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Stopping of NO_x, NP elimination is easiest method to stop global warming

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Abstract

Global warming is caused by the lack of N and P and decrease of CO₂ assimilation and decrease of CO₂ fix and decrease of heat absorption. Lack of N and P is caused by the elimination of NO_x and NP in waste water.

Developed countries eliminating NO_x by immersion of ammonia to the exit gas and eliminating NP in waste water. Global warming will stop if developed countries stop the elimination of NO_x and NP. CO₂ assimilation is activated and Global warming will stop. In addition production of grain and fish will increase and GDP, national wealth and population will increase. The goal "CO₂ increase zero and growth" described in Paris Agreement can be accomplished sooner than 2050. Stopping of ammonia addition to the exit gas and stopping of NP elimination in waste water can stop global warming.

Keywords: NO_x; CO₂ assimilation; NO_x elimination by ammonia; Carbon neutral; Separate key words; Stop of global warming; GWPR

1. Introduction

Global warming is in progress. CO₂ concentration increasing 20 ppm every year. When I looked for the reason, I found that environmental measures at developed countries are eliminating nitrogen and phosphorous and CO₂ assimilation is blocked and production of agriculture and fish industry are blocked. GDP of these countries do not increase much. Stop elimination of NP will activate CO₂ assimilation and increase fish, grain production and increase GDP and protect global warming. (Ref 1-57).

2. Method to get carbon neutral

Paris agreement asking us: CO₂ emission is equal as carbon fix and progress by 2050. Author define ratio CO₂em and CO₂ fix as GWPR (Global Warming Protection Ratio)

$$GWPR = CO_2em / CO_2 \text{ fix}$$

Carbon neutral is CO₂em = CO₂ fix and GWPR = 1 Present GWPR of the world is 1.3. To lower 1.3 to 1, we can do by lower numerator CO₂em or increase denominator CO₂ fix. We can consider which quick method is.

Almost all government official and university personal are considering to lower numerator CO₂em. Considering CO₂ as resources, and tried to change various carbon compounds.

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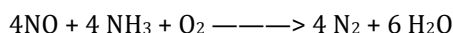
And no report as to increase denominator carbon fix. To increase denominator, close waste water clean center and stop injection of ammonia to the exit gas. No money is necessary is this OK? Chemistry and Chemical industry, of Japan Chemical Society offered special issue for the production of compounds starting from CO₂ two times. Many chemist studying to synthesis compounds from CO₂. But industrial production is impossible, because concentration of CO₂ is 0.06 %. The use of 0.06% CO₂ is possible only by plant like tree, plankton. CO₂ assimilation remains as a method to decrease CO₂. To promote CO₂ assimilation, increase of NP is necessary. To increase NP concentration, stop of NP elimination is enough. By just stopping NP elimination, we can increase CO₂ assimilation. We can increase food production. We can increase GDP. We can improve economy. We can stop increase of CO₂. We can get carbon neutral and growth. We can protect global warming. (ref 1-57)

3. Influence of NO_x elimination on CO₂ assimilation and GDP

Concentration of CO₂ at billion years ago when earth was born was 90%. Present CO₂ concentration is 0.04 %. Plankton CO₂ assimilation did this reduction. Fossil of plankton is oil. The reaction of CO₂ with water produce carbohydrate and oxygen.



Biology contain 1/25 nitrogen of carbon, and 1/125 phosphorous of carbon. 1/25 nitrogen of carbon, and 1/125 phosphorous of carbon is necessary for CO₂ assimilation. However, developed 7 countries set up a rule" If NO_x elimination by ammonia is not done operation is not possible."

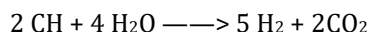
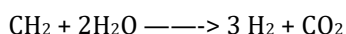
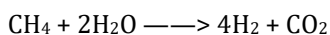


This reaction is eliminating one fertilizer by one other fertilizer. CO₂ assimilation is inhibited seriously. Production of food is inhibited.

Economical damage and social influence are unmeasurable great. Using 72 million tone methane and generating 198 million tone CO₂ making 227 million tone ammonia and eliminating 400 million tone NO_x. 400 million tone NO_x can fix 400 mill t x25 = 10 billion tone CO₂ and can produce 10 billion tone rice, wheat.

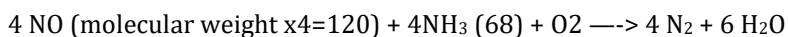
W. Nordhaus (Winner of Nobel Economic Science 2018) proposed theory that global warming is due to increase of CO₂. Carbon emission reduction, decarboxylation is necessary (ref 58-61). Increase of CO₂ is reason of Global warming and decrease of CO₂ emission can protect global warming. Japan government considering that decrease of CO₂ emission and decarboxylation can protect global warming. But these ideas are wrong. Many reports that increase of CO₂ is favorable for increase of green area (ref 62-81) were published. CO₂ must be reduced by CO₂ assimilation. CO₂ assimilation can be activated by supply of enough nitrogen and phosphorous. Elimination of N, P retard CO₂ fix and food production.

It is wrong measure that hydrogen is a fuel which do not produce CO₂. Japan government is doing policy hydrogen as no CO₂ producing fuel. Hydrogen can be prepared from LNG, petroleum(CH₂), coal (CH) producing CO₂



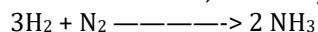
Therefore it is wrong to say hydrogen as no CO₂ producing fuel.

CO₂ produced in Japan is 1250 million tone. In this time, 1250x1/25= 50 million tone NO_x (90 % is NO) is produced. To eliminate this NO, 28.33 million tone NH₃ is used.

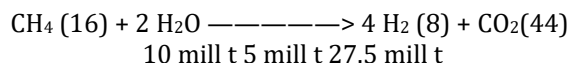


50 mil t 28.33 mill t

To make 28.33 mill tone ammonia, 5 mill t hydrogen is used.



5 mill t 28.33 mill t
To make 5 mill t H₂, 10 mill t CH₄ is used and 27.5 mill t CO₂ is produced

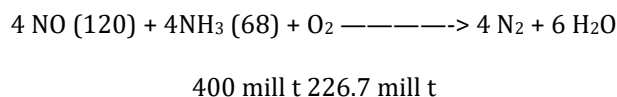


Japan eliminated 50 mill t NO_x by spending 10 mill t LNG emitting 27.5 mill t CO₂.

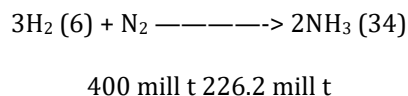
If Japan do not eliminate NO_x, Japan can fix 50 mill x 25 = 10 bill t CO₂.

CO₂ grow plankton 2/3 of his weight (30 1/6 of molecular weight C₆H₁₂O₆ /44 CO₂ molecular weight). Fish growth by eating 10 times of plankton. 10 bill t CO₂ fix mean 10 billion x 3/4x1/10 = 75 billion kg, fish production. Fish price is 2 \$ per kg. 2x 75 bill =150 billion \$. But by the elimination of NO_x, 150 billion \$ fish was not produced Actually Japan was producing 12 mill t fish and 4 mill t rice before 1980 at that time no elimination of NO_x and NP. The value of 12 mill t fish and 4 mill t rice are 240 billion \$ and 14 billion \$. By the elimination of NP such valuable products is not produced. Fisherman 388990 in 1963 decreased to 151700 in 2018. Country region is suffering from depression and depopulation. GDP does not increase since NP elimination has started. The elimination of NP influence not only on warm up earth but also give significant bud influence on economy. The law to eliminate NO_x by blow in ammonia to the exit gas and to elimination of NP in waste water should be eliminated sooner. If the law is eliminated and sufficient nitrogen is supplied fish prediction will increase and GDP will increase and we can enjoy long life (Ref 82-89)

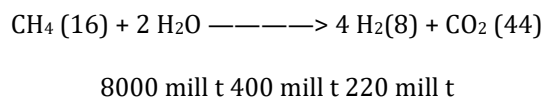
CO₂ produced at developed countries is around 10 billion tone. And around 10x 1/25 = 4 hundred million tone NO_x is produced. To eliminate this NO (90% of NO_x is NO), 226 million tone ammonia NH₃ is used.



To make 226.2 mills NH₃, 400 mill t H₂ is used.



To make 400 mill tone H₂, 80000 mill t CH₄ is used. And 220 mill t CO₂ is produced.



If developed country stop addition of ammonia to the exit gas, Consumption of 8000 million tone CH₄ can be saved. And emission of 220 million tone CO₂ can be saved. And 400 mill t x 25 = 10 billion t CO₂ can be fixed. Accordingly 220 mill t + 10 bill t = 10.22 billion tone CO₂ can be fixed. CO₂ em (CO₂ emission) of developed countries is 10 billion tone. GWPR (CO₂em)/(CO₂fix) = 1. Therefore, CO₂ increase is zero minus 0.22 billion tone. 10.22 billion Tone CO₂ produce plant like wheat. CO₂ produce wheat plant 2/3 (30(1/6 of molecular weight of C₆ H₂O₆) /44 Molecular weight of CO₂) weight of his weight. Wheat contain 2/3 straw of his weight Wheat grain will be about 1/3 weight of plant. 10.22 billion Tone CO₂ can afford

10.22 billion x 30/44 x1/3 = 2.32 billion tone grain. 1kg wheat is 1.5 \$ 2.32 billion kg wheat is 3.48billion \$. Therefore, if developed country do not eliminate NP. 2.32 billion Tone wheat. 3.48 billion\$ is produced. GDP will increase. Economy of developed country will become much better. And global warming will not happen.

Yahoo News reported. ICAO accession 193 countries agreed that aviation industry do CO. Increase zero by 2050. Aviation industry is emitting 110 h million tone CO₂ 2.75 % of total CO₂ of the world. Aviation industry need 15 h million dollar investment is necessary for decarbonization. The author is proposing plan to make CO₂ increase zero by 2050 without investment. The plan is to stop blow ammonia in to the exit gas. Then 10.2 billion tone CO₂ emission will stop and CO₂ increase become zero.

It is difficult to reduce CO₂ but it is easy to reduce GWPR by increase of CO₂ fix. To increase CO₂ fix, by increase of NP. To increase NP, just stop the elimination of NP. To increase N and P, stop the elimination of NP. Developing countries like China, India and Indonesia are using NO_x and NP as fertilizer. CO₂ assimilation is promoted rapidly and production of agriculture and fish industry increased rapidly and GDP increase rate are high. On the contrary at developed country, CO₂ assimilation is inhibited and production of agriculture and fish industry is inhibited. Economic and social influence are immeasurable grate. We can compare developed country who doing NO_x, NP elimination and developing countries who use NO_x, NP as fertilizer.

CO₂em (CO₂emission), NO_x (NO_x production), NO_xc (NO_x concentration at exit gas), Dump (Wastewater dumping), Fixable CO₂, EleP (Electricity price), GWPR (global warming protection ratio), GDP (GDP ratio 2021/1991) of 13 countries are shown in Table 1.

Table 1 CO₂em NO_x, NO_xcon, W Dump, Fixable CO₂, EleP, GWPR, GDP of 13 countries

Country	CO ₂ em	NO _x	NO _x con	Dump	Fixable CO ₂	Ele P	GWPR	GDP
	Hmill t	H mill t	g/kWh		Hill t	C/kWh		2021/1991
World	510	16.5						
China	196.4	4.25	1.6	Do	100	1.6-4.5	1.0	51.1
India	24.6	1	1.6	Do	32	6	0.76	11.1
Indonesia	5.0	0.2	1.6	Do	19	10	0.3	
USA	51	2	0.5	no	95	12	0.53	3.7
Japan	12	0	0	No	3.8	24	3.3	1.1
Russia	19.6	0.63			32	17	0.61	
Germany	7.6	0.36	1.0	No	35	33	2.2	4.3
U.K	4.0	0.16	1.3	No	2.4	15.4	1.2	3.3
Italy	3.5	0.14	0.5	No	3.0	28	1.2	
France	3.3	0.13		No	8.4	17	0.4	
Canada	5.6	0.22	1.3	No	100	8.1	0.06	
Iran	6.3	0.25			1.6		3.0	
Turky	4.0	0.16			7.8		0.5	

Developing countries like China, India and Indonesia do not eliminate NO_x and do not dump waste water and use NO_x and NP. They can generate electricity with low price. The price of electricity at China is 1.6-4.5 c/kWh, India 6 c/kWh, Indonesia 10 c/kWh. Developed countries. Germany 35 c/kWh, Japan 24 c/kWh.

Developing countries like China, India and Indonesia do not eliminate NO_x and do not dump waste water and use NO_x and NP as fertilizer. They can accelerate CO₂ assimilation. They can fix CO₂ produced at their countries. Therefore, GWPR is less than 1. GDP ratio 2021/1991 is over 5. China GWPR 1.0, GDP ratio 2021/1991 is 51.1 India GWPR 0.76 GDP ratio 11.1 Indonesia GWPR 0.3

Developed country eliminate NO_x and waste water NP. Then GDP ratio 2021/1991 is low USA 3.7, Japan 1.1, Germany 4.3, UK 3.3. Japan started NO_x, NP elimination. Then CO₂ assimilation is blocked. Fish industry and agriculture are blocked and national wealth decreased much.

Developed countries are eliminating 30 h million tone NO_x spending 12 h million tone LNG and emitting 33 h million tone CO₂. If no elimination NO_x, 30 million tone NO_x can fix 30x25= 750 million tone CO₂. 750 million tone CO₂ can become 30/44 x750 million tone plant like rice, wheat corn. Plant produce 1/3 grain. 2/3 of plant is straw. 750 million tone CO₂ afford 750x30/44x 750 x1/3= 170.4 million tone grain. Suppose 1 kg grain is 1 \$, 170.4 million\$ x1000 = 170.4 billion \$,

Developed countries can get 174.4 billion \$, by stopping NP elimination and can get high GDP and GDP ratio 2021/ 1991 will increase as China.

Not only elimination of NO_x and NP are promoting global warming, but also retarding development of countries and industry.

Japan government consider that ammonia as a substance that do not produce CO₂ and using ammonia to eliminate NO_x. CO₂ produced in Japan is 1.25 billion tone. NO_x produced in Japan is 1/25 of 1.25 billion tone, 50 million tone. Japan is eliminating 20 times of synthetic fertilizer 2.5 million tone. Japan official are trying to make zero generations of CO₂. And trying to reduce CO₂ by many method.

Studies at Japan is decarbonization, decrease of CO₂, carbon neutral, carbon recycle (consider CO₂ as resources and separation of, recovery of CO₂, and reuse for various carbon compounds) But industrialization is impossible. Because CO₂ concentration is too low 0.06%.

Only plant can absorb such dilute CO₂. CO₂ assimilation by plant is only method to reduce carbon increase.

Activation of CO₂ assimilation and increase of CO₂ fix is easy method to make carbon neutral

But government policy do not change. I phoned and send mails more than ten times. to Ministry of the Environment, Ministry of Agriculture, Forestry and Fisheries. But they did not response. Official of ministry of fisheries say that we are glad to see such paper. Minister of Environment has stronger power to continue the elimination of NP suppressing the opinion of Ministry of agriculture and Fisheries. And continue the elimination of NO_x and NP.

Elimination of NO_x, NP suppress CO₂ assimilation and suppress the production of agriculture and fishery product and depress the economy and depress the increase of GDP. As shown In Table1,

GDP ratio of Japan 2021/1991 is 1.1 The GDP ratio of China who do not eliminate NO_x, NP is 2021/1991 is 51.1 Therefore, we should stop elimination of NO_x, NP and increase CO₂fix and become carbon neutral and develop.

Japan should change to the policy to increase CO₂ fix and increase food production. Japan should decrease the import of LNG (now Japan is top importer of LNG) by stopping the production of hydrogen. Also Japan should stop the investment to use hydrogen as new energy. And carry hydrogen from Australia. These investment do not contribute for the decrease of GWPR, protection of global warming. We can stop NO_x, NP elimination by just stop ammonia addition and stop waste water purification center without investment. And we can change CO₂ to fish and grain. We can increase food production ratio from 37% to 70 -100 %. Contribution to the economy is so great. We can protect depression of country. We can accomplish the goal Increase of CO₂ is zero and develop before 2050.

4. NO_x is good fertilizer and best compound to reduce CO₂ (ref 7)

NO_x is hated as pollution gas causing illness. Many governments mis understand the usefulness of NO_x and set up very strict law to eliminate NO_x in burned gas and forced to eliminate NO_x using ammonia this caused global warming

I wish to insist that NO_x elimination should be stopped. Because toxicity of NO_x is not so serious compared with significant merit of NO_x. NO_x is essential for plant to grow and produce food. NO_x is essential for the promotion of CO₂ assimilation and essential for the production of foods (ref 26, 27,41-54) and for the promotion of health and long life ((ref 83-89)

Thunder produce NO_x from N₂ and O₂. (ref 7, 90-93). About 4 million thunder in one day and about 30 x 10⁶ t NO_x is produced by thunder in one year and about 20-80% of NO_x is produced by thunder in the world.

The year of many thunder give good harvest. This fact is written at Kojiki, 1300 year old Japan history book. Thunder by Japanese character Kaminari rain top on ta (field) bottom. Lightning Japanese character Inazuma Ine (rice) and Tsuma (wife). Both is precious as life. Heavy snow (2-3 m) fall at Hokuriku district Japan and produce many thunder this produce much NO_x. The concentration of nitrogen in the snow melted river is high. Toyama bay produce plankton, fish, crab, shrimp. Ishikawa prefecture produce rice and Niigata prefecture produce delicious rice koshihikari. I buy fish and rice at Niigata prefecture, meat from Ishikawa Prefecture. Rice straw afford meat by reasonable price.

5. Heat balance of earth. Heat absorption by CO₂ assimilation (Ref 29)

On earth 140 billion tone fossil fuel is burned and CO₂ 3.6 x10¹⁰ t was produced. And 7.4 x 10¹⁵ kcal is produced. When we consider the heat produced by animal respiration, 7.4 x 10¹⁵ kcal x 4.6/3.6 = 9.45 x 10¹⁵ kcal is produced.

The earth is also warmed by the heat of atomic energy. Uranium produce 2 x 10¹⁵ kcal heat. Electricity generation capacity of the world is 16868 Tetra watt h. Electricity generation by atomic energy is 2086 Tetra watt h. Therefore, 7.4 x 10¹⁵ x 2986/ 10868 = 2.02x 10¹⁵ kcal evolved by atomic energy.

The earth is also warmed by the heat evolved by animal. Human being eat 1000 kcal food every day and release heat 1000 kcal every day. Population of the world is 7.6 billion. Therefore, human being is releasing 1000 x 365x 76x 10⁹= 2.8x10¹⁶ kcal in one year. Animal other than human being, caw, bird, whales, seal are producing heat. We can estimate as same as human being 2.8x10¹⁶ kcal. Therefore, total heat is fossil burning produce 7.4 x 10¹⁶ kcal, atomic energy produce 2.02x10¹⁵ kcal. Human being produce 2.8x10¹⁶ kcal. Other animal produce 2.8x10¹⁶ kcal

Total heat produced is (7.4+0.202 + 2.8+ 2.8) x10¹⁶= 13.002 x10¹⁶kcal. We must absorb 13.002x10¹⁶ kcal by CO₂ assimilation. CO₂ 1 mole 44g and water 18 g absorb 114 kcal sun's heat to carbohydrate and 32 g oxygen. If 51 billion t, 5.1x 10¹⁶ g CO₂ do CO₂ assimilation, 114x 5,1x10¹⁶ /44= 13.136x10¹⁶ kcal can be absorbed. Heat production 13.002 x10¹⁶ kcal is almost same as heat absorption 13.136x10¹⁶ kcal.

CO₂ assimilation must be promoted by stopping of NO_x elimination and by stopping waste water purification. By stopping NO_x elimination. 1.44 billion tone NO_x can fix 14,4x 25= 36.0 billion tone CO₂. Amount of N.P in drainage is around 0.5 billion tone. By using this 0.5 billion tone N.P, we can fix 0.5x 25= 12.5billion tone CO₂. By adding 36.0 + 12.5= 48.5 billion tone CO₂ can be fixed. And we can absorb 13.1 x 10¹⁶ kcal. And earth can keep comfortable temperature. Heat absorption by CO₂ assimilation is essential to lower earth temperature.

6. Method to improve Economy

- Best method to improve economy is activation of production of food. Activation of CO₂ activation will produce much food and economy will progress. Provide nitrogen and phosphorous is necessary. Like China, Indian and Indonesia and Japan (before 1980) No addition of ammonia to exit gas, no waste water treatment are good. If developed countries stop environmental measures, If developed countries stop NO_x elimination. Consumption of 80 million tone LNG can be saved.220 million tone CO₂ emission can be saved. 40000x 25 = 10 billion tone CO₂ can be fixed. Accordingly 220 Millie + 10 billion tone = 10.22 billion tone can be fixed. CO₂ emission is 10 billion tone. CO₂ increase become zero minus0.2 billion tone. Paris agreement is asking development. Activation of CO₂ assimilation will increase food production. Economy will develop
- Use of geothermal (heat of earth) In the middle of earth, there are magnitude magma, huge energy. Japan and Hungary have volcanic mountain. Generation of electricity should be done at more large scale. Use of heat of earth is not done at enlarge scale by the resist of hot spring supplier. Reuse of hot water as hot spring or as room warmer after electricity generation will be useful. More deep digging to 1000 or 2000 m might produce very high temperature water as new energy source.
- Increase of nitrogen and phosphorous concentration of sea water and rain. Concentration of nitrogen in rain was 1.2 mg nitrogen in 1 L before 1980 in Japan. 88 µg nitrogen in 1L sea water. Before 1980. GWPR was 1.3. After 1980 NO_x, NP elimination was carried out. Then nitrogen concentration of sea water become 0.1 µg /L at Seto inland sea Japan. and no nitrogen in rain. GWPR is 3.3 now. Paris agreement asking GWPR = 1. We must decrease 3.3 to 1 or near 1. To lower GWPR, we must study the method to increase the concentration of nitrogen by mixing high nitrogen deep water with low nitrogen shallow water. Normally typhoon does this job. We must study the way to increase the stirring. We may be able to throw nitrogen and phosphorous fertilizer into sea and increase CO₂ fix and absorb heat.
- Japan is emitting CO₂ and using electricity large amount per person in compared with European country. Politicians are trying to make job to increase rate of working person to win election. Job like rebuilding of house and building, construction of dam, rail way, linear motor shinkansen between Tokyo and Nagoya, aquarium. Donation of electricity generation plant, bridge, clean center to developing countries. These job consume much electricity and produce much CO₂. These job should be stopped.
- Plantation of fruit tree at burned land. Wild fire and field fir are happening at USA and Spain,Australia and many countries. Tree and bush are burned. This ia a good chance to change kind of tree. Population is increasing and require to produce food is increasing. Plantation of fruit tree is recommended. Candidate tree is Kaki (persimmon), pear, orange, peach, apple, pine, banana, I recommend Kaki (persimmon). Because Kaki produce

very sweet fruit fixing much CO₂. 18 tone CO₂ is fixed per 1 hectare (100 m x100 m). The local house at Japan before 1940 planted 1 Kaki tree. I was a Professor at Shandong University. The trees of the university were all pear tree.

7. Control of climate

7.1 Control of temperature

Temperature can be controlled by CO₂ assimilation. CO₂ assimilation is heat absorbing reaction. 114 kcal is absorbed / mol. Global warming will not happen if developed countries do not do NO_x, NP elimination. Then tree grow well and rain is well absorbed and do not frown to the river. The earth will be kept as green land The earth will be cooled by the absorption of heat by the activation of CO₂ assimilation as shown at heat balance part.

7.2 Control of rain fall

When rain fall is desired, burning of wood is done as rainfall pryer at Japan. Hot air produced by burning of tree go up to heaven and low pressure is produced and new air containing water blow in and rain fall. In Europa, drought is now at Spain, France, Italy and Germany. Stopping of coal electricity generation at Germany. Generation of weak west wind does not blow in to Spain France and Germany. And rainfall was very small. But now electricity generation by coal restarted at Germany Then rain might start to fall next year. Drought is caused by the elimination of NO_x, NP. Shortage of nitrogen and phosphorous retard the growth of tree. Land become no tree like desert. Desert give no evaporation of water and no rain. For the prevention of drought, elimination of NO_x and NP should be stopped.

8. Electricity generation should be done by coal (Ref 29)

IPCC asking electricity generation by oil and natural gas than coal, because coal generate more CO₂ than oil. But I think coal is better for the generation of electricity to save the consumption of oil. The difference of CO₂ generation by both fuels is not so much different. CO₂ increase can be saved by the decrease of CO₂ emission by stopping NO_x elimination procedure. When we compare buried amount, coal (132 years) is 3 times as much as oil (42 years) and natural gas (60 years). We can manufacture many kind of chemical and plastic from oil. Oil is more convenient as transportation fuels. Therefore, oil and natural gas are 3 times more precious than coal. Price of coal is 1/3 of oil. Therefore we can generate electricity by coal at low price. The price of electricity is very important for the competition of productive industry. The price of electricity at China is 1.6-4.5 c/kWh, and India 6 c/kWh. These countries generate electricity by coal. Germany 35 c/kWh, Japan 24 c/kWh. These countries generate electricity by natural gas.

The year of oil scare is coming in 50 years. Then we must do liquefaction of coal to get liquid fuel for transportation. In this process, about half energy of coal is lost. We can enjoy our civilized life longer by saving the consumption of oil and natural gas. Gasoline car is shifting to electric car. This is shift from oil to coal (electricity produced from coal).

9. Electricity generation by solar system should be done at no green land

Construction of solar mega system by the sacrifice of wood is not clever way. 1 hector, 1000 m² wood can absorb heart 3.8x 10⁶ kcal and can fix 13.7 tone CO₂. Heart absorption efficiency of solar system cell is 1/3 of green leaf of tree. Solar system cell cannot fix CO₂. For the preparation of solar cell material, much fossil fuel is necessary generating almost same amount of CO₂ in compared with the generation of CO₂ and electricity by burning of fossil fuel. Therefore, construction of solar mega system by the sacrifice of wood is promoting global warming.

1000 m² cell can generate 114000 kWh and can save 7.5 t CO₂ and can absorb 1.3 x10⁶ kcal For the production of 1000 m² cell 5 tone CO₂ is produced. Electricity generation should be done at no green land like Arabian Peninsula. China (top maker of electricity generation cell) constructed big solar electricity plant at high altitude no green Xinjiang.

10. Future Prediction (ref 51)

10.1 We must protect burn out of fossil

Since industrial revolution, mankind has been using a large amount of fossil fuel for manufacturing of food, iron, aluminium, plastic, and fertilizer. Global warming comes from over burning of fossil. Fossil fuel is a fossil of plants made

by CO₂ assimilation from CO₂ and water in 5 billion years. Mankind has been using this fossil fuel in 500 years. Yearly use of fossil fuel is estimated to be reduced 25% by COVID-19. Thus, the term of years when oil, natural gas, and coal can be used is extended from 42 to 56 years, from 60 to 81 years, from 121 to 162 years, respectively.

Until now, our human being has used 1360 billion tons of fossil which is corresponding to around a half of the total reserves of fossil buried in the earth. The remaining fossil is estimated as 1360 billion tons.

When fossil is burned out, we need not worry about global warming. We must worry how we can live civilized life. How can we drive car, airplane, and agriculture machine? How can we generate electricity? We must save the consumption of fossil. We should not spend precious fossil for the elimination of NO_x and NP. We must protect burn out of fossil fuel as long as possible.

10.2 Prediction of fossil fuel and life at 2222 (200 years after now)

Human being is using now much fossil as exemplified in the use of 3.4 billion tons of natural gas, 3.1 billion tons of oil, and 5.6 billion tons of coal. About the same amount of remaining fossil as that used so far could be used in the future. However, the remaining fossil is limited. The amount of fossil used every year will become smaller than now. In 2222, a 1/4 amount of remaining fossil will be still available. We must limit the use of fossil to get food like agriculture machine and fishing boat. The number of sailing boats will increase. The number of cars and airplanes will become much fewer. Leisure trip must be limited. The use of fossil for air conditioning must be limited. We must depend on woods. There is 80 billion tons of wood in the world and increasing 1-2% annually. Tree grows quickly if sufficient N and P are provided. We must provide enough NP for the promotion of plant growth.

11. Discussion

11.1 Should develop countries pay money to developing countries? Main discussion point at PC 27 2022 at Egypt was how much money should pay from developed country to developing country.

Correct answer is : Pay is unnecessary. Developed country must stop global warming by next PC 28. Global warming can be stopped by stopping of put in ammonia to the exit gas. Then CO₂ assimilation is accelerated and 10 billion tone CO₂ is fixed and 13.1×10^{16} kcal is absorbed. And earth will cool down. Global warming will stop as written at heat balance part. Then payment of developed counties become unnecessary. And much food is produced.

11.2 Should Japan pay money to developing countries?

Japan is proposing to pay some money to developing countries. But it is better to stop paying. Japan can stop global warming by stop put in ammonia to the exit gas and can stop global warming and absorb heat and cool down the earth and and stop global warming and get grain and fish. _Activation of CO₂ assimilation is essential to stop global warming

11.3 G20 summit Electricity generation by coal

10 countries including US, Japan are planing to pay 20 billion dollar to Indonesia to change from coal electricity generation to LPG electricity generation. But I think electricity generation should be done by coal. Buried amount, coal (132 years) is 2 times as much as natural gas(60 years). LNG is more convenient as transportation fuels. Therefore, oil and natural gas are 3 times more precious than coal. Price of coal is 1/3 of LNG. The price of LNG is rising. Therefor we can generate electricity by coal at low price. The price of electricity is very important for the competition of productive industry. Then we should not pay 20 billion dollar to change from coal to LNG

11.4 Stopping of war at Ukurainen

War at Ukuraine is consuming much fossil and increasing much CO₂. Ukurainen reported at PC27. War is producing greenhouse gas hundred million tone, and it make difficult to fit Paris treatment. War at Ukuraine should be stopped

12. Conclusion

Stopping of ammonia addition to the exit gas and stopping of NP elimination in waste water can activate CO₂ assimilation and can produce much grain and fish and can get high GDP and growth.

Compliance with ethical standards

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References

- [1] Shoichiro Ozaki Recycle of nitrogen and phosphorous for the increase of food production. New Food Industry 1993 35, No 10 33-39.
- [2] Shoichiro Ozaki. Methods to protect global warming. Adv Tech Biol Med. 2016, 4. 181
- [3] Shoichiro Ozaki. Methods to protect global warming, Food production increase way. New Food atIndustry 2016 58 No 8 47-52.
- [4] Shoichiro Ozaki. Global warming can be protected by promotion of CO₂ assimilation using NO_x. Journal of Climatology & Weather Forecasting 2016 4.2 1000171.
- [5] Shoichiro Ozaki. Global warming can be protected by promotion of plankton CO₂ assimilation. Journal of Marine Science: Research & Development 2016 6. 213.
- [6] Shoichiro Ozaki Method to reactivate fish industry. New Food Industry 2017 59 No 3 61-70.
- [7] Shoichiro Ozaki. NO_x is Best Compound to Reduce CO₂. Eur J Exp Biol. 2017, 7:12.
- [8] Shoichiro. Ozaki Protection of global warming and burn out of fossil fuel by promotion of CO₂ assimilation. J. of Marine Biology & Oceanography 2017, 6:2.
- [9] Shoichiro. Ozaki Promotion of CO₂ assimilation supposed by NO_x is best way to protect global warming and food production. Artiv of Pet-Envilron Biotechnol 2017 02.110.
- [10] Shoichiro Ozaki. Promotion of CO₂ assimilation supported by NO_x is best way to protect global warming. J. Marine Biol Aquacult 2017 vol 3. Issue 2.
- [11] Shoichiro Ozaki. Stopping of NO_x elimination is easy way to reduce CO₂ and protect global warming. J. Environ Sci Public Health 2017:1 (1) 24-34.
- [12] Shoichiro Ozaki. Stopping of NO_x elimination is clever way to reduce CO₂ and to increase fish production. J. of Cell Biology 6 Immunogy 2017 1e 102.
- [13] Shoichiro Ozaki Effective uses of NO_x and drainage are clever way to protect global warming and to increase fish production. Oceanography & Fisheries 2017 4(4).
- [14] Shoichiro Ozaki. NO_x Elimination and Drainage NP Elimination should be stopped for the production of fish and for the protection of global warming. J. of Fisheries and Aquaculture Development 2017 issue 05 125.
- [15] Shoichiro Ozaki. Let`s enjoy civilized life using limited amount of fossil fuel. Journal of Aquaculture & Marine Biology 2017 6 (3) 06 00158.
- [16] Shoichiro Ozaki Method to fit Paris agreement for protection of global warming. International Journal of Waste Resources 2017 7-4 318 doi: 10.4172/2252-5211.1000318.
- [17] Shoichiro Ozaki. Method to protect global warming and to produce much fish by promotion of plankton growth. New Food Industry 2018 60 no3 88-94.
- [18] Ozaki Shoichiro. Method to protect global warming by promotion of plankton CO₂ assimilation. Rikuryou Science 2018 61 23.
- [19] Shoichiro Ozaki. Effect of NO_x elimination on electricity price, fish production, GDP and protection of global warming. International J of Waste Resources 2018 8 issue 1 1000328 doi:10.4172/2252-1000328.
- [20] Shoichiro Ozaki. How to fix carbon dioxide same amount as emission for the protection of global warming. Research & Development in Material Science 2018 vol 3 issue 5.
- [21] Shoichiro. Ozaki Stop of NO_x elimination and stop of wast water purification are easy methods to protect global warming. J of Immunology and Information Diseases Therapy 2018 1 1 doi.org/06.2018/1.10006.

- [22] Shoichiro Ozaki. Climate can be regulated by effective use of NO_x and wastewater NP. 2018 Biomedical Research and Reviews volume 1.1.
- [23] Shoichiro Ozaki. Promotion of Plankton CO₂ assimilation by effective use of NO_x and NP is best method to produce much fish and protect global warming. 2018 J of Marine Science Research and Oceanography Volume 1 issue 1. 1 doi:10.4172/2155-9546-c1-022.
- [24] Shoichiro Ozaki. Promotion of plankton CO₂ assimilation by NO_x is best way to protect global warming and to get best climate. International J of Earth and environmental Science 2018 3 160.
- [25] Shoichiro Ozaki. Promotion of plant growth by NO_x is best method to reduce CO₂ and to protect global warming. Current Trends in Oceanography and Marine Science 2018 01 1-4.
- [26] Shoichiro Ozaki. Fish is best food to get anti-aging and long life. NO_x elimination should be stopped to produce much fish and to protect global warming Jacobs Journal of physiology 2018 4.1 017
- [27] Shoichiro Ozaki. Fish is Best Food to Get Anti-Aging and Long Life. J of Aging and Neuropsychology 2018 issue 2 1-6 DOI: <http://dx.doi.org/10.20431/2454-7670.0501001>.
- [28] Shoichiro Ozaki. NO_x and NP in waste water fix CO₂ and control global warming and climate. International J of Biochemistry and Physiology 2018 3 (4) doi: 10.23880/ijbp-16000140.
- [29] Shoichiro Ozaki. The effect of increase of NO_x and CO₂ on grain and fish production, protection of global warming and climate. International Journal of Earth Science and Geology 2019 1(1) 6-10.
- [30] Shoichiro Ozaki. Complete use of NO_x and NP is essential for the increased production of food and protection of global warming. Inter. J. Innovative Studies in Aquatic Biology and Fisheries 2019 3 (1) 1-6.
- [31] Shoichiro. Ozaki. Why global warming is progressing. Promotion of CO₂ assimilation is best method to protect global warming. Rikuryou Science 2019 62 16-18.
- [32] Ozaki Shoichiro Complete use of NO_x and NP is essential for the increased production of food and protection of global warming. Inter.J. Innovative Studies in Aquatic Biology and Fisheries 2019 3 (1) 11-15
- [33] Shoichiro Ozaki. Increase of CO₂ and NO_x promote CO₂ assimilation, CO₂ fix and food production. Advances in Bioengineering & Biomedical Science Research 2019 2 issue 3 1-6.
- [34] Shoichiro Ozaki. Promotion of CO₂ assimilation by effective use of NO_x and NP is best method to produce much fish and protect global warming. EC Agriculture 2019 5: Issue 8, 492-497.
- [35] Shoichiro Ozaki. Why fish production of Japan decreased. Why global warming is progressing. New food Industry 2019 Vol 61 No 10 787-793.
- [36] Shoichiro Ozaki. In pure water no fish can live. Water purification promote global warming, decline of countries. Rikuryou Science 2020 63 24-29.
- [37] Shoichiro Ozaki. NO_x elimination and NP elimination are promoting global warming. EC Agriculture 2020 6.1 1-8.
- [38] Shoichiro Ozaki. Purification of water and air is promoting global warming and country decline. Journal of Marine Science and Oceanography 2020 3 issue 1 1-4.
- [39] Shoichiro Ozaki Relation of London Dumping Convention and Global Warming. If Developed Countries stop NP and NO_x Elimination, CO₂ Assimilation Increase and Global Warming Will Stop. International J of Pollution Research 2020 3 115-119.
- [40] Shoichiro Ozaki. Global warming will stop, if developed countries stop NO_x and NP elimination. J. of Environmental Sci. Current Research 2020 3.022.
- [41] Shoichiro Ozaki. Stopping of NO_x, NP Elimination at developed countries is easy method to protect global warming. J Bacteriology and Myology 2020 7 (4) 1137.
- [42] Shoichiro Ozaki. In pure water no fish can alive. Water purification promote global warming and decline region and countries. New Food Industry 2020 62 (8) 615-620.
- [43] Shoichiro Ozaki. Promotion of recycle of carbon, nitrogen and phosphorous is essential for protection of global warming and increase of national wealth. American J of humanities and Social Science 2020 Vol 5 Page 01:13.
- [44] Shoichiro Ozaki. Stopping of NO_x and NP elimination at developed countries is essential for the promotion of food production and protection of global warming. J of Soil Science and Plant Physiology 2020 2 (2) 1-10.
- [45] Shoichiro Ozaki. Promotion of CO₂ assimilation by stopping NO_x, NP elimination is best method to produce much food and to protect global warming. American J of Engineering, Science and Technology 2020 vol 5 1-15.

- [46] Shoichiro Ozaki. Stopping of NO_x,NP elimination is easy method to protect global warming. J of Research in Environmental and Earth Science 2020 6 issue 6 12-21.
- [47] Shoichiro Ozaki. Method to protect global warming to fit Paris agreement and to enrich the countries. Rikuryou Science 2021 64 32-38.
- [48] Shoichiro Ozaki Method to protect global warming and to get long life International Journal of Clinical Case Reports 2020; 8(2) 002-16 DOI: 10.46998//IJCCR.2020.08.000182
- [49] Shoichiro Ozaki Aquaculture of plankton and fish by fertilizer is best way to protect global warming Acta Scientific Biotechnology 2021 2.1 13-22
- [50] Shoichiro Ozaki Promotion of CO₂ assimilation by NO_x,NP is easy method to protect global warming to get high GDP Open access Research J of Biology and Pharmacy 2021 02 (02)063-086 Article Doi: <https://doi.org/10.53022/oarjbp.2021.2.2.0047>
- [51] Shoichiro Ozaki Promotion of CO₂ assimilation by sufficient supply of nitrogen and phosphorous is easiest method to fit Paris agreement and to protect global warming and to get national wealth International Journal of Science and Research Archive, 2021,04(01),092-105 Article Doi:<https://doi.org/10.30574/ijsra.2021.4.1.0187>
- [52] Ozaki Shoichiro Stop NO_x,NP elimination and promotion of CO₂ assimilation will stop increase of CO₂ and fit Paris agreement and increase food and enrich country. Rikuryou Science 2022 65 37-47
- [53] Ozaki Shoichiro Recycle of nitrogen, phosphorous is essential for protection of global warming. World J of Advanced Science and Technology 2022, 01(01),015-030
- [54] Ozaki Shoichiro Method to achieve carbon neutral and to fit Paris agreement and to protect global warming. World J of Advanced Science and Technology 2022,02(01)022-031
- [55] Ozaki Shoichiro. Sure method to protect global warming and to increase GDP New Food Industry 2022 64(12) 799-802
- [56] Ozaki Shoichiro Environmental measures inhibit CO₂ assimilation, inhibit food production, make worse economy and promoting global warming GSC Advanced Research and Reviews, 2022, 13(02), 245–257
- [57] Ozaki Shoichiro Environmental measures, inhibit food production, make worse economy and promoting global warming Rikuryou Science 2023 66 35-42.
- [58] William Nordhaus The Climate Casino. Risk,Uncertainty, and Economics for a Warming World. 2013 Yale University Press
- [59] William Nordhaus “Estimate of the social cost of carbon: Back ground and results from the RICE-2011 model “ Cowles Foundation Discussion Paper no.1826, October 2011
- [60] William Nordhaus “ Designing a friendly space for technological change to slow global warming “ Energy economics 33 (2011) : 665-673
- [61] Climate Change: Integrating Science, Economics, and Policy, N. Nakicenovic, W. Nordhaus, R. Richels, and F. Toth, eds., IIASA, CP-96-1, 1996
- [62] Zaichun Zhu, Shilong Piao[...]Ning Zeng Greening of the Earth and its drivers Nature Climate Change 2016 volume 6, 791–795 |
- [63] Ziska, L. H. Rising atmospheric carbon dioxide and plant biology: the overlooked paradigm. In Controversies in Science and Technology, From Climate to Chromosomes. eds. Kleinman, D.L., Cloud-Hansen, K.A. et al. (New Rochele: Liebert, Inc. 2008 379-400.
- [64] de Graaff, M. A., Van Groenigen, K. J. et al. Interactions between plant growth and soil nutrient cycling under elevated CO₂: a meta-analysis. Global Change Biology 2006 12, 2077-2091.
- [65] Jablonski, L. M., Wang, X. et al. Plant reproduction under elevated CO₂ conditions: a meta-analysis of reports on 79 crop and wild species. New Phytologist 2002 156, 9-26.
- [66] Reich, P. B. & Oleksyn, J. Global patterns of plant leaf N and P in relation to temperature and latitude. Proc. Natl Acad. Sci. USA 2004 101, 11001–11006
- [67] Martiny, A. C., Pham, C. T. A., Primeau, F. W., Vrugt, J. A., Moore, J. K., Levin, S. A. & Lomas, M. W. Strong latitudinal patterns in the elemental ratios of marine plankton and organic matter. Nature Geosci. 2013 6, 279–283.
- [68] Reich, P. B. & Oleksyn, J. Global patterns of plant leaf N and P in relation to temperature and latitude. Proc. Natl Acad. Sci. USA 2004 101, 11001–11006.
- [69] Doney, S. C. Oceanography: Plankton in a warmer world. Nature 2006 444, 695–696.

- [70] Allen, A. P. & Gillooly, J. F. Towards an integration of ecological stoichiometry and the metabolic theory of ecology to better understand nutrient cycling. *Ecol. Lett.* 2009 12, 369–384
- [71] Regaudie-de-Gioux, A. & Duarte, C. M. Temperature dependence of planktonic metabolism in the ocean. *Glob. Biogeochem. Cycles* 2012 26, 1–10.
- [72] Boyce, D. G., Lewis, R. M. & Worm, B. Global phytoplankton decline over the past century. *Nature* 2010 466, 591–596.
- [73] Thomas, M. K., Kremer, C. T., Klausmeier, C. A. & Litchman, E. A global pattern of thermal adaptation in marine phytoplankton. *Science* 2012 338, 1085–1088
- [74] Ainsworth, E. A. Rice production in a changing climate: a meta-analysis of responses to elevated carbon dioxide and elevated ozone concentration. *Global Change Biology* 2008 14, 1642-1650
- [75] Ainsworth, E. A. & Rogers, A. The response of photosynthesis and stomatal conductance to rising (CO₂): mechanisms and environmental interactions. *Plant, Cell and Environment* 2007 30, 258-270
- [76] Leakey, A. D. B., Ainsworth, E. A. et al. Elevated CO₂ effects on plant carbon, nitrogen, and water relations; six important lessons from FACE. *Journal of Experimental Botany* 2009 60, 2859-2876
- [77] Long, S. P., Ainsworth, E. A. et al. Food for thought: Lower-than-expected crop yield stimulation with rising CO₂ concentrations. *Science* 2006 312, 1918-1921
- [78] Poorter, H. and Navas, M. L. Plant growth and competition at elevated CO₂: on winners, losers and functional groups. *New Phytologist* 2003 157, 175-198.
- [79] Rogers, A., Ainsworth, E. et al. Will elevated carbon dioxide concentration amplify the benefits of nitrogen fixation in legumes? *Plant Physiology* 2009 151, 1009-1016.
- [80] Stiling, P. & Cornelissen, T. How does elevated carbon dioxide (CO₂) affect plant-herbivore interactions? A field experiment and meta-analysis of CO₂-mediated changes on plant chemistry and herbivore performance. *Global Change Biology* 2007 13, 1823-1842.
- [81] Taub, D., Miller, B. et al. Effects of elevated CO₂ on the protein concentration of food crops: a meta-analysis. *Global Change Biology* 2008 14, 565-575.
- [82] Ozaki Shoichiro. Synthesis of anti-ageing reagent: Sulfo disaccharide co-working with anti-aging gene. *Archeves of Medicines*. 2015; 7: 6-17.
- [83] Ozaki Shoichiro. Sulfo disaccharides co-working with Klotho. Studies on structure, structure activity relation and function. *World J of Pharmacy and Pharmaceutical Sciences*. 2015; 4: 152-175.
- [84] Ozaki Shoichiro. Glucosamine Derivatives Sulfo disaccharides co-working with Klotho. *J. Nutrition and Food Sci*. 2015; 5: 416.
- [85] Ozaki Shoichiro. Nutrition for good health, anti-aging and long life. Hyaluronic acid, glucosamine and chondroitin. *Maternal and Paediatric Nutrition Journal*. 2015; 1: e1
- [86] Ozaki Shoichiro. Food containing hyaluronic acid and chondroitin is essential for anti-aging International. *J of Aging & Clinical Research* 2016 1: 101.
- [87] Ozaki Shoichiro. Toward anti-aging and long life. *Jacobs Journal of Physiology*. 2016; 2(1): 12.
- [88] Ozaki Shoichiro. Secret of anti-aging: Anti-aging food containing glucosamine, hyaluronic acid and chondroitin. *Jacobs Journal of Physiology*. 2016; 2(1): 13-17.
- [89] Ozaki Shoichiro. Chemical approach to signal transduction by inositol tris-phosphate. *Bioengineering & Biomedical Science*. 2014; 4.
- [90] K. F. Boersma, H. J. Eskes, E. W. Meijer, and H. M. Kelder Estimates of lightning NO_x production from GOME satellite observations *Atmos. Chem. Phys.* 2005, 5, 2311–2331, www.atmos-chem-phys.org/acp/5/2311/ SRef-ID:
- [91] Allen, D. J. and Pickering, K. E.: Evaluation of lightning flash rate parameterizations for use in a global chemical transport model, *J. Geophys. Res.*, 2002 107, 4711, doi: 10.1029/2002JD002066
- [92] Beirle, S., Platt, U., Wenig, M., and Wagner, T.: NO_x production by lightning estimated with GOME, *Adv. Space Res.* 2004, 34, 793–797
- [93] Boccippio, D. J.: Lightning Scaling Relations Revisited, *J. Atmos. Sci.* 2002, 59, 1086–1104