

**GREEN ECONOMY THROUGH RENEWABLE ENERGY IN
PONDOK PESANTREN ANNUQAYAH BASED ON ISLAMIC
ECONOMIC FRAMEWORK**

THESIS

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Master of Sharia Economy**



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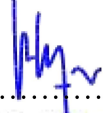
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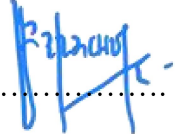
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INTRODUCTION

A. Background

The industrial revolution that happened in the late of the 18th and at the beginning of the 19th century (1760-1840) transformed human and animal labor technology into the machinery world. Coal played a vital role as the fuel. The early modern industrial era was created in the worldwide, which brought revolutions in textiles, mines, steam-powered railroads, steam-powered ocean freighters, steel production, and other areas of economic activities.¹ Up to now, the coal that powered factories and warmed house polluted the air dangerously. Textile dyes and other wastes poison river water.² The economy and the environment is not a trade off, but they should be in line. Nowadays, the loss of ecological aspects caused by the economy occurs in Indonesia. It seems from the extreme rainfall due to climate change,³ the highest rainfall for 24 years,⁴ extreme hot weather and forest fire 2019,⁵ and others.

¹ Doc3, 'The First Industrial Revolution: Creation of a New Global Human Era', *Journal of Social Sciences and Humanities*, 5.4 (2019), 377–87.

² Doc3.

³ Rakhmad Hidayatullo Permana, 'BMKG: Curah Hujan Ekstrem Di Jakarta Akibat Perubahan Iklim', *DetikNews*, 2020 <https://news.detik.com/berita/d-4843930/bmkg-curah-hujan-ekstrem-di-jakarta-akibat-perubahan-iklim?_ga=2.230346516.928948486.1619230089-366235841.1579242822>. Access on 24th April 2021.

⁴ Danu Damarjati, 'Jabodetabek Banjir, Curah Hujan 1 Januari 2020 Tertinggi Selama 24 Tahun', *DetikNews*, 2020 <https://news.detik.com/berita/d-4843412/jabodetabek-banjir-curah-hujan-1-januari-2020-tertinggi-selama-24-tahun?_ga=2.189063203.928948486.1619230089-366235841.1579242822>. Access on 24th April 2021

⁵ Glory Christinawaty, 'Karhutla 2019 Dan Cuaca Panas Ekstrem', *DetikNews*, 2019 <<https://news.detik.com/kolom/d-4827285/karhutla-2019-dan-cuaca-panas->

These series of events finally lead to the idea of green economy initiated by United Nation Environment Program (UNEP); the green economy initiative was launched in 2008 to promote the transition to economies that are low carbon, resource efficient, and socially inclusive.⁹ Green economy is offered as an innovative initiative to achieve sustainable

⁹ UNEP, 'Pathways to Sustainable Development and Poverty Eradication - A Synthesis for Policy Makers', *Towards a GREEN Economy*, 2011, 52.

Nowadays, the concept of a green economy becomes widely implemented by many countries through many sectors; one of them is renewable energy. A renewable energy resource is enormously potential as innovative options for electricity generation.¹¹ For greening the economy, the penetration of renewable energy is a key intervention; it's considering the potential of climate change mitigation, energy-saving, and the ability to generate green jobs.¹² The use of renewable energy is absolutely better for the environment, taking energy from the wind, water, or the sun does little to pollute the earth.¹³

In terms of natural resources, Indonesia has abundant natural resources including water, wind, solar, geothermal and biogas, but they are not used optimally. The fulfillment of energy needs still depends on fossil energy.¹⁴ According to The State Electricity Enterprise Statistics issued 2018, the portion of renewable energy in Indonesia has only reached 12.5% in the energy mix while the target is 23% of renewable energy by

¹⁴ Indonesian Ministry of National Development Planning, 'Indonesia EKONOMI SYARIAH Islamic Economic Masterplan INDONESIA 2019-2024', 2019. 152.

It means that renewable energy plays important rule to apply.

Renewable energy has been implemented by several institutions, especially in Pondok Pesantren (PP.); some of them are; 1) Pondok Pesantren Lembaga Dakwah Islam Indonesia (LDII) Wali Barokah, Kediri, Jawa Timur. Using solar cells covering an area of 41 meters x 40 meters produces a power of 220,000 watts per day since May 2019. In the future it can be optimized to produce more than 1 million watts of power. The solar power plant was imported from Canada, spending 10 billion costs, and equipped with 40 batteries for storing electrical energy at night with a capacity of 50 thousand watts.²⁰ 2) Pondok Pesantren Darussalam, Saobi, Kangayan, Sumenep. With the geographical location in the archipelago, the village of Saobi is difficult to get electricity. Using Solar Power Plant 0,15 Mw is the best solution to fulfil electricity needs in PP. Darussalam that doesn't get access to state power plant. 3) Solar power plant at Pondok Pesantren Annuqayah (Next will be written with PP. Anuqayah). Since 5th March 2018, PP. Annuqayah in collaboration with the Paiton Energy and the Community Economic Business Initiative (IBEKA) is using renewable energy, namely Annuqayah Solar Power Plant that has 30, 72 KWp.²¹ The implementation in these institutions, no

²⁰ Dino Oktaviano, 'Mengintip Pondok Pesantren Berenergi Baru Terbarukan', 2019 <<https://foto.kompas.com/photo/read/2019/05/29/15591191391f6/Mengintip-Pondok-Pesantren-Berenergi-Baru-Terbarukan>>. Access on 16th February 2021.

[illegible]

In this study, the researcher will focus on exploring the Annuqayah Solar Power Plant. In general, PP. Annuqayah gives concern on green economy, it can be seen from the various programs and activities that are continuously being promoted; reforestation which is routinely carried out almost every year, creating a conservation garden named Assalam, holding ecological schools and creating a healthy and clean Islamic boarding school environment, and using alternative energy as effort for reducing the use natural resource and climate change.²²

²² Faika, Islam, and Sunan.

[illegible]

sustainability for life, and not for exploitation. God say in al-Qur'an QS.

Ibrahim: 32,

اللَّهُ الَّذِي خَلَقَ السَّمُوتِ وَالْأَرْضَ وَأَنْزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجَ بِهِ ۖ مِنَ الثَّمَرَاتِ زَرْعًا لَكُمْ ۖ وَسَخَّرَ لَكُمُ الْفُلْكَ لِتَجْرِيَ فِي الْبَحْرِ بِأَمْرِهِ ۖ وَسَخَّرَ لَكُمُ الْأَنْهَارَ

“It is Allah who created the heavens and the earth and sent down rain from the sky and produced thereby some fruits as provision for you and subjected for you the ships to sail through the sea by His command and subjected for you the rivers”

Based on the lesson above, we can conclude three main principles as guidance to take attitude to universe; 1) respect the nature (*al-akhlaq al-makhluqiyyah*, 2) moral responsibility for nature (*al-mas'uliyah al-makhliqiyyah*), 3) cosmic solidarity for saving ecosystem (*al-ukhuwwah al-makhluqiyyah*).²⁴

The goal of Islamic sharia is dedicated to the prosperity and benefit of human (*al-maslahah*) both in the world and hereafter,²⁵ *Maslahah* rhythm is very dominant in the realm of *muamalat* or economy, opinion (*al-aqwal*) which excels not only has a textual basis but also can guarantee benefit and avoid damage (*al-mafsadah*),²⁶ Thus, it's necessary and unique to be reviewed about “green economy through renewable energy in Pondok Pesantren Annuqayah based on Islamic economic framework”.

There are three patterns to explain the meaning and implications of greening for sustainable development: (1) scarcity and limits, (2) means

²⁴ Ghazali and others. 70-71.

²⁵ Muhammad Abu Zahra, *Ushul Fiqih* (Cairo: Dar al-Shahwah, 1994).

²⁶ Veithzai Rival Zainal and others, *Ekonomi Mikro Islam* (Jakarta: Bumi Aksara, 2018). 168.

The green economy concept refers to a form of environmental governance in which authorities and interests may overlap and come into conflict at different scales that is why the main challenge is addressing the contradictions to the lack of coordination between different governance scales and political economy.³⁰ Most of the green sectors are dominated by agriculture-related sectors.³¹ Some negative impacts on biodiversity also do exist, and need to be considered when developing renewable energy policies.³² Green economy needs to be implemented as a part of Islamic economy to provide fundamental correction to conventional economy.

³² Gasparatos and others.

Since renewable energy clusters are included in the halal value chain of master plan sharia economy in Indonesia, this trend has become a renewal of interest in scientific development and practice, especially renewable energy included in the application of green economy that prioritizes the health of people and earth. Hence, Indonesia as the largest Muslim population in the world, it is necessary and interesting to explain this term from the aspects of Islamic economy as an approach in the application of renewable energy. The core green economy through renewable energy and how it is viewed from Islamic economic study³⁴ has been addressed in some previous research,³⁵ but how renewable energy influences and affects the economy, social, and environment is still unclear. The explanation about renewable energy is also still general, particularly in solar power plants as this study.

³⁴ Azwar Iskandar and Khaerul Aqbar, 'Green Economy Indonesia Dalam Perspektif Maqashid Syari'ah', *Al-Mashrafiyah: Jurnal Ekonomi, Keuangan, Dan Perbankan Syariah*, 3.2 (2019), 83 <<https://doi.org/10.24252/al-mashrafiyah.v3i2.9576>>; R Budiarto, A R Wardhana, and A Prastowo.

³⁵ Negin Vaghefi, Chamhuri Siwar, and Sarah Aziz Abdul Ghani Aziz, 'Green Economy: Issues, Approach and Challenges in Muslim Countries', *Theoretical Economics Letters*, 05.01 (2015), 28–35 <<https://doi.org/10.4236/tel.2015.51006>>; Nguyen Hoang Tien, Le Doan, and Minh Duc, 'Green Economy as an Opportunity for Vietnamese Business in Renewable Energy Sector', *Int. J. Finance Manage*, January, 2019; Michael Pahle, Shonali Pachauri, and Karoline Steinbacher, 'Can the Green Economy Deliver It All? Experiences of Renewable Energy Policies with Socio-Economic Objectives', *Applied Energy*, 179.642147 (2016), 1331–41 <<https://doi.org/10.1016/j.apenergy.2016.06.073>>.

The background above has identified research as follows:

- Annuqayah need to be evaluated specially from Islamic economic framework in order to have the blueprint strategies in the future.

2. Practically

- a. This research is expected to give understanding for society about the green economy through renewable energy in order to take action together protecting our planet by supporting a sustainable development economy.
- b. The result of this research will be literature about green economy through renewable energy in Islamic economic framework
- c. This research will be beneficial to the development strategy of PLTS Annuqayah application

F. Previous Research

Based on the literature review, here are some studies that have been done and relevant to this research:

1. A research was written by Olivia Bina entitles “The green economy and sustainable development: an uneasy balance?” the paper is published by Environment and Planning C: Government and Policy 2013, volume 31, pages 1023 – 1047. This paper has examined three patterns scarcity and limits, means and ends, reductionism (separation) and unity that help to explain the meaning and implications of greening for sustainable development, revealing an economization and polarization of discourses, the persisting weak interpretation of sustainable development, and a tension between the fixing or shifting

4. A research was managed by Zachary R. Andersona, Koen Kustersb, John McCarthy, Krystof Obidzinski, with the title “Green growth rhetoric versus reality: Insights from Indonesia” published on *Global Environmental Change* 38 (2016) 30–40, examining the gap between national ambitions and the ground reality is the focus on this research, with particular attention to the challenges of multi-scalar environmental governance. Researchers found that the de facto policy setting provides for exploitive resource-intensive pathways for economic growth. The national and provincial scales Green economy policies remain disconnected from existing economic development plans and the priorities of district-level governments. And, when green economy goals are translated across scale, they come into conflict with existing forms of environmental governance and resource extraction.³⁹
5. It was published in *Environ Econ Policy Stud* Cross Mark under the title “Green economy priority sectors in Indonesia: A SAM approach” with the researchers; Lilia Endriana, Djoni Hartono, and Tony Irawan. This paper aims to identify sectors that satisfy all three criteria of a green economy framework; 1) have a high multiplier effect on the economy; 2) have relatively low CO2 emissions and 3) better income distribution. The paper identifies 11 sectors that satisfy all three criteria of a green economy concept and ten sectors that satisfy two criteria of

Companies in Land-Use Intensive Sectors Align with Sustainability Concepts?", *Ecological Economics*, 158, December 2018 (2019), 116–33
<<https://doi.org/10.1016/j.ecolecon.2018.12.026>>.

³⁹ Anderson and others.

A. GREEN ECONOMY

Reducing environmental risks and ecological scarcities significantly while improving human well-being and social equity is the goal of the green economy introduced by UNEP. It is low-carbon, resource-efficient, and socially inclusive. In a green economy, growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, as well as enhance energy and resource efficiency, and prevent the loss of

⁴⁵ Burkat.

has only reached 12.5% of the energy mix while the target is 23% in 2025.⁵¹

lessening dependence to fossil fuels is hoped as the most important determinant in the transition making green economy.⁵⁶

2. The Principal of Green Economy

Transforming economy as an inclusive green economy should hold on these five principles;⁵⁷

1) The well-being principles

People are the center of a green economy which the purpose is to create genuine and prosperity. It supports well-being and growing wealth, the term wealth on this concept is not merely financial, but includes the full range of social, human, physical, and natural capitals. The wellbeing principles are prioritizes sustainable natural systems, infrastructure, knowledge and education access and investment that are needed for all people to prosper.

2) The justice principles

Promoting the equitable distribution of opportunity and outcome within and between generations is the second principle of the green economy. It is inclusive and non-discrimination, it shares decision-making, benefits, and cost fairly; avoiding elite capture and especially support women's empowerment.

3) The planetary boundaries principles

56 UNEP.

⁵⁷ Green Economy Coalition, 'Principles , Priorities and Pathways for Inclusive Green Economies : Economic Transformation to Deliver the SDGs', 2019, 1–28 <greeneconomycoalition.org>.

Remaining planetary boundaries and decarbonizing economies is a way to shift limit consumption of natural resources to physically sustainable levels. It embraces a new model of economic growth without rising resource consumption. It recognizes a ‘social floor’ of basic goods and services consumption that is essential to meet people’s wellbeing and dignity, as well as unacceptable ‘peaks’ of consumption. It aligns prices, subsidies with true costs to society.

5) The good governance principles

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so its utilization must be responsible.⁶⁰ In the planning of electric power systems with a very long period of time must adhere to the system of benefits, efficiency, fairness, sustainable, economic optimization in the utilization of energy resources, maintaining its own capabilities (domestic), healthy business rules, security and safety, regional autonomy, and also the sustainability of environmental functions.⁶¹

longitude, makes Indonesia located in a tropical climate area with two changes in the seasons, namely the rainy season and the dry season. The impact of this astronomical position also makes sunlight tend to be available from morning to evening throughout the year.⁶⁷

3. Kind of Solar Power Plant

The main configuration in a solar power generation system can be grouped into; 1) two parts of a stand-alone installation, 2) a system that is connected to another utility or network (grid-connected installation), 3) a combination of the two configurations. Generally stand-alone configurations are supported by storage media in the form of batteries (stand-alone system with battery) while systems connected to the network rarely use batteries (stand-alone direct-coupled system). Systems connected to the network must operate synchronously and meet established standards. The three kind of solar power plants are: ⁶⁸

- a. stand-alone configuration (off-grid)

Stand-alone configuration or also known as off-grid system is a solar power generating system that produces electricity independently and is planned and built not to be connected to existing power generation utilities. In general, this system is used when there is no electricity network in an area or it is far from a power plant center. This configuration does not rule out the possibility that it will also be built in areas that already have an

⁶⁷ Tambunan. 20.

⁶⁸ Tambunan, 131-141

adequate electricity grid because the community has a preference for producing electrical energy independently by utilizing renewable energy.

The off-grid solar power generation system is one of the alternatives for the provision of electricity, especially for the frontier, outermost and underdeveloped categories which are generally quite far from the provincial capital so that in some cases it can be said to be lagging behind from the community's economy, human resources, facilities and infrastructure, regional financial capacity, and accessibility. In addition to the frontier, outermost, and disadvantaged areas, the off-grid configuration is an option for tourist attractions such as resorts.

b. Connected configuration to a network (on-grid)

On-grid is defined as a solar power generation system that is interconnected to an existing utility or network in the area. In general, grid-connected solar power generation systems are built without using battery technology as a component of energy reserve storage. In the on-grid system, the technical synchronization of solar power plants to the existing system is one of the most important factors that need to be considered. This is because the supply of electrical power from solar power generation systems is greatly influenced by solar energy which depends on natural conditions such as weather, seasons, clouds, and so on. Rooftop

Rooftop solar power plants connected to the grid are currently widely used on the roofs of residential cluster buildings, commercial buildings and industrial complexes. The electrical energy generated by the rooftop solar power plant can be used to use local loads, especially during the day. Another advantage of using on-grid electricity generators is that it reduces the monthly bill for electricity customers.

A system with a hybrid configuration is defined as a solar power plant connected to an existing network which is then operated in conjunction with other generators. Hybrid systems are a combination of off-grid systems and on-grid systems. Hybrid system has no need for a state power plant because it has its own battery to back up energy, but this system can also connect to the state power plant network.

Decisions are made at all levels of the organization or institution. It begins by distinguishing between facts and values in order to deal scientifically with decision-making. Herbert A. Simon first proposed this

The rational manager in organization or institution viewpoint implies a fully informed and rational decision-maker (“economic man”).⁷¹ Economic man has a complete and consistent system of preferences that allows him to choose among the alternatives available to him at all times; he is always fully aware of what these alternatives are; the complexity of the computations he can perform to determine which alternatives are best has no limits; probability calculations are neither frightening nor mysterious to him.⁷² The steps in the process of rational decision-making are as follows, as described by Simon:⁷³

- ⁶⁹ Herbert A. Simon, 'A Theory of Administrative Law', *Administrative Law*, 1943, 335–76 <<https://doi.org/10.4324/9781315183770-15>>.
- ⁷⁰ Jean-Charles Pomerol and Frédéric Adam, 'Understanding the Legacy of Herbert Simon to Decision Support Systems', *Encyclopedia of Decision Making and Decision Support Technologies*, 2011, 930–38 <<https://doi.org/10.4018/978-1-59904-843-7.ch105>>.
- ⁷¹ Melvin A. Hanson and Avery B. Cohan, 'Financial Decision Making--Theory and Practice.', *The Journal of Finance*, 29.4 (1974), 1341 <<https://doi.org/10.2307/2978418>>.
- ⁷² Herbert A. Simon, 'Administrative Behavior', *Dictionary of Strategy: Strategic Management A-Z*, 1997 <<https://doi.org/10.4135/9781452229805.n17>>.
- ⁷³ Simon, 'Administrative Behavior'.

and social bottom lines. However, there is one area where we are seeing a growing degree of overlap between a company's economic and environmental performance: "eco-efficiency." According to the commonly accepted definition, eco-efficiency entails providing competitively priced goods and services that meet human needs and improve quality of life while gradually reducing ecological impacts and resource intensity throughout the life cycle to a level at least equal to the Earth's estimated carrying capacity.

2. Planet (Environment)

The planet bottom line assesses an institution's environmental preservation. Natural capital can be divided into two types: "critical natural capital" and "renewable, replaceable, or substitutable natural capital." The first embraces natural capital that is essential to the preservation of life and ecosystem integrity; the second embraces natural capital that can be renewed (e.g., through breeding or relocation of sensitive ecosystems), repaired (e.g., environmental remediation or desert reclamation), substituted or replaced (e.g., increasing use of man-made substitutes, such as solar panels in place of fossil fuels). It includes positive outcomes, negative consequences, and net environmental benefit. The potential indicators reflect the sheer number of potential issues, and thus the expanding range of possible environmental risks. However, there is a growing need to quantify environmental impacts using new metrics such as: the number

3. People (Social)

[illegible]

1. Definition of Islamic Economy

Islamic economy studies the economic problems of the people based on Islamic values. Islamic economy is different from capitalism,

⁸¹ Thomson Reuters, 'State of the GLOBAL ISLAMIC ECONOMY', *Dubai the Capital of Islamic Economy*, 2015, 1–287.

In the Islamic economic system all forms of activity are always associated with worship. This worship then affects all forms of production, consumption, distribution and other economic interactions. Specifically, there are at least three main motives in Islamic economic behavior, namely *mashlahah* (public interest), needs and obligations. Meanwhile, according to Al-Shadr (1994), Islamic economics consists of three basic components that differentiate it from other economic system theories, namely: ⁸⁴ (1) the principle of multi-faceted

<<http://journals.ums.ac.id/index.php/jisel/article/view/11904>>.

muslim.⁸⁷ That are: 1) preserving of religion; religion calls for justice, this includes being fair to the environment, 2) preserving of soul; preserving the environment as well as protecting the soul, because guarding the soul includes maintaining safety, health and human life, 3) preserving of offspring; which means maintaining of human life and all forms of the development must be oriented and consider the survival of the human generation, 4) preserving of mind, protecting the environment in fact protecting human beings both physically, spiritually and intellectually, 5) preserving of wealth, nature and the environment including property that we should keep.⁸⁸

“The truthful and honest trader will be in the company of the Ambiya, the truthful ones and martyrs [in the Hereafter]” (HR. Bukhari)

c. Happiness in the world for happiness in the hereafter

Man must not ignore the happiness in the world. The man does his best to obtain good life. Allah says in Surah al-Ma'idah (5: 87-88)

يَا أَيُّهَا الَّذِينَ آمَنُوا لَا تَحْرِمُوا طَيِّبَاتِ مَا أَحَلَّ اللَّهُ لَكُمْ وَلَا تَعْتَدُوا إِنَّ اللَّهَ لَا يُحِبُّ الْمُعْتَدِينَ وَكُلُوا مِمَّا رَزَقَكُمُ اللَّهُ حَلَالًا طَيِّبًا وَاتَّقُوا اللَّهَ الَّذِي أَنْتُمْ بِهِ مُؤْمِنُونَ

“O you who have believed, do not prohibit the good things which Allah has made lawful to you and do not transgress. Indeed, Allah does not like transgressors, (87) and eat of what Allah has provided for you [which is] lawful and good. And fear Allah, in whom you are believers (88).

d. Behaving fairly to people

Human beings should be kind to others, carry out responsibilities to society and help those in distress. Allah says in Surah ar-Rum (30:38)

فَاتِذَا الْقَرْيَةُ حَقَّتْ ۖ وَالْمَسْكِينُ وَابْنُ السَّبِيلِ ۚ ذَٰلِكَ حَيَّرَ لِلَّذِينَ يُرِيدُونَ وَجْهَ اللَّهِ ۖ وَأُولَٰئِكَ هُمُ الْمُفْلِحُونَ

“So give the relative his right, as well as the needy and the traveler. That is best for those who desire the countenance of Allah, and it is they who will be the successful”.

e. Not do harm

وَلَا تَأْكُلُوا أَمْوَالَكُمْ بَيْنَكُمْ بِالْبَاطِلِ وَتَذَلُّوا بِهَا إِلَى الْحُكَّامِ لِتَأْكُلُوا فَرِيقًا مِمَّنْ
أَمْوَالِ النَّاسِ بِالْإِثْمِ وَأَنْتُمْ تَعْلَمُونَ ء

3. Islamic Economic Scope

The main characteristics of Islamic economics, other than being derived from the Quran and Sunnah, are free from the elements of *usury*, *gharar*, *maysir*, and components that are forbidden in Islam⁹¹. In other words, Islamic economics is halal economy according to the *syara'*. With this comprehensive definition, coverage of the Islamic economic development roadmap covers all sectors of the economy

⁹¹ (مدينة: دروس الدورة العلمية بمسجد الراحي بمدينة، 2020) الماعملات المالية المعاصرة، الدكتور خالد بن علي المشيخ.

categorized as sharia compliant or halal and it is in accordance with *maqāsid al-syarī'ah*.⁹²

4. *Maqāsid al-Syarî'ah*

Etymologically, *maqāsid al-syarî'ah* is a combined term of two words: *maqāsid* and *al-syarî'ah*. *Maqāsid* is a plural form of *maqshad*, *qashd*, *maqshid* or *qushûd* which is a derivation of a verb *qashada* *yaqshudu* with various meanings, such as towards a direction, goal, middle, just and does not transcend boundaries, a straight path, midway between extravagance and deficiency.⁹³

The term *maqāsid* refers to a purpose, objective, principle, intent, goal, end, telos (Greek), finalité (French), or Zweck (German). *Maqāsid* of the Islamic law are the objectives/purposes behind Islamic rulings. For a number of Islamic legal theorists, it is an alternative expression to ‘people’s interests’ (masalih).⁹⁴ *Maqāsid al-syarî’ah* first introduced by Imam Abu Ishaq alSyathibi, even he was known as the founding father of *maqāshid al-syarî’ah* (Mu’assis ‘Ulûm al *maqāsid* al-Syarî’ah), six centuries later continued by ‘ibn ‘Asyur; an Islamic scientist from Tunisia.⁹⁵

Dimension of *maqāsid* are classified in various ways, traditional classification of *maqāsid* divide them into three and should be applied by the hierarchy form, which are: (1) Necessities of Maslahah (الضرورية)

⁹² Indonesian Ministry of National Development Planning.

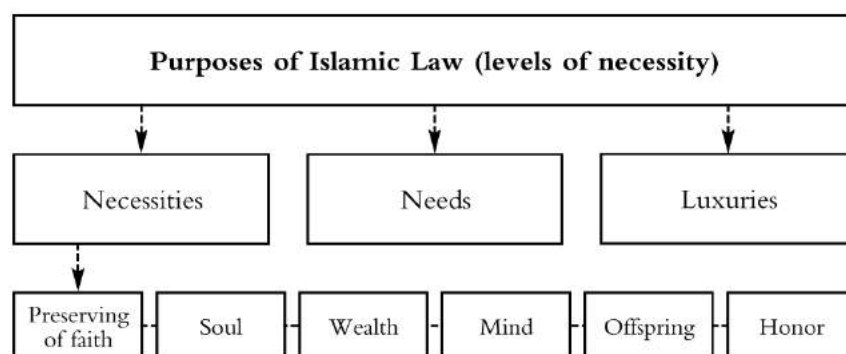
⁹³ Ahmad Imam Mawardi, *Fiqh Minoritas* (LKIS Yogyakarta, 2010). 178.

⁹⁴ Jasser Auda, *Maqashid Al-Shariah as Philosophy of Islamic Law A Systems Approach* (London: The International Institute of Islamic Thought, 2007). 2.

⁹⁵ Mawardi, 181-182.

Table 2.1

Purposes of Islamic Law



⁹⁶ Auda. 3.

⁹⁷ Auda, 4.

To remedy the above shortcomings, modern scholarship introduced new conceptions and classifications of *al-maqāsid* by giving consideration to new dimensions. First, considering the scope of rulings they cover, contemporary classifications divide *maqāsid* into three levels: (1) General *maqāsid* : These *maqāsid* are observed throughout the entire body of the Islamic law, such as the necessities and needs mentioned above and newly proposed *maqāsid* , such as “justice” and “facilitation”; (2) Specific *maqāsid* : These *maqāsid* are observed throughout a certain “chapter” of the Islamic law, such as the welfare of children in family law, preventing criminals in criminal law, and preventing monopoly in financial transactions law; (3) Partial

¹⁰⁰ Mawardi, 184.

maqāsid : These maqasid are the “intents” behind specific scripts or rulings, such as the intent of discovering the truth in seeking a certain number of witnesses in certain court cases, the intent of alleviating difficulty in allowing an ill and fasting person to break his/her fasting, and the intent of feeding the poor in banning Muslims from storing meat during Eid/festival days.¹⁰¹

Contemporary conceptions of *maqāsid* is having widely meaning and significance, as like ‘the preservation of offspring evolved into ‘care for the family’ and proposals for a civil ‘Islamic social system,’ how the ‘preservation of mind’ evolved into ‘propagation of scientific thinking,’ ‘travelling for the pursuit of knowledge,’ ‘suppressing the herd mentality,’ and even ‘avoiding the expert immigration’. The ‘preservation of honor’ evolved into ‘preservation of human dignity’ and ‘protection of human rights’.

¹⁰³ Auda. 248.

A. Kind of Research

From the background and research problem formulations that have been described above, the researcher tries to make a related analysis of economic, social and environmental aspects in PP. Annuqayah is

¹⁰⁷ Yin. 12.

implementing a green economy through solar power plant. As well as the things underlying the caregivers' policies, including the long and short term to be achieved in using Annuqayah Solar Power Plant. Hopefully the results of this research will provide an overview and open opportunities to further support sustainable economic development more massively.

B. Research Location

The research of “Green Economy through Renewable Energy in Pondok Pesantren Annuqayah based on Islamic Economy Framework” is located in Pondok Pesantren Annuqayah Guluk-Guluk, Sumenep, Jawa Timur. PP. Annuqayah was chosen as the location of this research because it is the only pesantren in east Java that uses an on-grid system solar power plant. The use of renewable energy in pondok pesantren is also lack of research.

C. Data Source

To examine, evaluate, and understand the impact of the implementation of the green economy through renewable energy (Annuqayah solar power plant), the researcher will use the six sources of evidence of case study approach, that are:¹⁰⁸ documentation, archival records, interviews, direct observation, participant-observation, and physical artifacts. The data will be collected by official data from PP. Annuqayah, interviews with kiai, santri, and stakeholders.

¹⁰⁸ Robert K. Yin, 'Robert K. Yin Case Study Research Design and Methods, Third Edition, Applied Social Research Methods Series, Vol 5 2002.Pdf' (SAGE Publitions, 2003), 86.

The following people were chosen as key informants for this study:

K. Moh. Naqib Hasan has served as the chairman of the Annuqayah Islamic boarding school since 2016. The researcher has known the informant since 2014 when he became the teacher of researcher at senior high school, then it was involved in professional communication from 2016 to 2018 because the researcher worked for an organization that was directly overseen by the informant, the informant figure as resolute, broad-minded, and straight to the point. When the researcher proposed a meeting with the Annuqayah solar power plant to conduct an interview about the Annuqayah solar power plant, he immediately agreed.

¹⁰⁹ Sugiono, *Metode Penelitian Kuantitatif, Kualitatif, Dan R&D* (Bandung: Alfabeta, 2009). 218-219.

2. K. Ainul Yaqin

3. K. Muhammad Affan Adzim

[illegible]

4. K. M. Faizi

5. K. Panji Taufiq

To get more complete data, researcher also doing interviews with 3 IBEKA teams, 2 manager of solar power plant Annuqayah, 1 Chief transaction energy of state power plant Sumenep, 9 supervisor of PP.

17.	Nadia Azka Uyun	Santri
18.	Nuril Maula Afifah	Santri
19.	Rohibatul Falihah	Santri
20.	Siti Kamilah	Santri
21.	Sofia Namullah Maha Kiki	Santri
22.	Bapak Hasib	Local Community
23.	Dalilah	Local Community
24.	Hibat al-Wafirah	Local Community
25.	Ibu Roziqoh	Local Community
26.	Ismatin	Local Community
27.	Moh. Rofiuddin	Local Community
28.	Rahmatul Uyun	Local Community
29.	Siti Nur Haliza	Local Community
30.	Zahrotun Ni'am	Local Community

The data in the form of documentation, archival records, and physical artifacts is obtained from the PP. Annuqayah secretariat office and Annuqayah solar power plant offices. Various literature data; book, journal, news, and other reliable sources also completed it as secondary data.

qualitative research. Observation helps to save the object of research, such as a special place, organization or group of people.¹¹²

Direct observation is a very effective way to view events naturally without any element of pretense. Hence researcher plays her role as the key instrument of this study. The observation was done from 24th May 2021 up to 5st July 2021 in PP. Annuqayah. Researcher directly observed through Annuqayah solar power plant, observing how it works from the Annuqayah solar power plant to all of area which got Annuqayah solar power plant electricity and how it manages. Through this observation researcher got a whole picture of the green economy through renewable energy in PP. Annuqayah.

3) Documents

The documentation technique used in this study aims to obtain information related to the green economy through renewable energy at the PP. Annuqayah. Documentation becomes concrete evidence that is collected by someone or institutions for the purpose of proving events or accounting.¹¹³

E. The Technique of Data Analysis

Data analysis technique is the process of searching and systematically compiling data from interviews, observations and documentation by organizing data and choosing which ones are important and which ones need to be studied to make an easy conclusion to

¹¹² Salim and Syahrur. 114.

¹¹³ Lexi J. Moleong, *Metode Penelitian Kualitatif* (Bandung: Remaja Rosdakarya, 2011). 40.

A. Pondok Pesantren Annuqayah

Pondok Pesantren Annuqayah is located at the eastern tip of Madura Island, in Guluk-Guluk Village, Guluk-Guluk District, Sumenep Regency. Meanwhile, the Guluk-Guluk sub-district is about 30 km from the city center of Sumenep and to the west it is bordered by Pakong District, Pamekasan Regency. Geographically, Guluk-Guluk village is located between 6 ° 00'-7 ° 30 'with an altitude of ± 117 meters above sea level, with an area of 1,675,955 ha from the area of Guluk-Guluk sub-district which has an area of 6,691,316 ha. Like other areas of Madura, this area tends to consist of limestone rocks and most of the soil is of a Mediterranean type. While the annual average rainfall is 2176 mm, with a daily amount of approximately 100 days per year.¹¹⁶

The determination of the name Annuqayah is taken from the Arabic language, which means: cleanliness, purity and choice. The

[illegible]

Pondok Pesantren Annuqayah was founded by KH Moh Syarqawi in 1887 AD. He was born in Kudus, Central Java. Before establishing a pesantren, he studied and wandered for 13 years in various regions in Indonesia and even abroad, such as Malaysia, Patani (Southern Thailand) and lived in Mecca. In his work to spread the knowledge he had learned, Kiai Syarqawi first opened the Qur'an learning and classical books in Prenduan Sumenep, 14 years later, Kiai Syarqawi with his two wives (Ny. Khodijah and Ny. Qomariyah) and Kyai Bukhari (son of the first wife) moved to Guluk-Guluk with the intention of establishing a pondok pesantren. With the help of a rich merchant named H. Abdul Aziz, he was given a plot of land and building materials. On this plot of land, he built a house and a *langgar*. This place was later called Dalem Tenga.¹¹⁸

Qamariyah, about 200 meters to the west of Dalem Tenga. The

¹¹⁸ Arsyi and others. 3.

The reform of the education and teaching system at Pondok Pesantren Annuqayah was initiated by K. Khozin Ilyas, son of K. Ilyas Syarqawi in 1933. Santri learned sciences that were considered new at that time; such as Latin writing, arithmetic, the Indonesian language, geography, and history. The application of this classical system was also carried out by K. Abdullah Sajjad in the Latee area and until now it was continued by his son, KH. A Basyir AS and now it is continued by K. Ainul Yaqin. He established Madrasah Diniyah (starting with 6 classes and *wustha* 3 classes).¹¹⁹

¹¹⁹ Arsyi and others. 5-6.

The name of Region	Founder	Year
Lubangsa	KH. Moh. Syarqawi (alm.)	1887
Latee	KH. Abdullah Sajjad (alm.)	1923
Nirmal (know is known as Lubangsa Utara)	K. M. Hasan Bashri (alm.)	1963
Al-Furqan	K. Husein	1917
Lubangsa Selatan	K. H. Moh. Ishomuddin AS (alm.)	1972

[illegible]

No	The Name of PP. Annuqayah Region	Total of Santri
1	Lubangsa	1.090
2	Lubangsa Putri	1.110
3	Lubangsa Selatan	290
4	Lubangsa Selatan Putri	313
5	Lubangsa Utara	126
6	Lubangsa Utara Putri	176
7	Lubangsa Tengah	163
8	Latee	1.203
9	Latee 1 Putri	464
10	Latee 1 Putra	8
11	Latee II	1.052
12	Latee Utara	7
13	Al Furqan	24

B. Annuqayah Solar Power Plant

On 05 March 2018, Pondok Pesantren Annuqayah inaugurated the Annuqayah Solar Power Plant that was obtained through corporate social responsibility (CSR) of Paiton Energy, in collaboration with the People Centered Business and Economic Institute (IBEKA). Paiton Energy is a corporation that is engaged in the field of power plants and currently owns as well as operate three coal-fired power plants at Paiton Power Complex in Probolinggo, East Jawa. Paiton Energy

[illegible]

PP. Annuqayah and Mandiri Foundation have a good relationship personally and professionally. Annuqayah is valued as the most successful program for the training of TTG held by LP3ES and Mandiri Foundation as the trainer, Mandiri Foundation also saw that Annuqayah is the most serious institution for developing appropriate technology (TTG). That is why; in 1985 Mandiri Foundation directly collaborated with Annuqayah in a technology forum program. Thus, Mandiri Foundation keep on relation with BPM-PPA by communication with Toni Pangcu Driyantonono; one of the founders of Mandiri Foundation until now.¹²⁵

nergi, 'Paiton Energy at A Glance' <<https://www.paitonenergy.com/>>. Access on 24th March 2021.

A, 'From a Will to Fight Inequality in The Seventies...' <<http://www.kemendagri.go.id/wp/index.php/en/our-mission/>>. Acces on 24th March 2021.

gcu Driyantoro, *Interview*. Guluk-Guluk, 10th June 2021.

¹²⁵ Toni Pangcu Drivantoro, *Interview*. Guluk-Guluk, 10th June 2021.

pesantren and filled the requirements.¹²⁷

2. Annuqayah Solar Power Plant Logo and The Founder Team

A month before the inauguration of Annuqayah Solar Power Plant, there was a design logo competition of Annuqayah Solar Power Plant that was joined by santri Annuqayah and the first winner would be chosen as the official logo of Annuqayah Solar Power Plant.¹²⁸ On the inauguration day, Harirurrahman was announced as the first winner. He got an award Rp.1.000.000 and his design was used as the official logo of Annuqayah Solar Power Plant until now. The logo is in the shape of a globe. There are 3 icons that symbolize a glass. The glass in the Solar Power Plants is the core icon. The second is the leaves. Leaves are here as an abstract form of life. And the last one is the Sun Icon. From this we can clearly see that all the two components in front are just a support whose source is the sun and all three are related to each other. There are three colors used, orange as the color of the sun icon, dark blue as the color of the glass icon and green as the color of the leaf icon (life).¹²⁹

¹²⁶ Baudi Irawan, *Interview*. Zoom Meeting, 1st June 2021.

127 Drivantoro.

¹²⁸ Mundzir, *Interview*. Guluk-Guluk, 27th May 2021

¹²⁹ Harirurrahman, *Interview*. Guluk-Guluk, 18th June 2021.

e. Distribution Panel

The PV system has no storage. It cannot serve the load in the absence of the grid. The distribution panel is the one which will connect the solar power to the state power plant.

Picture 4.6 Distribution Panel



f. Mater Box

The master box will give information about the energy inflow of inverter 1 and inverter 2. The master box that is used is Tabuchi Electric with model EOW-MBX04-TH. It is the master box for a three-phase inverter.

Picture 4.7 Mater Box



that's also the amount of solar power plant capacity produced later
can only be flowed to some areas only.¹³⁶

Besides, if using the on-grid system, here are some possible cause; (1) The maintenance is easier, 2) the operating time is longer, 3) the machine device is cheaper than an off grid system which uses a battery and the most fit price with the 1,3 billion CSR Budget, 4) if using an off-grid system (using batteries), PP. Annuqayah is not expected to be able to replace it when it is damaged, even though it applies savings from now on.¹³⁷

c. Choice: picking a certain course of action from a list of options

Through those possible cause of action above, SMA Annuqayah was chosen as the location of a solar power plant on the third floor and shouldn't be built for classrooms anymore. The on-grid system is also chosen as the Annuqayah solar power plant and the electricity produced is distributed to some areas of Annuqayah.

The solar power plant was built for about six month from the survey of location, the analyses of electric energy needed, coordination with state power plant about the operating permission and export-import mechanism, and so on. The solar power plant of Annuqayah was done with 30.72 KWp capacities.¹³⁸

136 Hasan.

¹³⁷ K. Ainul Yaqin, *Interview*. Guluk-Guluk, 16st June 2021.

¹³⁸ Mundzir. Guluk-Guluk, 27st May 2021.

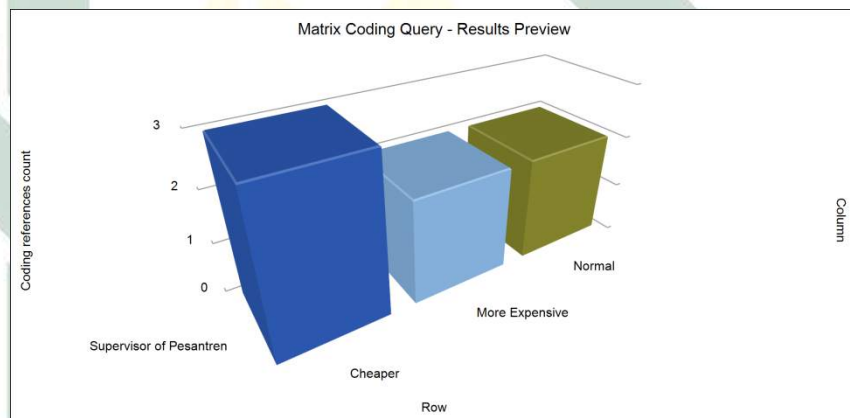
Table 4.4
Decision Making Background of the implementation Annuqayah
Solar Power Plant

No.	Simon's Steps of Decision Making	The PP. Annuqayah 's Analyze
1.	Intelligent; identifying opportunities for making a decision	- keeping the relationship with IBEKA that has been established since the 1990s - Unless facilitate electricity, solar power plant aslso could be the learning media about renewable energy for santri - Demonstrates some PP. Annuqayah's vision and mission that is concerned about the environment and enters the trend of energy usage of renewable energy that is more environmentally friendly
2.	Design: conceiving, developing, and analyzing possible courses of action	- The location of solar power plant between Masjid Jami' Annuqayah (stronger sun intensity) and SMA Annuqayah (the construction is more suitable) - The system using is between off-grid (using battery storage but more expensive, not match the CSR budget, and PP. Annuqayah predict couldn't replace the battery when it damage) and on-grid system (cheaper, the maintenance is easier, the operating time is longer)
3.	Choice: picking a certain course of action from a list of options	- PP. Annuqayah accept the CSR - SMA Annuqayah is

Picture 4.15
Word Frequency of Economy Aspect



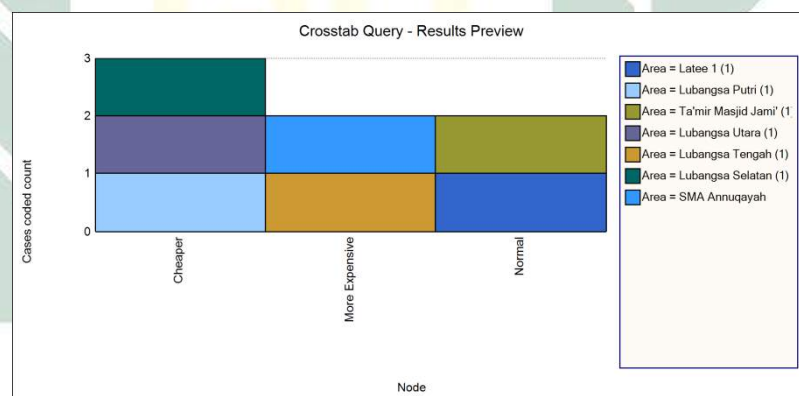
Picture 4.16
Matrix Coding Query of Economy Aspect



Through the matrix coding, it was found that from 7 supervisors of PP. Annuqayah in every area which got solar power electricity, 3 said it was cheaper, 2 informants said it is more expensive, and 2 informants said it is normal. When it analyzed more detail using Crosstab Query, it's known that supervisor who said it is cheaper is supervisor from Lubangsa Selatan, Lubangsa Putri, and Lubangsa Utara where Lubangsa Selatan and Lubangsa

Putri is not using Annuqayah Solar Power Plant Fully, they still use state power plant for the electricity in their area. Lubangsa Utara is fully using the Annuqayah Solar Power Plant but also gets additional power 125W for the water pump. The supervisor who said it is more expensive is from SMA Annuqayah and Lubangsa Tengah, these institutions are using Annuqayah Solar Power Plant fully. Ta'mir Masjid Jami' Annuqayah and Latee 1 said it is normal. The results preview of Crosstab Query as picture 4.17 below

Picture 4.17
Crosstab Query of Economy Aspect



The profit and loss margin of Annuqayah Solar Power Plant can be seen in the bills charge from April 2018 till June 2021 as the table 4.5 below.

Table 4.5
The Difference Bills of Annuqayah Solar Power Plant & State
Power Plant

No	Date	Bills Total of PLTS	Bills Total of State Power Plant	Difference	Differen ce %
1	Apr-18	Rp5,116,860	Rp4,689,225	Rp427,635	8.36%
2	May-18	Rp3,912,773	Rp3,969,630	-Rp56,857	-1.45%
3	Jun-18	Rp3,043,194	Rp3,372,120	-Rp328,926	-10.81%
4	Jul-18	Rp1,571,798	Rp1,701,045	-Rp129,247	-8.22%
5	Agt-18	Rp3,624,359	Rp3,749,175	-Rp124,816	-3.44%
6	Sep-18	Rp3,120,810	Rp3,065,085	Rp55,725	1.79%
7	Oct-18	Rp3,551,520	Rp3,408,570	Rp142,950	4.03%
8	Nov-18	Rp3,751,734	Rp3,796,650	-Rp44,916	-1.20%
9	Dec-18	Rp2,985,791	Rp3,220,200	-Rp234,409	-7.85%
10	Jan-19	Rp3,833,687	Rp4,000,590	-Rp166,903	-4.35%
11	Feb-19	Rp3,469,421	Rp4,184,460	-Rp715,039	-20.61%
12	Mar-19	Rp3,537,996	Rp4,037,040	-Rp499,044	-14.11%
13	Apr-19	Rp3,848,754	Rp4,793,040	-Rp944,286	-24.53%
14	May-19	Rp3,803,552	Rp5,380,830	-Rp1,577,278	-41.47%
15	Jun-19	Rp2,443,875	Rp6,123,600	-Rp3,679,725	-150.57%
16	Jul-19				
17	Agt-19	Rp3,740,636	Rp4,315,815	-Rp575,179	-15.38%
18	Sep-19	Rp3,172,407	Rp3,777,165	-Rp604,758	-19.06%
19	Oct-19	Rp3,920,711	Rp4,363,065	-Rp442,354	-11.28%

From 39 month of using, the surplus bills happen 11 times only. The latest three years it is minus for about 8.14 %, when it analyzed more, there are some aspects that need to fix out; 1) in the practice, the difference in the export-import (exim) recording of the Annuqayah solar power plant and the state power plant, where the difference in the calculation is up to about 40 kWh. This has happened since 2018, at that time the manager of the Annuqayah Solar Power Plant had complained about this to state power plant Sumenep. As for the response given, because this is the first time in Sumenep and even in East Java there is a solar power plant using an on-grid system, state power plant Sumenep is also still learning and exploring, finally as a middle way it was agreed by both the Annuqayah Solar Power Plant and the state power plant will record the export-import value, but in fact state power plant Sumenep staff has never monitored the results of the number of kWh. Export-import every month and the recording is still not the same. 2) the on grid system is not suitable in village because the need of electricity is higher at night but the solar power plant on-grid system could produce electricity at noon only, 3) Insufficient maintenance of solar panels; apart from the weather, the amount of production of solar power plants can also be reduced if there is thick dust on the solar panels, besides monitoring all devices and networks also needs to be done.

b. Planet (Environment Aspect)

Renewable energy is the second type of natural capital based on Elkington theory, that is renewable, replaceable, or substitutable natural capital.¹³⁹ Solar power plant is renewable energy and can substitute of fossil fuels through solar panel. The planet reflects the impact of processes, products, or services that have an impact on the environment. It also mostly audit on the management system such as trend in energy usage.

on the environmental aspect, the Annuqayah solar power plant has not had a significant impact, previously based on estimates it would save 40% of electricity bills in Annuqayah, the 40% figure also has environmental value where this is a contribution value of reducing coal mining and pollution when using state power plants, but in reality the 40% figure has not been achieved even though in certain months there are savings even though the figure is still below 15%. In addition, ecological values are also understood not only when we throw away garbage, recycle waste, plant trees, and others, but also more broadly all activities that have a good impact on the environment are included in ecological activities. The use of solar power plant is part of ecological activities that are practiced by PP. Annuqayah should be

¹³⁹ John Elkington, *Cannibals With Forks: The Triple Bottom Line of 21st Century Business* (United Kingdom: Capstone Publishing Limited, 1997). 69.

product safety, training and education programs, sponsorship, charitable gifts of money and time, and hiring of disadvantaged groups. Human capital is a component of social capital in the form of public health, skills, and education in the social sense. As a result, the social aspect that PP. Annuqayah has felt since employing a solar power plant is mostly in education. Santri and supervisor learn about renewable energy and become more environmentally conscious. This is in accordance with IBEKA and Paiton Energy's goals for the solar power plant, unless for electric facility, it is also used as a learning medium in PP. Annuqayah. These sights will imply the real condition inside PP. Annuqayah. From the outside it will be identified by local community respond and point of view of Annuqayah solar power plant.

1) The understanding of solar power plant

The education that is gotten by santri PP. Annuqayah about renewable energy through solar power plant is analyzed by word frequency and crosstab query as below.

areas. 2 informants; 1 santri and 1 supervisor provide the alternative energy indicator. 3 informants; 2 santri and 1 supervisor, recount the indicator of conversion solar energy. The indicator for converting solar energy to electric energy is stated by 1 santri. The sun's energy indicators are reported by 9 informants, 5 santri, and 4 supervisors. The last paragraph that it is renewable energy is stated by 1 santri.

The present of solar power plant in Annuqayah is giving education to santri and supervisor of PP. Annuqayah through the result analysis from NVIVO 12 Plus above. Solar power plant is alternative energy and renewable energy from the sun that is captured by solar panels and converted to electric energy. As a result, the thickest term is sunlight, which is largely narrated by informant.

2) Environmental awareness

The Environmental awareness that is gotten by santri and supervisor of PP. Annuqayah about renewable energy through solar power plant is analyzed by word frequency and crosstab query as below.

In the environmental economy is stated only by 1 supervisor. The environmentally friendly is narrated by 7 informants; 4 santri and 3 supervisors. In case of natural resources, 2 informants who said so, those are 1 supervisor and 1 santri. Protecting environment is stated by 3 informants; 2 santri and 1 supervisor. In term of realizing as alternative energy is stated by 1 santri only.

Reducing pollution indicator of environmental awareness is narrated by 2 informants; 1 santri and 1 supervisor. In addition, the indicator of safe coal mining is stated by 4 santri. Using electricity as needed is the last indicator and narrated by 4 supervisors.

Thus, the environmental awareness that gotten by santri and supervisor since using Annuqayah solar plant is the practice of renewable energy is part of environmental economy. This is more environmentally friendly because using natural resources and safe the coal mining, so it could protect environment. Using solar power plant makes supervisor realizing that it is alternative energy. It also gives awareness to use electricity as needed.

3) Local Community Respond through Annuqayah Solar Power Plant

As a result, the Annuqayah solar power plant is considered a good movement. It is beneficial because it is environmentally friendly and provides education and examples of solar power plants to the local community; also, it is in accordance with PP. Annuqayah's value of safeguarding the environment, and it could save money and energy. Furthermore, the local community considers providing solar power plant socialization to the local community in order to gain a better understanding of solar power plants.

[illegible]

The main purpose of Islamic law (*maqāsid shariah*) itself is to maintain the benefit of His servants, both in this world and in the hereafter. Benefit or well-being is also a form of preserving one's faith (*hifz ad-din*). Islam is present as a religion that teaches ethics, compassion, and responsibility both towards Allah (*hablun min Allah*), towards humans (*hablun min al-nas*), and also towards the universe (*hablun min al-'alam*) so that the life on earth will be prosperous.

In addition, the presence of solar power plant Annuqayah is giving education access to learn about renewable energy, especially solar power plants. PP. Annuqayah as an educational institution places the Annuqayah solar power plant as an access to learning media (open laboratory) for Annuqayah students in particular and the entire community from various circles in general to learn about renewable energy in the form of an on-grid solar power plant system.

[illegible]

various scientific developments, by making solar power the annuqayah plant as a learning medium for santri and the community is a real application carried out by PP. Annuqayah will preserve one's mind.

c. Green Economy as Preserving One Soul (*hifdz an-nafs*).

The main mission in the application of renewable energy is to maintain the balance of nature and reduce the consumption of non-renewable energy which causes more environmental damage. Using energy efficiently and sufficiency is a new model of economic growth without rising resource consumption. Using electrical energy from solar power is a real effort made by PP. Annuqayah to reduce the consumption of natural resources that are non-renewable and not breaching the ecological limit as stated in the principle of planetary boundaries. This attitude is the action of *hablum minal alam* that should be applied by Muslims. Islam itself explicitly calls for the preservation of nature and the prosperity of the earth.

Protecting the earth is part of protecting the human soul (*hifdz an-nafs*). Keeping the soul means maintaining safety, health, and also human life. Earth is a human environment which if damaged will automatically threaten human life, as what Allah said in the Qur'an.

Islamic boarding schools that have a large electricity demand (Lubangsa Putri, Lubangsa Utara Putra, Lubangsa Selatan, Lubangsa Tengah, Latee 1 and Latee 2). The selection of the area was also based on technical considerations such as whether or not to add electricity poles and the direction of cable lines.¹⁴¹

In determining the electricity tariff for solar power plants, the chairman of the foundation and the head of the pesantren agreed to set a tariff of Rp. 700 per kWh, cheaper than the rate charged by the state power plant, which is Rp. 900 per kWh with the same type, namely the S2 with 3300 power to really save more.¹⁴² In February 2019 the government implemented a new policy for solar power plant customers, namely only 65% of energy exports from solar power plants to state power plants would be purchased. Thus, March 2020 the manager of the Annuqayah solar power plant took a policy in increasing the electricity tariff for the Annuqayah solar power plant per kWh by Rp. 900 to overcome payments to state power plants which are often in deficit.¹⁴³

In a green economy, justice is a principle that must be applied, which is carried out in an inclusive and non-discriminatory manner; it shares decision-making, benefits, and cost fairly. Seeing that the application of the Annuqayah solar power plant was carried out in in-depth deliberation with qualified and directly

¹⁴¹ Hasan. Guluk-Guluk, 8th June 2021

142 Hasan.

¹⁴³ Mundzir. Guluk-Guluk, 27th May 2021.

It also enters the realm of preserving one wealth (*hifdzul maal*), which is to protect property here as well by using it appropriately and sparingly, in PP. Annuqayah santri are taught to save wealth, including in the use of electricity, this can be seen from the regulations and appeals applied by the pesantren such as; public street lights automatically turn on at 17.40 o'clock in the afternoon and automatically turn off at 05.00 o'clock in the morning, santri are encouraged to turn off the lights when sleeping, there is a special schedule for turning on the water pump, and so on. Besides, the application of solar power plant in PP. Annuqayah is an economic development; if it continues to be developed it will deliver the PP. Annuqayah towards energy self-sufficiency that can be felt by all groups, especially santri, kiai families, and the community around PP. Annuqayah.

The solar power plant is built on the basis of kinship, friendship, and good relations created between PP. Annuqayah has been with IBEKA and Paiton Energy since the 1980s and is expected to continue in the future, the Annuqayah solar power

[illegible]

نَسَاءُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيُذِيقَهُمْ بَعْضَ الَّذِي
عَمَلُوا يَرْجِعُونَ

“Corruption has appeared throughout the land and sea by [the result of] what the hands of people have earned so He may let the part of [the consequence of] what they have done that perhaps will return [to righteousness]”. (QS. ar-Rum: 41)

The verse above explains that the damage that occurs is the result of human actions that are not able to maintain the balance of natural components, which then becomes the dominant factor in causing environmental change and energy crisis for humans. Humans should be aware that God's blessings are so great for them, and they should be grateful to Him for His blessings.

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Abdullah ibn Amr reported: The Messenger of Allah, peace and blessings be upon him, passed by Sa'd while he was performing ablution. The Prophet said, "What is this excess?" Sa'd said, "Is there excess with water in ablution?" The Prophet said, "Yes, even if you were on the banks of a flowing river."

1. As a differentiator from other economic systems, Islamic economics should be an economic system that in practice pays attention to environmental impacts.
2. Prioritizing sustainable development (renewable energy, circular economy, product life cycle and so on)
3. reducing consumption of natural resources, especially non-renewable energy
4. does not damage the earth

CHAPTER V

CONCLUSION

A. Conclusion

1. The decision-making of implementing green economy through renewable energy in pondok pesantren Annuqayah that was obtained from IBEKA and Paiton Energy's CSR project has been based on Simon's three rational decision-making theories: (1) intelligence, (2) design, and (3) choice. To begin, kiai Annuqayah identified opportunities for maintaining a positive relationship between PP. Annuqayah with IBEKA and Paiton Energy while meeting PP. Annuqayah's electricity needs and serving as a learning medium for santri, then analyzed the possible course of Annuqayah solar power, including the location and system of the solar plant. Last, PP. Annuqayah accepted the CSR project to build a solar power plant located in SMA Annuqayah and use the solar power plant's on-grid system.

2. The triple bottom line (profit, planet, people or economy, environment, and social) roles of Annuqayh solar power plant.
- From the economic aspect, Annuqayah Solar Power Plants have not had a significant impact for approximately three years of use. Initially, the use of solar power plants was estimated to be able to save 40% of PP. Annuqayah electricity bills, but after analyzing the electricity bill payments for the last three years, it is still far from the initial estimate, even minus 8.14%.

- From the economic aspect, Annuqayah Solar Power Plants have not had a significant impact for approximately three years of use. Initially, the use of solar power plants was estimated to be able to save 40% of PP. Annuqayah electricity bills, but after analyzing the electricity bill payments for the last three years, it is still far from the initial estimate, even minus 8.14%.

3. The green economy through renewable energy in Pondok Pesantren Annuqayah is the application of Islamic economy in accordance with the maqashid sharia concept. The benefit of the Annuqayah solar power plant is that it fulfills the need for electricity. Benefit or well-being is a form of preserving one's faith (*hifz ad-din*). It also educates people about renewable energy, and education is one indication of maintaining minds (*hifz al-aql*). Using renewable energy is one of the ways to protect the earth. Protecting the earth is part of protecting the human soul (*hifdz an-nafs*). The realm of preserving wealth (*hifdz al*

1. For Kiai Annugayah

[illegible]

To support the use of renewable energy, especially solar power plants, the community can take back 100% of the electrical energy deposited in PT. PLN (Persero). So 100% of the electricity produced by consumers through solar panels, 100 percent can also be entrusted to PLN, and 100% can be taken by consumers. Unlike today, where consumers can only take 65 percent of the electrical energy deposited at PLN. 65% so it tends to have less economic impact on solar power plant users.

3. For Chief of Transaction Energy PT. PLN Sumenep

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