

## Stop of NOx elimination and stop of wast water purification are easy methods to protect global warming

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### Abstract

Fossil fuel burn releasing CO<sub>2</sub> and heat. If we can compensate the generation of CO<sub>2</sub> and heat of burning with the absorption of CO<sub>2</sub> and heat by CO<sub>2</sub> assimilation, global warming will be protected. To promote CO<sub>2</sub> assimilation, supply of nutrient N and P is essential. 14.4 billion tone NO<sub>x</sub> is produced when 140 billion fossil fuel is burned. Many governments are eliminating NO<sub>x</sub> and NP in drainage as pollution substances. But NO<sub>x</sub> and NP in drainage are promotor of CO<sub>2</sub> assimilation, fertilizer of plant growth, promotor of CO<sub>2</sub> fixing. By elimination of these promotors, CO<sub>2</sub> assimilation is retarded and CO<sub>2</sub> fix is retarded. Fish production is retarded. 142 billion tone CO<sub>2</sub> is increasing each year. NO<sub>x</sub> elimination is giving bad effect on electricity price, fish production , GDP growth rate. We must stop elimination of NO<sub>x</sub> and stop wast water purification, to protect global warming .

### Key words

NO<sub>x</sub>, NO<sub>x</sub> elimination, wast water purification, , global warming, , plankton

### Introduction

Much carbon dioxide is released by the burning of much fossil and global warming is progressing. Reduction of carbon dioxide is most important for the protection of global warming. To reduce carbon dioxide, promotion of carbon dioxide assimilation is best method to reduce carbon dioxide.

To promote carbon dioxide assimilation, supply of nitrogen fertilizer and phosphorous fertilizer is essential. About 14.4 billion tone nitrogen oxide NO<sub>x</sub> ( 1/25 of produced carbon dioxide 360 billion tone ) is produced in the world . Therefore NO<sub>x</sub> is most abundant nitrogen fertilizer. About 50 billion tone excreta is produced in the world., Excreta is most abundant nitrogen and phosphorous fertilizer. These NO<sub>x</sub> and excreta are promotors of carbon dioxide assimilation. NO<sub>x</sub> and excreta promote the growth of plant and plankton. Plankton is playing most important role for fixing of CO<sub>2</sub>. (Ref 1)

Many official of developed country consider NO<sub>x</sub> and excreta as pollution substance and established very strict law to eliminate NO<sub>x</sub> and to eliminate excreta.. Then CO<sub>2</sub> assimilation is retarded and CO<sub>2</sub> fix is retarded and CO<sub>2</sub> is increasing and global warming is progressing. I am insisting NO<sub>x</sub> elimination should be stopped. Wast water purification should be stopped (Ref 2-15)

CO<sub>2</sub> assimilation and CO<sub>2</sub> cycle 140 billion tone fossil is burned and 360 billion tone CO<sub>2</sub> and 14.4 billion tone NO<sub>x</sub> is produced in 2015. CO<sub>2</sub> concentration increased 2ppm in 2015.

Amount of CO<sub>2</sub> in the world is 28300 billion tone. CO<sub>2</sub> increasing 2 ppm every year.

Increase of CO<sub>2</sub> is  $28300 \times \frac{2}{400} = 142$  billion tone.  $360 - 142 = 218$  billion tone CO<sub>2</sub> is fixed in one year.

If we can fix 142 billion tone CO<sub>2</sub>, we can protect global warming.

I wish to propose my plan that if NO<sub>x</sub> elimination is stopped and if waste water purification is stopped global warming can be stopped.

### NOx is promotor of fish production

When I was a professor at Ehime University, in 1990, Ehime newspaper reported that waste water purification reducing Nori (sea weed) and fish production at Seto inland sea.

I wrote papers that NO<sub>x</sub> elimination and waste water cleaning should be stopped to promote fish production. Because fish contain much protein, nitrogen. Nitrogen must be supplied from NO<sub>x</sub>, and waste water (Ref 2-5)

NO<sub>x</sub> and excreta are hated as pollution substances. Many developed country like USA, Japan, Germany, United Kingdom France set up law to inhibit the release of NO<sub>x</sub> in the air. Then CO<sub>2</sub> assimilation is reduced remarkably CO<sub>2</sub> fix is reduced remarkably plant and plankton growth are reduced remarkably. Fish production of such country reduced remarkably. Some other country welcomed NO<sub>x</sub> and excreta as promotor of CO<sub>2</sub> assimilation. At these country plankton growth, grain growth are promoted .Fish production increased.

I will tell these at this paper. I have strong opinion that NO<sub>x</sub> elimination should be stopped.

Thousand papers are presented about toxicity of NO<sub>x</sub> and no paper indicating that NO<sub>x</sub> is fertilizer.

When we look at plankton. Thousand papers including 20 nature paper teach us that plankton and supply of NP are playing significant role for the control of climate, CO<sub>2</sub> assimilation, fish production. Plankton reduced 95 % CO<sub>2</sub> concentration to 250ppm in 30 billion years

I am insisting NO<sub>x</sub> elimination should be stopped, NO<sub>x</sub> elimination law should be eliminated. NO<sub>x</sub> should be released to air as it is. Waste water should be released as it is to ocean, field and forest to promote CO<sub>2</sub> assimilation to help fix of CO<sub>2</sub>

When we look at fish production of world (Ref 6-15). China produced 79.38 million tons fish and Indonesia produced 22.21million tons fish. India 18.11 Vietnam 6.21 million t fish. They use NO<sub>x</sub> and excreta as it is for production of plankton and fish. Therefore fish production increased remarkably. China industry is promoted. As the result production of CO<sub>2</sub> and NO<sub>x</sub> increased rapidly and production of fish increased rapidly.

### Fish production of Japan

Japan was producing 12 million tone fish in 1970. Top in the world. But fish production decreased to less than 5 million tone. Since NO<sub>x</sub> elimination law, waste water purification law were set up.

### Fish Nori production at Seto Inland Sea (Ref 2-5)

I was born at sea side of Seto inland sea at Kurashiki in 1930. Seto inland sea is surrounded by Chugoku, Shikoku and Kyushu. This district is famous as no thunder district. Supply of NO<sub>x</sub> by thunder(Ref 16,17) is not done. Seto inland sea was filled with fish and small fishing boat. This sea provided 0.5 million tone fish and 100 billion sheets of Nori( sea weed to make norimaki). These fish and Nori were main protein source of 20 million persons around this district. But since NO<sub>x</sub> elimination law was established at 1980, fish production decreased to 1/10, 0.05 million tone. Nori production stopped. The bottom of sea was filled with eel grass (amamo) before 1970. But the bottom of the sea become desert and no sea weed now. No plankton assimilation, No heat absorption. Seto inland sea can fix 7 million tone CO<sub>2</sub> if NO<sub>x</sub> elimination and waste water purification are not carried out.

### Phosphorous is essential for fixing CO<sub>2</sub>

Phosphorous P is important atom constituent of plants and animals.(Ref 18) Phytic acid (inositol hex phosphate)calcium salt is contained in every surface of grain such as rice, wheat and corn about 30 % . Plant makes glucose by photosynthesis from CO<sub>2</sub> and water. Some of glucose is converted to inositol. Inositol is converted to phosphoinositide's (PIP2) and phytic acid. PIP2 is converted to IP3 and diacylglycerol. These two compounds are essential for signal transduction of plant (Ref 22), because P is an essential atom to make DNA. The seed store phosphorous atom as a store so that even when seed germinate at no phosphorous land. To make this phytic acid, plant absorb corresponding phosphorous at harvest time. Lack of phosphorous give poor harvest.

### How phosphorous is supplied. There are two routes to supply phosphorous to plant.

1.Phosphorous in drainage: About 60 thousand tone phosphorous was contained in drainage in Japan. By using this phosphate, 60 thousand x 25 = 1500 thousand tone CO<sub>2</sub> can be fixed. And 1500 thousand tone plankton can be produced and fish 160 thousand tone will be produced. Animal eat food containing P and exclude excreta containing P. When toilet disposal and drainage are sent to excreta disposal treatment plant. P in water was made to water insoluble mass, mixed with cement and made to concrete and buried in soil. Plant cannot use P any more. This process use huge electricity and consume much fossil fuel.

Around two hundred thousand tone fossil and producing five hundred thousand CO<sub>2</sub>. For the elimination of one phosphorous, about 25 carbon fossil is used and about 25 CO<sub>2</sub> is produced. One phosphorous can fix 25 CO<sub>2</sub> the phosphorous elimination process should be avoided. Because excreta is best food for plant. Ocean dumping, field dumping and forest dumping of excreta are recommended to increase the concentration of nutrient phosphorous .

2. Phosphorous: Ideal concentration for cell growth experiment P 88 μg is in 1 little sea water. Concentration of N(nitrogen and P(phosphorous) of surface sea water at 100km south of Muroto(South corner of Shikoku) is 1 μg/l, 0.3 μg/l. respectively. These value are 1/ 20000, 1/2000000 of ideal concentration for cell growth experiment. N 33 μg /l , P 2.9 μg /l at 1000m deep sea, water are 30 times and 10 times rich in nutrition than that of surface sea water at the same spot. Global warming produce high temperature of sea water, evaporation of water and consequent many typhoon, hurricane. These typhoon and hurricane agitate surface sea water (poor nutrient) with deep sea water (rich nutrient). Plankton growth infinitely if enough nutrient N and P are present. Many hurricane attacking east south part of United State producing nutrient rich surface sea water and this sea current goes up to north producing much plankton and much CO<sub>2</sub> and heat absorption and producing much fish. . Coral bleaching is reported at Sekisei Reef Lake at Okinawa, Japan in Sept 2016. And Great Barrier reef in June 6 2016. Because no typhoon approach at this district, agitation was not enough to replace nutrient deep sea water (contain much nutrient nitrogen, phosphorous) with poor nutrient shallow sea water causing the no growth of zooxanthella .

### NO<sub>x</sub> elimination should be stopped

Influence of NO<sub>x</sub> elimination on GDP growth rate (Ref 14) CO<sub>2</sub> assimilation is most important reaction for all biology on earth. NO<sub>x</sub> is a promotor of plant growth, CO<sub>2</sub> assimilation. Therefore NO<sub>x</sub> elimination give great damage on growth of plant. Plankton. Production of fish, grain, grass and tree and GDP (Ref 15) the elimination reaction of NO<sub>x</sub> is a reaction of NO<sub>x</sub> with ammonia. By this reaction, precious fertilizer is destroyed by other precious fertilizer. This is tremendous loss.

1. The country who do not do NO<sub>x</sub> elimination like China (NO<sub>x</sub> c=1.6g/kWh,GDP =6.92%), India NO<sub>x</sub>con=1.6 g/kWh,GDP=7.10%,) S Korea (NO<sub>x</sub> c=1.6g/kWh, GDP= 2.8%) can boost high GDP growth rate

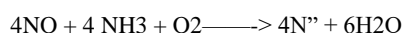
2.The countries who do this reaction NO<sub>x</sub> elimination like USA(NO<sub>x</sub>c=0.5g/ kWh,GDP= 1.38%),Japan (NO<sub>x</sub>c=0.1g/kWh. GDP=1.01%)Germany,(NO<sub>x</sub>c=1.0g/kWh,GDP=1.85%),UK(NO<sub>x</sub>c=1.3g/kWh, GDP=1.8%), Italy (NO<sub>x</sub>c=0.5g/kWh, GDP=0.88%)are consuming much fossil fuel for elimination of NO<sub>x</sub>. Therefore electricity price is higher than no NO<sub>x</sub> elimination country. And CO<sub>2</sub> assimilation is retarded. Agriculture and fish industry are retarded. Japan did no NO<sub>x</sub> elimination before 1970, GDP was 8.0 in 1970 .Japan started NO<sub>x</sub> elimination in 1980, then plankton production was destroyed and 13 million tone fish was not produced. About 1 million fisherman lost job. As fish price is 3000 dollar /t. Then 3000x 13 million dollar= 390 billion dollar were lost. Fish price increased 5 times. Average life in Japan: male is 80.50 (third), female is 86.83 (top in the world). The author believe that long life of Japanese come from the habit to eat fish containing glucosamine , hyaluronic acid and chondroitin as a main protein source (Ref 19,20). Japanese cannot eat fish as before. Fish/Meat ratio of Japanese changed from 99/1 in 1945 to 30/70 in 2017. Therefore Japanese may lose long life record soon.

Effect of NO<sub>x</sub> elimination on electricity price, fish production and GDP is shown in table 1

Country	CO2 em bill t	NOxcon g/kWh	NOxe mill t	electricity billkWh	price c/kWh	Fish mill t	CO2fplankt on bill t	GDP growth rate
China	106.4	1.6	984	154220	1.6-4.5	79.38	19.8	6.92
India	24.5	1.6	86	13920		10.11	2.0	7.10
S Korea	5.8	1.6	34.2	5380	8.1	3.33	0.083	2.8
USA	51.7	0.5	192	43670	12	6.05	0.50	1.48
Japan	12.5	0.1(2016) 1.6(1970)	0.4 64.2	10080	24	4.64(2016) 13.00(1970)	0.11(2016) 3.25(1970)	-0.76 8.0
Canada	5.5	1.3	52.4	6520	8.1	1.05	0.25	1.40
Germany	7.7	1.0	24.4	6270	32	0.29	0.07	1.85
France	3.2	1.9	3.8	5570	19	0.91	0.18	1.20
UK	4.0	1.3	18.4	3560	15.4	0.91	0.002	1.8
Italy	3.5	0.5	5.6	2880	28	0.34	0.008	0.88
Russia	17.6				17	4.61	1.15	-0.22

**Table 1**

Some country USA, Japan, Germany UK Italy hating NOx as pollution gas and eliminating by ammonia



To kill one fertilizer with one other fertilizer is tremendous waste of natural resources. This elimination process gives tremendous damage on plant growth, production of grain, fish, economics, electricity price and DGP. Grain production is retarded. Electricity price increased. DGP increase rate become low.

Many countries like China welcome NOx as fertilizer. CO2 assimilation is promoted. CO2 fix is promoted. Plankton growth is promoted. Fish, grain production are promoted. Electricity price is low. DGP increase rate is high

In the process of burning, nitrogen oxide is formed. Amount of nitrogen oxide is around 1/25 of carbon dioxide. 360/25 = 14.4 billion ton. NOx is produced. Effective use of this NOx is key point. Fish production increased dramatically at the country who use NOx. On the contrary, about half of the country who eliminate NOx and only 280 billion tone CO2 is fixed. 142 billion Tone CO2 is remaining and Global warming is progressing.

If elimination of NOx is stopped at all country, 14.4x 25= 360 billion tone CO2 can be fixed. And global warming will be stopped.

Japan is emitting 12.5 billion tone CO2 and 0.5 billion tone NOx. CO2 res is 4.95 billion tone. 1 billion tone CO2 is emitting for waste water purification. If these treatment is stopped, emission of 2 billion tone CO2 is saved. And concentration of N, P increase and CO2 assimilation is accelerated and 5 billion tone CO2 will be fixed by 0.5 billion tone NOx. Therefore 1+1+ 5= 7 billion ton CO2 can be decreased. 7 billion tone CO2 is 2.05 over the responsible 4.95 billion tone. To fit Paris agreement.

## Summary

By stopping of NOx elimination and by stopping of waste water purification, we can protect global warming.

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