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Analysis of Process of the Economics Development on the Degradation of Environment in Indonesia

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Abstract:

It has been proven that national economic growth, which originally expected to improve of the people welfare, to balance the gap of income, to alleviate the poverty and to keep the environmental stability could not accomplish the goal of economic development. The objectives of this research are: (1) to analyze the impact of Gross Domestic Product Per capita on Energy consumption (2) to analyze the impact of CO emission which formed by the economic activities as consequence of national economic growth on the capacity of industry sector, household and commercial sector, transport sector and other sector. To prove those main objectives, the path analysis is used in this research. The data used in this research of the year 1980-2012, which published by Statistical Centre Agency (BPS). In conclusion, economic growth had CO emission and its implication on environment. Furthermore, the policies to compensate the recovery of environmental degradation are needed through some instruments of policies, such as command-and-control, and based market-policies in Indonesia.

Key words: Gross Domestic Product Per capita, Energy Consumption of Industry, Household & Commercial, Transportation and other sector, CO Emission

Classification JEL: Q5, O1, Q4

INTRODUCTION

The development process should be increased certainly will need the capital in the development process itself, which one is the necessary for energy, especially in Indonesia. No doubt that the energy consumption also increased rapidly enough cause the development of the construction from Industry sector, Transportation, Household & Commercial and other sector. These matter cause the demand for energy in every year always increased.

With the high increasingly of the demand for energy, the environment will keep on the depressed in the future. Need of final energy in the future will be domination by the demand from the industry sector (47,3 percent) followed by transportation (29,8 percent) and household (14,1 percent), as the shunted by SLHI in 2012. The consumption of energy produced from various sector will certainly have an impact on the environment, one of it is CO emission which the largest emission in the formation of Greenhouse Gas.

As the climate change had become a national agenda, will need the big support of government and sectors to achieve the target of emission reduction. The various development sectors will play an important role because there are activities that produce the emission. Correspondingly, the government of Indonesia can produce a policy or plan of national action to support the process of reducing this emission.

It can be said when the economics development not pay attention to the durability and environmental function, could be certain the degradation of environmental in Indonesia will continue to increased. Development which very oriented in the pursue of growth often ignored the aspect of environmental management.

Development, which purposes to the welfare of society, in the end it, becomes a destroyer of life support system (in this matter is environment). So that economics development was

done to create the welfare in the end get more less meaning. Whereas, truly development must provide the welfare effect not only from the economics growth but also in terms of other which not less important there is the quality of environment will affect the level of quality of a person's life.

So, in summary it can be said that the economics development, which solely intended to get profit without, take note of persistence of nature and environment will bring the negative impact not only for nature but also for society. One of negative impacts are caused depletion of natural resources, air pollution because industrial pollution and infrastructure development which identical with the destruction of nature. However, it can be prevented by applying the implementation program of economics development with environment insight (Soemiarno, 2008).

From the explanation above, the researcher wants to see how the effect of development in Indonesia, which evaluated with an indicator of GDP by the energy consumption from the various sector of development on the environmental degradation observed of CO emission. It can be assessed which sector most responsible in the produce of CO emission. So can be assessed how far the effect of development process in Indonesia affecting the environmental degradation.

Hopefully with this research can give contribution to the government and relevant parties so that the process of development in the future can be better and more sustainable as the expected.

THEORETICAL FRAMEWORK

With the higher of the demand for energy, the environment will continue to be depressed in the future. Need of final energy in the future will be domination by the demand from the industry sector (47,3 percent) followed by transportation (29,8 percent) and household (14,1 percent), as the shunted by SLHI in 2012.

The consumption of energy produced from various sector will certainly have an impact on the environment, one of it is CO emission as a output of the energy consumption. Most of the theory of economics especially the growth of macroeconomics had ignored the environmental problems. Normally in the theory of economics, environmental issues are considered not problematical. Implicitly often assumption that the consequence of environmental problem is a minor problem or will be settle by itself (Arrow et.al, 1995). Some experts such as Bhagwati (1993) exactly had opinioned that the growth as a pre condition for environmental improvement. For example Beckerman (1992) argued, a strong correlation between income and protection measure of environmental show a positive relationship. Even more in developing countries, the economics growth will strengthen the improvement ability on the environment (Panayotou, 1993). On the other hand there are also opinions explained to the contrary as Georgegescu-Roegen (1997) said that economics growth is not aligned with a sustainable environment. Daly (1997) argued that economic growth would motivate the world economy toward the limit or motivate capacity of environment more limited. In economics term "development" is usually defined as the capacity from a national economy, which the first condition more or less static in a long-range time, to attempt the produce and maintain the annual increase in the gross national product (Todaro, 2009).

Economy that derive for the most of its revenues from natural resources can't preserve the growth by substitute the accumulation of physical capital to the natural capitals which the worse (Thomas 2001). The degradation of environment that happened incline to be most torment for the poor, because they often rely on the natural resources to get their income, and little chance to be able for the replace of assets are used. Especially in the long-term, an approach that paid attention to the quality of the environment and the efficient of use of natural resources will give contribution on the accumulation,

investment, economics growth also human welfare (Munasinghe, 2000). All of these problems beginning from the economics activities regarded as essential thing for the growth, and control of these activities had caused many difficulties. Most developing countries rely on fossil fuel for economic production and didn't had a tendency for switch to the other fuel which cleaner although more expensive. Although it was realized that the change to other fuel which cleaner can cause the health be better and economic goals are better anyway. The consequence is occurrence of a natural tension between these two purposes, and many countries choose for the growth greater than better health (Munasinghe, 2000).

Furthermore, Grossman and Krueger (1995) mentioned that economics growth in the early stage bring to the degradation phase of environmental quality. Furthermore, the increase in revenue would lead to the increase phase of environmental quality. At the time of economic development had successful to increased the income of society, so the society will have ability to improve and control the environmental quality. Beside the economic capability, which possess by the society also will be used to carry out development in the field of education and health. The success of development in the field of education and health will be able to increase the public awareness for the importance of a healthy environment quality. In the society who have environmental consciousness will appear the need for a good environment, so in its turn the society will be want to sacrifice for the consumption of other goods for the sake of environmental protection. When it is reached, so the economic growth that higher will be followed by the index of environmental quality also high.

RESULT

The model had fulfill the requirements of stripe analysis includes the normal distribution of data and free from the problems of normality, multicollinearity, and linearity.

In partially GDP of Industry Sector has positive impact and significant on the Energy Consumption of Industrial Sector. The magnitude of the partial effect and direct in GDP of Industrial Sector on the Energy Consumption of Industrial Sector is 0,0818 or rounded to 82%. Thus, the level of Energy Consumption of Industrial Sector influenced by GDP of Industrial Sector as big as 82%, while the remaining 18% described by other factor on the outside of the model.

Furthermore, the effect of empirical causal between variable (X) GDP of Industrial Sector (Y) Energy Consumption of Industrial Sector can be described by equation of sub structural 1:

Y = 0,818 X + e (Equation of Sub structural 1)

When seen the GDP of industrial sector is large enough to give contribution on the energy consumption. It can be seen from the existing industry in Indonesia which many enough use of energy consumption. But the energy consumption of this sector precisely not giving effect at the industrial GDP. This matter because the energy consumption in Indonesia still based on consumption not based on production.

Furthermore, in partially GDP of Household & Commercial Sector has positive effect and significant on the Energy Consumption of Household & Commercial Sector. The magnitude of the partial effect and direct in GDP of Household & Commercial Sector is 0,796 or rounded to 80%. Thus, the level of Energy Consumption of Household & Commercial Sector as big as 80%, while the remaining 20% described by other factor on the outside of the model.

Furthermore, as the result of sub structural 1, the effect of empirical causal between variable (X) GDP of Household & Commercial Sector and (Y). This Energy Consumption of Household & Commercial Sectors also can be described by equation of sub structural 2 :

Y = 0,796X + e (Equation of Sub structural 2)

Although the effect of GDP on the energy consumption at the household sector relative nearly equal with the industrial sector, this matter indicate that income sufficient affect the usage of society consumption and commercial.

Next in a GDP of Transportation Sector has positive effect on the Energy Consumption of Transportation Sector. But for this sector is not very large if compared with previously two sectors there are Industrial Sector and Household & Commercial Sector. The magnitude of the partial effect and direct in GDP of Transportation Sector on the Energy Consumption of Transportation Sector is 0,505 or rounded to 50%. Thus, the level of Energy Consumption of Transportation Sector influenced by GDP of Transportation Sector only amount of 50%, while the remaining 50% described by other factor on the outside of the model.

Furthermore, the effect of empirical causal between variable (X) GDP of Transportation Sector and (Y) Energy Consumption of Transportation Sector can be described by equation of sub structural 3:

Y = 0,505X + e (Equation of Sub structural 3)

For the transportation sector, GDP didn't provide a substantial contribution to the energy consumption. Because of transportation in Indonesia is many, because of the population is also much, so without affected by income the society will continue to use energy in every day for the transportation in their activities.

In partially GDP of Other Sector also has positive effect on the Energy Consumption in Others Sector. But for this sector is not greater than the previous sectors there are Industrial Sector, Household & Commercial Sector and Transportation Sector. The magnitude of the partial effect and

direct in GDP of Others Sector on the Energy Consumption in Others Sector is 0,180 or rounded to 18%. Thus, the level of Energy Consumption in Others Sector affected by GDP of Others Sector as big as 18%, while the remaining 82% described by other factor on the outside of the model.

Furthermore, the effect of empirical causal between variable (X) GDP of Others Sector and (Y) Energy Consumption of Others Sector can be described by equation of sub structural 4:

Y = 0,180X + e (Equation of Sub structural 4)

For the effect of GDP on the energy consumption in others sector that do not belong to the industrial sector, household & commercial also transportation their value belong to very small. Because in the process of development such as agriculture or forestry doesn't require a lot of energy consumption or even without any energy consumption. So it is natural if ultimately the GDP in this sector doesn't provide significant effect on the energy consumption.

Simultaneously, the effect of X and Y on the Z as big as 0,824 (rounded to 82%). The rest of 18% influenced by the other factor on the outside of the model. This simultaneous model is significant. With pay attention to the probability of F amounted to 46,908 at the value of sig 0,000 0,01. After the simultaneous model had proved the significant, so done to the stripe resumption of partial effect. From two variables are placed as predictor, the energy consumption has value of sig 0,05, while GDP of industrial sector has value = 0,05. So it can be said that the partial of all predictor affected on the variables Z.

In directly GDP of industrial sector has positive effect and significant on the CO Emission. The magnitude of the direct effect in GDP of industrial sector on the CO Emission as big as 0,329 or rounded to 33%. Its mean, the level of CO Emission just can affected by GDP of Industrial Sector as big as

33%, while the remaining 67% described by other factor on the outside of the model.

In directly the energy consumption of industrial sector has positive effect and significant on the CO Emission. The magnitude of the partial effect and direct in Energy Consumption of Industrial Sector on the CO Emission is 0,619 or rounded to 62%. Thus, the level of CO Emission affected by Energy Consumption of Industrial Sector as big as 62%, while the remaining 38% described by other factor on the outside of the model.

So it can be concluded from this result that directly the energy consumption of industrial sector had affect the amount of CO Emission as big as 62%. Furthermore, through of the energy consumption of industrial sector, GDP of industrial sector give effect indirectly on the CO Emission as big as 33%. The effect formed from the result of substructural 5 can be described by equation of sub structural 5:

Z = 0,619Y + e (Equation of Sub structural 5)

The value of effect above give the meaning that consumption of industrial sector give the substantially contribution in produce of CO Emission. Its mean, industry in Indonesia can be said not yet categorized the environmental friendly industry. Many factories or companies, which engaged in the production, still use energy that can produce the high level of CO. So this matter becomes homework for government and entrepreneur and all of society surely to looking for the strategic step in reducing the risk of disruption on the environment. For example, by making the strict rule or regulation so that companies use the environmental friendly energy or spent the cost of externality for the improvement of environment in order to stay awake. But GDP indirectly though had effect on CO but not significant. This factor can be caused the revenue of industrial sector didn't give significant effect on CO Emission,

so that need for directive to build the good industry paradigm for the environment by spent the cost of externality for the improvement. So GDP of Industrial sector hoped could reduce the capacity of CO Emission. Nevertheless, some of factories or manufacturing companies had started to run the decrees which directed by government that leading to the sustainable development process.

Simultaneously, the effect of X and Y on the Z amounted to 0,900 or 90%. The remaining 10% influenced by other factor in the outside of the model. This simultaneous model is significant. With take note of probability of F amounted to 90,410 at the 0,000 sig 0,01. After simultaneous model proved significant, then do the forwarding stripe of partial effect. From two variables which put as predictor, the energy consumption and GDP of Household & Commercial sector had sig 0,05. So it can be said that partially all of predictor had effect on the Z variable.

In directly GDP of Household & Commercial sector had positive and significant effect on CO Emission. The magnitude of the direct influence GDP of Household and Commercial sector to CO is 0,539 or rounded to 54%. Its mean, the high and low of CO Emission affected by GDP of industrial sector amounted to 54% while the remaining 46% influenced by other factor on the outside of the model.

In directly the energy consumption of Household & Commercial sector had positive and significant effect on CO Emission. The magnitude of the partial effect and direct in Energy Consumption of Industrial Sector on the CO Emission is 0,462 or rounded to 46%. Its mean, the level of CO Emission affected by Energy Consumption of Household & Commercial sector as big as 46%, while the remaining 54% described by other factor on the outside of the model.

So it can be concluded from this result that directly the energy consumption of Household & Commercial sector affect the amount of CO Emission by 54%. Furthermore, through the

energy consumption of Household & Commercial sector, GDP of Household & Commercial sector gives indirectly effect on CO Emission amounted to 46%.

The effect formed from the result of substructural 6 can be described by equation of sub structural 6:

Z = 0,539X + 0,462Y (Equation of Sub structural 6)

If we see, the energy consumption of Household & Commercial sector had smaller effect on the CO Emission compared to the energy consumption of industrial sector. This proven that Household & Commercial sector have capacity which not more to use the energy in the development process. With many the small and medium businesses, which not categorized in industry ultimately make the Household & Commercial sector has contribution not too much in the use of energy. But CO Emission effected by 46% from GDP of the sector. Because through the process of production of Household and Commercial sector hadn't been able to accommodate the environmental damage that is CO Emission produced from the activities of production in the sector. So necessary to build awareness for society in protecting the environment to not more reduced. Because the environment was damaged cause of human activity eventually will have an impact on the human self. The consequence for using of energy which extravagant and unfriendly in environment plus there isn't an accommodation of externality cost on the environment, will caused the environment more reduced as there is Greenhouse Effect which will cause this earth getting hotter, the condition of climate unstable even the extreme temperature and weather. With the apprehensive about environment condition certainly whom will feel the effect was human too. Therefore, the awareness of environmental health is an important matter that should not be forgotten. Because of all the development that has been achieved will not be worth anything if ultimately the

human unhealthy, the environment was damaged and prosperity was only apparent.

Simultaneously, the effect of X and Y on the Z amounted to 0,876 or 87%. The remaining 13% influenced by other factor in the outside of the model. This simultaneous model is significant. With take note of probability of F amounted to 70,528 at the sig 0,000 0,01. After simultaneous model proved significant, then do the forwarding stripe of partial effect. From two variables, which put as predictor, the energy consumption and GDP of Transportation sector had sig 0,05. So it can be said that partially all of predictor had effect on the Z variable.

In directly GDP of Transportation sector had positive and significant effect on CO Emission. The magnitude of the direct influence GDP of Transportation sector to CO Emission is 0,075 or rounded to 7,5%. Its mean, the high and low of CO Emission affected by GDP of Transportation sector amounted to 7,5% while the remaining 92,5% influenced by other factor on the outside of the model.

In directly the energy consumption of Transportation sector had positive and significant effect on CO Emission. The magnitude of the partial effect and direct in Energy Consumption of Transportation Sector on the CO Emission is 0,896 or rounded to 90%. Its mean, the level of CO Emission affected by Energy Consumption of Transportation sector as big as 90%, while the remaining 10% described by other factor on the outside of the model.

So it can be concluded from this result that directly the energy consumption of Transportation sector affect the amount of CO Emission by 90%. Furthermore, through the energy consumption of Industrial sector, GDP of Industrial sector give indirectly effect on CO Emission amounted to 7,5%.

The effect formed from the result of substructural 7 can be described by equation of sub structural 7, that is:

Z = 0,075X + 0,896Y + e (Equation of Sub structural 7)

It is very interesting matter if we see the big of effect of contribution in transportation sector on CO Emission, ie by 90% where the value is the highest contribution of the two sectors that have been researched previously. These results were highly correlated with the fact that amount of user of transportation in Indonesia was huge. This could happen because of the consumptive nature for the Indonesian people in the using of transportation. Besides the total of inhabitant who affect the level of consumptive of society on the using of transportation, hedonist style also be trigger on the increased for using the transportation. With the highly total of user of transportation, certainly make the energy consumption used for transportation also increased. As a result, CO Emission that resulted from energy consumption for transportation also increased.

The situation will worsen with the enactment of MEA (ASEAN Economic Community) although the free market in 2015. Because this matter will cause the total of transportation entering and ready for sale to Indonesia more increased. Indonesia which only capable of being a consumer sure would become an increasingly consumptive society. Buying means of transportation is no longer because of the necessity to support the activities of life, but because of the flood of product that make society become a consumptive.

While the GDP of transportation sector is not too significant in effecting the CO Emission. This is because the income of society itself doesn't give a meaningful contribution. Its mean, even though the income of society were low, but consumption of energy settled high than transportation.

Simultaneously, the effect of X and Y on the Z amounted to 0,539 or 54%. The remaining 46% influenced by other factor in the outside of the model. This simultaneous model is significant. With take note of probability of F amounted to 11,704 at the sig 0,000 0,01. After simultaneous model proved significant, then do the forwarding stripe of partial effect. From

two variables which put as predictor, the energy consumption and GDP of Others sector had sig 0,05. So it can be said that partially all of predictor had effect on the Z variable.

In directly GDP of Others sector had positive effect on CO Emission. The magnitude of the direct influence GDP of Others sector to CO Emission is 0,652 or rounded to 65%. Its mean, the high and low of CO Emission affected by GDP of Others sector amounted to 65% while the remaining 35% influenced by other factor on the outside of the model.

In directly the energy consumption of Others sector had positive effect although less significant on CO Emission. The magnitude of the partial effect and direct in Energy Consumption of Others Sector on the CO Emission is 0,239 or rounded to 24%. Its mean, the level of CO Emission affected by Energy Consumption of Others sector as big as 24%, while the remaining 76% described by other factor on the outside of the model.

So it can be concluded from this result that directly the energy consumption of Others sector affect the amount of CO Emission by 65%. Furthermore, through the energy consumption of Others sector, GDP of Others sector give indirectly effect on CO Emission amounted to 24%.

The effect formed from the result of substructural 8 can be described by equation of sub structural 8, that is:

Z = 0,652X + 0,239Y + (Equation of Sub structural 8)

For this last sector, the magnitude of the effect is the smallest of all sectors. This is because the sector are categorized in others sector such as mining; agriculture didn't use a lot of energy in its production activities. So naturally the effect of energy consumption for this sector is belong to very low compare to the previous sectors.

DISCUSSION

From the analysis of the relationship of GDP to Energy Consumption in each sector, it appears that Energy Consumption at Industrial sector has the strongest influence in the amount of 82%. Followed the Energy Consumption at Household & Commercial sector only 80%, next the transportation sector 50% and the Others sector 18%.

The amount of the effect from GDP of Industrial sector on energy consumption shown that what produced from GDP of industrial sector will affect the amount of total of energy consumption for the industrial sector. But not the other way, energy consumption of Industrial sector didn't affect the GDP of industrial sector.

The Economic growth will continue to grow despite happen the energy deficit. This matter because the relation of economic of Indonesia and the energy consumption is uni-directional. Such relationship also occurs in almost all of developing countries.

Unlike the advanced countries, the level of energy consumption per capita will affect their economic growth, or known as bidirectional relationship. This matters happen because the highest economic base is the production activities undertaken by the industry. All types of industries need a lot of energy. Which distinguish only the level of efficiency ratio of energy consumption of the output produced. While the fulfillment of consumption activities already filled good. Basis of consumption become the second priority after the production activities completed such as this time going on in Japan after the Fukushima disaster.

Thus, even though the economic growth in Indonesia now positive, Indonesia remains become a country in the developing class for only focused on the fulfillment of energy at the consumption activity. This condition is termed with middle-income trap.

Therefore, mindset of Indonesia's economic growth must be changed. The main focus is on the production bases that provide high added value though the energy consumption high, not only on the basis of consumption. While the fulfillment of the consumption sector could use a variety of scenario.

For the Household & Commercial Sector, GDP had affected its energy consumption in the amount of 80%. It means, that income of society affect the energy consumption for necessity of household and commercial.

Furthermore, for GDP of Transportation sector is no bigger its influence on the sector of energy consumption than the industrial sector. This is because the income of society itself does not give a meaningful contribution in influencing society to consume the energy. Its mean, even though the income of society are low, but energy consumption remains high from the transportation.

In the Other sector, GDP had affected its energy consumption in the amount of 18%. Income from others sector didn't too affect the energy consumption in this sector. Because this sector is estimated unnecessary to use a lot of energy such as agriculture and fishery.

Then, when heed the proportion of the contribution of pollution, which sector is the highest contribution of air pollution, show up for the sector of producing the highest carbon occured in the Transportation sector had a very strong relationship, namely 90%, followed by Industrial sector 62% and the sector of Household and Commercial in the amount of 46% and the latter Others sector were only 24%.

The relationship of energy consumption of others sector for CO emissions is the smallest value of all sector, namely 24%. Although the value generated from this sector relatively smaller effect than others sector, but settled the contribution donated of this sector should not be ignored. Therefore, government also need to monitoring the process of development of this sector, so didn't to make a large effect on CO Emission.

While the relationship of energy consumption of Household & Commercial sector on CO Emission by 46%. This matter can be seen from the use of fuel such as kerosene and gas by society. Although less significant than Transportation sector and Industrial, however, this matter should be of concern in particular for the government. Because lifestyle of society are increasingly consumptive, sure will not close the possibility of energy consumption that produced from this sector will continue to increase. Because of the fuel used also give effect on the air pollution in the form of CO which not good for the environment.

Although GDP of Industrial sector is the largest affect for energy consumption, but not mean the energy consumption of Industrial sector is the greatest influence in producing CO Emission. Its mean, an increasing of energy consumption of Industrial sector affected by the increase in the GDP of the sector, but the increase of GDP in the Industrial Sector is not influenced by the Energy Consumption of Industrial Sector. This matter could be caused the industry in Indonesia did not use a lot of energy. Such as the textile industry, wood industry or any other industry that didn't need energy in a large capacity. Moreover, this moment for small and medium industry began more involved in the society.

When we see, the energy consumption of Transportation sector is the most dominant sector in giving effect to the CO Emission, this matter because the total of user of transportation in Indonesia is huge. This could happen because of the nature of consumptive for Indonesian people in the using of transportation. Besides the total of people who affect the level of consumptive's people on the using of transportation, hedonist style also become trigger of the increased for the using of transportation. With the high total of transportation user, of course, make the energy consumption used for transportation also increased. As a result, the CO Emission, which resulted from energy consumption for transportation, also increased.

The situation will worsen with the enactment of MEA (ASEAN Economic Community) although the free market in 2015. Because this matter will cause the total of transportation entering and ready for sale to Indonesia more increased. Indonesia, which only capable of being a consumer sure would become an increasingly consumptive society. Buying means of transportation is no longer because of the necessity to support the activities of life, but because of the flood of product that make society become a consumptive.

Transportation in Indonesia is growing rapidly. With the increasing total of motorcyclist who use fuel in the form of refined fuel oil, resulting in air pollution produced is very high. In addition to acid rain that arising dispersed in the air can damage the plant and the soil, so the result can be very good even less good when consumed by human. Although GDP of Transportation Sector doesn't have a stronger effect than Industrial Sector on the Energy Consumption, but could certainly the use of the largest Energy Consumption exist in this sector. Until the government and also the various parties need to look for alternative solution in order to reducing CO Emission. Many steps can be taken, such as creating more public transportation for the people with facility that not inferior with personal vehicle. So when society feels more comfortable in using the public transportation, of course the society will prefer to use public transportation. Others policy could determine the high tax for personal vehicle, so the society making the tax rate as a consideration in buying a personal vehicle. And the solution is the government also expected to look for the energy of alternative environmental friendly, so the fuel used for vehicle safe for the environment and human.

In accordance with the opinion of Wilson and Tyrchniewicz (1995), that the issues which often and should be considered in continuity development are:

1. Damage of environment is important not only because its affect on the economic, but also cause productivity to be low, for example the quality of land is lower
2. Give priority of attention on the environment, if the policy direction for the continuity economic development
3. Attention is needed to guarantee the continuity economic growth
4. It must be realized that with the increasing of continuous revenue as one of the development goal is a potential trade-offs between the increasing of Revenue with environmental damage

Note that need to be underlined is that the quality of environment feeling more significant than just enough to pursuing the economic growth. Therefore, the answer on environment problem is we must understand that need to over cost for the accommodate on the environmental quality preserved in welling, with hope of continuity development can be realized. For the expectation of more cost that must be spent, then the government need to increase the purchasing power of society.

CONCLUSION

1. GDP of industrial sector is large enough to give contribution on the energy consumption that is 82%. It can be seen from the existing industry in Indonesia many enough use to the energy consumption. But the energy consumption of this sector precisely doesn't give effect on the GDP of industrial. This matters because the energy consumption in Indonesia still based on consumption not based on production.
2. The Effect of GDP on energy consumption of household sector relatively almost same with industrial sector

namely 80%, it indicated that sufficient income affect the usage of society consumption although commercial.

3. For the transportation sector, GDP doesn't provide a large enough contribution on the energy consumption is only 50%. Because of transportation in Indonesia belong to many and the factor of population also many, so without affected any income the society will continue to use the energy in everyday for transportation in a variety of activities.
4. The Effect of GDP to the energy consumption in others sector which not belong to the industrial sector, household & commercial and transportation its value belong to very small, only 18%. Because in the process of development such as agriculture or forestry didn't need a lot of energy consumption or even without any energy consumption. So it is natural when ultimately the GDP in this sector didn't provide significant impact on the energy consumption.
5. The relationship of energy consumption of others sector on the CO Emission is the smallest value from all factors, namely 24%. Although the value resulted from this sector its effect relatively smaller than other sector, but permanently the donation contribution of this sector should not be ignored.
6. The relationship of energy consumption of Household & Commercial sector on the CO Emission is 64%. This matter can be seen from the usage of fuel such as kerosene and gas by society. Lifestyle of society which increasing to consumptive surely would not close the possibility for energy consumption that produced from this sector will increase. Because of the fuel used also give effect on the air pollution in the form of CO which not good for the environment.
7. The effect value of energy consumption of industrial sector is large enough, namely 90%. It gives meaning

that consumption of the industrial sector provide a substantial contribution in produce CO Emission. Its mean, the industry in Indonesia can be said not yet categorized of environmental friendly industry. Many factories or companies which active in the production sector still use the energy that can produce the high level of CO.

8. The energy consumption of Transportation sector is the most dominant sector in giving effect on the CO Emission, this matter because the total of transportation user in Indonesia is huge. This could happen because of the nature of consumptive for the Indonesian people in the use of transportation. In addition to the total of people who affect the level of consumptive society on the use of transportation, stylish hedonist also be trigger to the increased of use of transportation. With the high total of transportation user, of course, make the energy consumption used for transportation also increased. As a result, the CO Emission, which resulted from energy consumption for transportation, also increased. The situation will worsen with the enactment of MEA (ASEAN Economic Community) although the free market in 2015. Because this matter will cause the total of transportation entering and ready for sale to Indonesia more increased. Indonesia, which only capable of being a consumer sure would become an increasingly consumptive society. Buying means of transportation is no longer because of the necessity to support the activities of life, but because of the flood of product that make society become a consumptive. As a result, with increased the use of transportation in society surely will make the increased of CO Emission. But this matter can avoided if there is solution that more effective and efficient to prevent more reduction at the environment because the energy consumption from transportation.

SUGGESTIONS

1. It's better to prevent the world damage because of the production process produced by the industrial sector is not getting bigger, then it should be must the companies running in industrial sector using the environmental friendly technology. The Environmental friendly technology will reduce the amount of pollutant that will produce by the company. So, if the technology used is environmental-friendly technology helps the company to reducing the cost that spent for the detriment on the degradation occurred.
2. Need for innovation and strategy to look for alternative energy that friendly to the environment. Besides of reducing the environmental degradation, also can reduce the cost of consumption. Because the existing fuel relatively still in categorized expensive.
3. It is expected there is a good cooperation between the government, the parties interrelated in the industrial particularly and all of society element can be support each other to achieve the continuity development for the better quality of life in the future.
4. Changing the pattern of lifestyle of society whom hedonist and consumptive to be a society whom thrifty and productive and surely innovative.

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