 83-89.

Wijayanti, T.C., Darma, D.C. (2019), The role of investment and government expenditure on GRDP and human development in East Kalimantan. International Journal of Scientific & Technology Research, 8(9), 1232-1237.

World Health Organization. (2015), Health in 2015: From MDGs to SDGs. Electronic Resource. Available from: https://www.who.int/docs/default-source/gho-documents/health-in-2015-mdgs-to-sdgs/health-in-2015-from-mdgs-to-sdgs.pdf?sfvrsn=8ba61059_2. [Last accessed on 2021 Jan 16].

Yusuf, A.A. (2010), Estimates of the "green" or "eco" regional domestic product of Indonesian Provinces for the year 2005. Economics and Finance Indonesia, 58(2), 131-148.

Ziolo, M., Jednak, S., Savić, G., Kragulj, D. (2020), Link between energy efficiency and sustainable economic and financial development in OECD countries. Energies, 13(22), 1-28.