

# Accelerating the Economic Recovery in Indonesia Post Covid-19: Justice in the Energy Transition

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## **Abstract:**

Indonesia is known as the largest economy in South East Asia and as one of the emerging lower-middle-income countries. Before the pandemic Covid-19, Indonesia forecasted its GDP growth to increase to 5.5% in 2020. However, this never happened following the pandemic it decreased to 2.97% in the first quarter of 2020. This paper focuses on the renewable energy role in accelerating the economic recovery in Indonesia by emphasising the role of justice in the transition process. We conduct systematic reviews from different sources, both primary and secondary resources. We qualitatively analyse the energy regulation and energy road map in Indonesia as well as some academic research articles. Indonesia has developed its general energy plan related to the energy mix demand and supply, which includes a long-term plan on developing renewable energy sources and reducing the use of fossil fuels. As the fourth most populated country in the world, Indonesia still focusses on cheap energy supply and energy access to fulfil the energy demand. Therefore the transition process in Indonesia is considered slow compared to the OECD countries. There is a significant role of energy in economic growth, both energy consumption and energy resources. Until now, fossil fuels have dominated the Indonesian energy supply and demand. This paper highlights the role of renewable energy in the economic development of the country. This paper suggests that the pandemic has highlighted the energy transition movement in Indonesia.

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## *Economic Recovery in Indonesia Post Covid-19*

The Covid-19 has driven more research on the role of renewable energy project to the economic development and demonstrate that a transition to a low-carbon economy could contribute to the economic recovery in a justice way in many sectors. Renewable energy development contributes directly to human resources development, and this development also contribute to health sector improvement. Finally, this renewable energy development could accelerate the economic recovery in Indonesia and reach 5.2 to 5.6% in 2021.

**Keywords:** renewable energy; energy justice; just transition; economic growth.

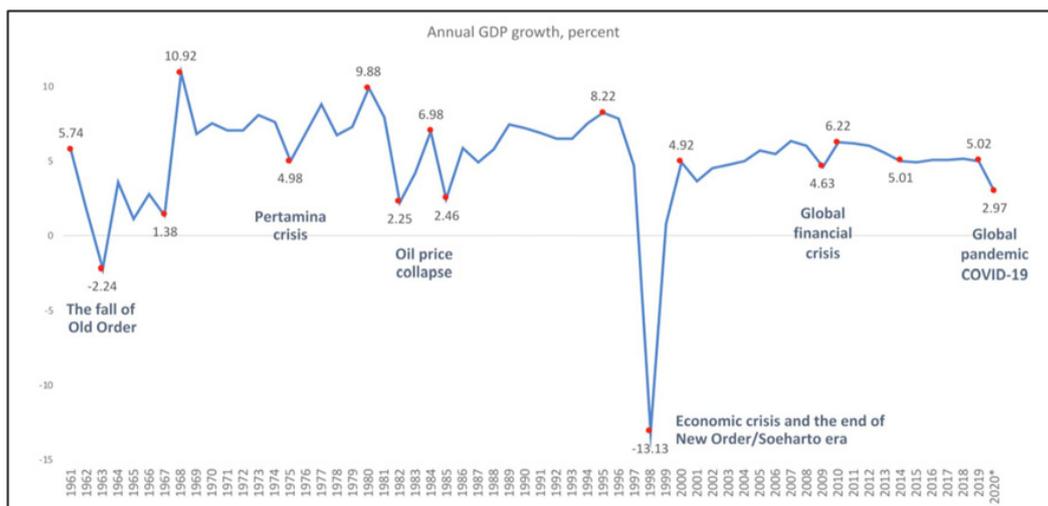
### 1. INTRODUCTION

Indonesia is known as the largest economy in South East Asia and as one of the emerging lower-middle-income countries. Indonesia has managed to cut its poverty rate from 18% in 1999 to 9.4% in 2019<sup>1</sup>. As the fourth most populous country in the world, Indonesia's economic growth only increased by 0.3% from 2015 to 2019. In early 2020, the Government of Indonesia was still optimistic with the economic growth reaching over 5% while other countries' economy collapsed due to trade wars and geopolitics<sup>2</sup>. While Indonesia grew to 5% in 2019, global economic growth was only 3.2% and expected to grow to 3.5% in 2020<sup>3</sup>.

Not knowing the pandemic (Covid-19) was happening, Indonesian economic growth was forecasted to grow and increase to 5.5% in 2020<sup>4</sup>. In 2019, the GDP growth in Indonesia was 5.02%, and unexpectedly went down to 2.97% at the first quarter of 2020<sup>5</sup>, and forecasted by the IMF to go down to 0.5% due to the pandemic<sup>6</sup> when the global economy plummeted to -4.2%<sup>7</sup>. Another report on Indonesian's economy was published in response to the pandemic and forecasted that Indonesian economic growth is increasing to 4.2–4.6% in 2020 from 2.97%

This pandemic that leads to global recession is unexpected for each country, including Indonesia. Indonesia has set its strategy in facing the recession and

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1. 'Overview' (World Bank, 2020) <<https://www.worldbank.org/en/country/indonesia/overview>> accessed 16 June 2020.
  2. 'Perekonomian Indonesia Tahun 2019 Positif Tumbuh Di Atas 5%' (Kemenkeu.go.id, 2020) <<https://www.kemenkeu.go.id/publikasi/berita/perekonomian-indonesia-tahun-2019-positif-tumbuh-di-atas-5/>> accessed 13 June 2020.
  3. Ibid.
  4. Bank of Indonesia, 'Laporan Perekonomian Indonesia – "Indonesia's Economic Report"' (Bank of Indonesia 2017).
  5. 'Badan Pusat Statistik' (*Bps.go.id*, 2020) <<https://www.bps.go.id/subject/11/produkt-domestik-bruto-lapangan-usaha-.html#subjekViewTab3>> accessed 1 July 2020.
  6. International Monetary Fund, 'World Economic Outlook' (International Monetary Fund 2020).
  7. Ibid.



\*) First quarter

Figure 1: Indonesia's GDP Growth.<sup>8</sup>

recovering from the pandemic. This strategy covers eight sectors. They are investment acceleration, industrial and trade (goods and services), financial, tourism, health, social welfare, infrastructure development, and human capital development. Unfortunately, this strategy does not mention the energy sector as part of its primary strategy<sup>9</sup>.

This paper discusses further the role of energy and natural resources, especially renewable energy development in the economic development post-Covid-19. This paper suggests that renewable energy development could contribute to the economic recovery in Indonesia.

## 2. THE ROLE OF ENERGY IN ECONOMIC DEVELOPMENT

A study finds that energy consumption and GDP growth in a country has a positive relationship<sup>10</sup>. Another study finds that energy resources has a significant role in economic growth and social welfare<sup>11</sup>. Energy, sustainable economic development and environment are interrelated in the same way. The sustainable economic development can be achieved by having sustainable

8. 'Badan Pusat Statistik' (Bps.go.id, 2020) <<https://www.bps.go.id/subject/11/produkt-domestik-bruto-lapangan-usaha-.html#subjekViewTab3>> accessed 1 July 2020.

9. Eka Chandra Buana, 'Bappenas: PENGANTAR DISKUSI Outlook Perekonomian Global Dan Indonesia' (Jakarta, 2020).

10. Rögnvaldur Hannesson, 'Energy And GDP Growth' (2009) 3 International Journal of Energy Sector Management.

11. Theodoros Koutroumanidis, Konstantinos Ioannou and Garyfallos Arabatzis, 'Predicting Fuelwood Prices In Greece With The Use Of ARIMA Models, Artificial Neural Networks And A Hybrid ARIMA-ANN Model' (2009) 37 Energy Policy.

energy which will help the environment<sup>12</sup>. One of the important determinants of economic growth and development is energy development<sup>13</sup>. However, it confirms that causality from GDP to energy consumption is relatively predominant in the OECD/developed countries as compared to the non-OECD/developing countries<sup>14</sup>.

The energy sector in Indonesia has been contributing to the economic development, which can be seen from the energy mix being stipulated in the National Energy Policy 2015 (RUEN, 2015). This sector was not explicitly mentioned in the national strategy for recovering the economy.

Energy is as a means for production, and the final product is a means for consumptions which leads to economic growth and increases emissions<sup>15</sup>. Another study finds that energy consumption causing environmental damage has led to economic growth<sup>16</sup>.

The National Energy Policy has set its energy mix, which shows the increase of renewable energy and decrease of fossil fuel, especially the use of coal for power plant. However, the unexpected situation due to the Covid-19 has influenced the process to reach the goal. The energy sector is one of many sectors that suffer from the pandemic. The global oil and gas industry has faced significant challenge due to the pandemic. Indonesian oil and gas industry is facing its downturn and requires emergency strategy due to the pandemic.

### **3. THE ROLE OF RENEWABLE ENERGY DEVELOPMENT IN INDONESIA POST COVID-19**

Developing a low-carbon economy energy sources, not only it supports the Paris Agreement, but for a country like Indonesia, it will be beneficial for the environment and society. However, developing clean energy only will not be enough for fulfilling the domestic needs. The transition in Indonesia is happening, but it will not be as fast as the OECD countries. Having populated by more than 270 million people, energy access and cheap energy are still the government priority, meaning, that while Indonesia is developing its low-carbon economy energy resources, it is also important to support the other

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12. Beckerman W. Economic development and the environment conflict or complementarity? Policy research working papers, world development report, WPS 961; 1992.
  13. Chontanawat J, Hunt LC, Pierse R. Causality between energy consumption and GDP: evidence from 30 OECD and 78 non-OECD countries. Surrey Energy Economics Centre (SEEC) Department of Economics SEEDS; 113; 2006. ISSN: 1749–8384.
  14. Ibid.
  15. Economic growth, energy consumption, financial development, international trade and CO<sub>2</sub> emissions in Indonesia Muhammad Shahbaz a,1, Qazi Muhammad Adnan Hye b,n, Aviral Kumar Tiwari c, Nuno Carlos Leitão d
  16. Hadi Sasana and Jaka Aminata, 'Energy Subsidy, Energy Consumption, Economic Growth, And Carbon Dioxide Emission: Indonesian Case Studies' (2018) 9 International Journal of Energy Economics and Policy.

sector, such as fossil fuel industry. As mentioned earlier, the fossil fuel industry in Indonesia has faced a huge challenge due to the pandemic and this does create other opportunity for other type of energy resources to grow, such as solar power and other type of low-carbon economy energy resources. This is then against the previous study that economic growth and energy consumption led to the increase of emission and environmental damage. A study has suggested that to enable countries having sustainable energy growth, and they should increase their investment in renewable energy development<sup>17</sup>.

Institute Essential Service Reforms (IESR) has seen this situation as an opportunity for renewable energy (solar power) to accelerate and contribute to the country's economic recovery. It is claimed that by developing this solar project, it will accelerate economic growth and sustainable<sup>18</sup>. Another study shows that there is a positive relationship between renewable energy development with economic growth<sup>19</sup>.

A renewable development is considered to bring direct impacts on the economy by creating more employment opportunities<sup>20</sup>, for example, in the first phase of constructing renewable energy infrastructures. A previous study on economic growth and carbon emission shows that these two have a positive relationship which then led to environment destruction<sup>21</sup> (e.g. Indonesia<sup>22</sup>). Hence, renewable energy, known as "clean" energy has been promoted to become environment-friendly energy by reducing the emission and to drive the economic growth<sup>23</sup>. Not only providing employment to local communities, but it also drives the economic growth by spending on training for communities

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17. Muhammad Wasif Zafar and others, 'From Nonrenewable To Renewable Energy And Its Impact On Economic Growth: The Role Of Research & Development Expenditures In Asia-Pacific Economic Cooperation Countries' (2019) 212 *Journal of Cleaner Production*.
  18. IESR, 2020. *Akselerasi Pembangunan Energi Terbarukan Sebagai Strategi Green Economic Recovery Pasca-COVID19 – IESR*. [online] IESR. Available at: <<http://iesr.or.id/akselerasi-pembangunan-energi-terbarukan-sebagai-strategi-green-economic-recovery-pasca-covid19/>> [Accessed 11 August 2020].
  19. Nadia Singh, Richard Nyuur and Ben Richmond, 'Renewable Energy Development As A Driver Of Economic Growth: Evidence From Multivariate Panel Data Analysis' (2019) 11 *Sustainability*.
  20. Nadia Singh, Richard Nyuur and Ben Richmond, 'Renewable Energy Development As A Driver Of Economic Growth: Evidence From Multivariate Panel Data Analysis' (2019) 11 *Sustainability*.
  21. Muhammad Azam and others, 'The Causal Relationship Between Energy Consumption And Economic Growth In The ASEAN-5 Countries' (2015) 47 *Renewable and Sustainable Energy Reviews*.
  22. Sugeng Mujiyanto and Günter Tiess, 'Secure Energy Supply In 2025: Indonesia's Need For An Energy Policy Strategy' (2013) 61 *Energy Policy*.
  23. Nadia Singh, Richard Nyuur and Ben Richmond, 'Renewable Energy Development As A Driver Of Economic Growth: Evidence From Multivariate Panel Data Analysis' (2019) 11 *Sustainability*.

## Economic Recovery in Indonesia Post Covid-19

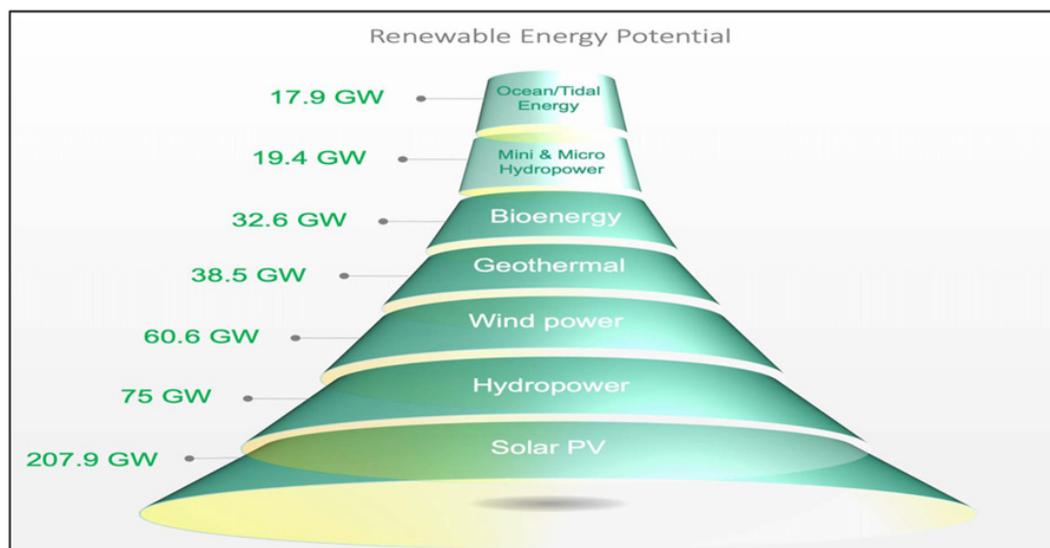


Figure 2: Renewable Potential & Installed Capacity in Indonesia.<sup>24</sup>

to maintain the infrastructure. The unemployment rate in Indonesia after Covid-19 has been forecasted to increase from 4.2% in February 2020 to 7.4%<sup>25</sup>. Hence, renewable energy development can also be a solution for the unemployment problem, but also energy security and energy poverty in Indonesia.

As a great and archipelago country as well as the fourth populous country in the world, Indonesia's energy demand is now higher than the current energy supply. Indonesia is a country with high dependency on carbon energy such as coal, oil, and gas, which are classified as non-renewable resources. One of the main characteristics of these resources is *exhaustible*, meaning that these resources are limited and being depleted when they are extracted. Indonesia has become an importing country for oil and gas since 2008<sup>26</sup>. As the needs of energy increasing, Indonesia started to develop its renewable energy following the Kyoto Protocol and the Paris Agreement. Indonesia is a country with great potential for its renewable energy which is 442 Gigawatt (*See Figure 2*)<sup>27</sup>, and it spread all over Indonesia (*See Figure 3*). The investment in renewable capacity on average is USD9.4 billion in 2015–2030<sup>28</sup>.

24. Harris Yahya, 'Renewable Energy In The Era Of Low Carbon Energy – Challenges & Opportunities –' (Bandung, 2019).

25. Faisal Basri, 'Economic Outlook Pasca Corona Virus Covid-19' (2020).

26. Harris Yahya, 'Renewable Energy In The Era Of Low Carbon Energy – Challenges & Opportunities –' (Bandung, 2019).

27. Ibid.

28. International Renewable Energy Agency, 2017. Renewable Energy Prospects: Indonesia A Remap Analysis. [online] Abu Dhabi. Available at: <<http://www.irena.org/remap>> [Accessed 17 July 2020].

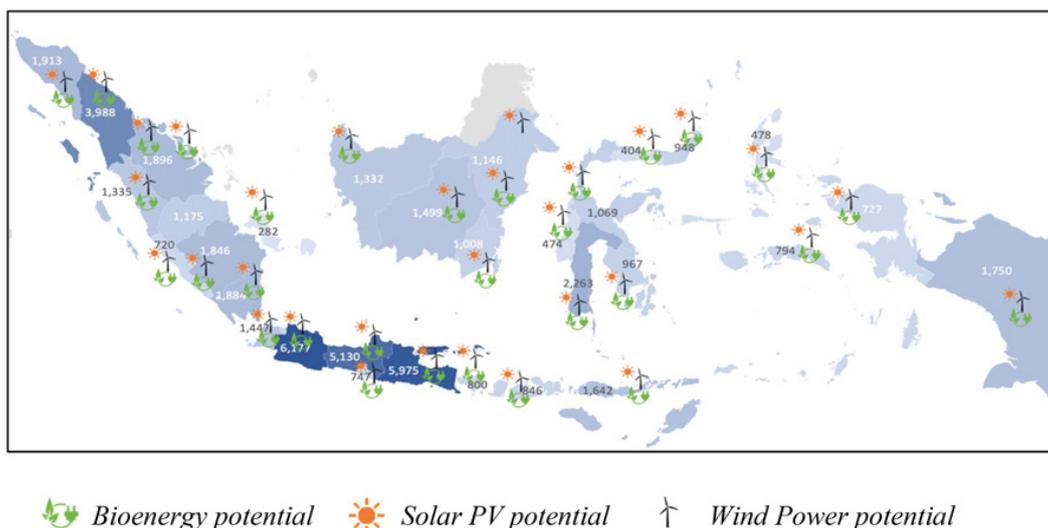


Figure 3: The Number of Hospitals and Local Hospitals Mapping<sup>29</sup> and Renewable Energy Potential in Indonesia.<sup>30</sup>

This paper suggests that by having these renewable developments in different places in Indonesia could contribute to the improvement of health service in isolated areas, which is significant for the communities there especially during the pandemic and -post-pandemic. Justice in the transition to a low-carbon economy should also be a concern of the government.

#### 4. MULTIPLIER EFFECT OF THE JUST ENERGY TRANSITION TO LOW-CARBON ECONOMY POST COVID-19

The Covid-19 has forced the country to put more effort to improve the country's economy. The role of the renewable energy project in economic development in Indonesia was not being highlighted prior to the pandemic. This pandemic has driven the development of renewable energy project even more as it is believed that this renewable energy development will enhance the economic recovery in Indonesia while the oil and gas industry in Indonesia was in crisis<sup>31</sup>. During the pandemic, the oil price fell to negative for the first time

29. 'Badan Pusat Statistik' (*Bps.go.id*, 2020) <<https://www.bps.go.id/dynamictable/2015/09/19/935/jumlah-desa-kelurahan-yang-memiliki-sarana-kesehatan-menurut-provinsi-2008-2018.html>> accessed 1 July 2020.

30. Ministry of Energy and Mineral Resources, 'General Plan of National Electrification' (2019).

31. IESR, 2020. Akselerasi Pembangunan Energi Terbarukan Sebagai Strategi Green Economic Recovery Pasca-COVID19 – IESR. [online] IESR. Available at: <<http://iesr.or.id/akselerasi-pembangunan-energi-terbarukan-sebagai-strategi-green-economic-recovery-pasca-covid19/>> [Accessed 11 August 2020].

and the oil and gas industry was crushed and in a survival mode. This pandemic has encouraged more and more parties to write on how the energy transition will support the government policy in recovering the economy.

Indonesia has been struggling to address its energy trilemma of energy access, security and sustainability<sup>32</sup>. Electricity is crucial for health services, especially to treat those who badly infected by the Covid-19. This situation has driven more energy project to happen, and in the crisis of oil and gas industry, the renewable energy has been promoted to increase the electricity supply and enhance the energy transition movement<sup>33</sup>.

Energy justice scholars<sup>34</sup> define ‘justice’ in the energy transitions in three different forms as follows:

*“(1) climate justice concerns sharing the benefits and burdens of climate change from a human rights perspective; (2) energy justice refers to the application of human rights across the energy life-cycle (from cradle to grave); and (3) environmental justice aims to treat all citizens equally and to involve them in the development, implementation and enforcement of environmental laws, regulations and policies.”*

The process of the energy transition to a low-carbon economy should bring equal distribution and justice to society. Renewable development in Indonesia could improve health sectors by reducing the carbon emission in general while consuming energy. This supports the earlier discussion about the development of renewable energy post-Covid-19 above. Not only it will improve the health services in remote areas, it will also contribute to the carbon emission reduction and improve the health and environment in the long term. These renewable developments could also drive the economy there. Some areas, such as offshores’ communities or remote areas’ communities would have more economic activities in their areas due to infrastructure development. This becomes significant during and posts Covid-19 as it will reduce the mobility from remote areas to a bigger city for daily needs or health services and eventually it will help the country recover from the Covid-19 (health perspective).

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32. Setyowati, A., 2020. Re-Energising Indonesia’s Electricity Policy During COVID-19 | East Asia Forum. [online] East Asia Forum. Available at: <[https:// www.eastasiaforum.org/2020/05/27/re-energising-indonesias-electricity-policy-during-covid-19/](https://www.eastasiaforum.org/2020/05/27/re-energising-indonesias-electricity-policy-during-covid-19/)> [Accessed 11 August 2020].

33. IESR, 2020. Akselerasi Pembangunan Energi Terbarukan Sebagai Strategi Green Economic Recovery Pasca-COVID19 – IESR. [online] IESR. Available at: <<http://iesr.or.id/akselerasi-pembangunan-energi-terbarukan-sebagai-strategi-green-economic-recovery-pasca-covid19/>> [Accessed 11 August 2020].

34. Raphael J. Heffron and Darren McCauley, ‘What Is The “Just Transition”?’ (2018) 88 *Geoforum*.

## *Global Energy Law and Sustainability*

Finally, this paper suggests that a transition to a low-carbon economy could contribute to the economic recovery in a justice way in many sectors. First, this renewable energy development contributes directly to human resources development by reducing the unemployment rate. Second, this renewable development improves the health sector by reducing the carbon emission and improve health services in remote areas all over Indonesia and reducing the spread of Covid-19. Third, this renewable energy development could accelerate the economic recovery in Indonesia and reach 5.2 to 5.6% in 2021<sup>35</sup> by developing infrastructures in remote areas along with renewable energy development. There will be more energy supply to do more economic activities. Not only the unemployment rate declines due to constructing renewable energy technology, but having more infrastructures being developed could also offer employments to communities. Eventually, when these infrastructures are developed, these would also provide more employment opportunity to local communities.

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35. Bank of Indonesia, 'Sinergi, Transformasi Dan Inovasi Menuju Indonesia Baru – Sinergy, Transformation And Innovation Into The New Indonesia' (Bank of Indonesia 2019).

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