

Effect of NO_x Elimination on Electricity Price, Fish Production, GDP and Protection of Global Warming

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Abstract

Much NO_x is produced when fossil is burned. Many governments set up the law to eliminate NO_x, by the reason NO_x is pollution gas and not good for health. And also Drainage NP are eliminated. Some other many governments are welcoming NO_x as fertilizer for plant and encouraged the use of NO_x and Drainage NP for plankton growth and getting many fish. I could find the data that how much NO_x is eliminated at 11 countries. The countries who do not do NO_x elimination and do not do NP elimination are getting many fish, fixing much CO₂ and electricity price is low and producing many product and increasing GDP. The country who do NO_x elimination is decreasing fish production and increasing CO₂ emission, promoting global warming and electricity price is high and GDP growth rate is low. Therefore NO_x elimination and Drainage NP elimination should be stopped for the promotion of CO₂ assimilation, for the production of grain and fish, and for the elevation of GDP growth rate.

Keywords: NO_x; NO_x elimination; Protection of global warming; Electricity price; Fish production, GDP

Introduction

The earth is warmed by the fossil fuel burning releasing CO₂ and heat. The plant is growing by CO₂ assimilation absorbing CO₂, producing carbohydrate and O₂. To promote CO₂ assimilation, supply of nutrient NP is essential. Much NO_x is produced as by product of burning. NO_x is a nitrogen fertilizer and promotor of CO₂ assimilation. But NO_x is hated as pollution gas. Many governments set up law to eliminate NO_x in burned gas and forced to eliminate NO_x using ammonia. This reaction is the reaction of one fertilizer with one other fertilizer. This gives tremendous loss of natural resources. NP in drainage is also hated as pollution substance and NP elimination is carried out at many country. Elimination of NO_x and NP are decreasing CO₂ assimilation, decreasing plant growth and promoting global warming. I am insisting that NO_x and NP are critically important compounds and the elimination of NO_x and NP should be stopped at previous papers [1-6].

In this paper, I wish to show how much damages are given to the country who do NO_x, NP elimination by comparing the effect of NO_x elimination on electricity price, fish production, CO₂f plankton (CO₂ fixed by plankton) and GDP (Gross Domestic Product) of 11 countries.

Elimination of NO_x and Elimination of Nutrient N, P

The earth is warmed by the increase of carbon dioxide. Carbon dioxide 360 billion tone was produced in 2016. Carbon dioxide 218 billion tonne was fixed in 2016. This mean 142 billion tonne CO₂ increased. Paris agreement ask us to reduce carbon dioxide emission. And no increase of carbon dioxide. Same amount of CO₂ must be fixed as emission.

Nature has system to change N₂ to nutrient nitrogen. By high temperature at fireplace for cooking, burning of wood [1,2], thunder [4-6]. NO_x is produced from N₂ and O₂, NO_x is a gift from nature [6]. We should not against nature. We should use NO_x as it is. In 2016 fossil 140 billion tonne was burned and CO₂ 360 billion tonne and NO_x 14.4 billion tonne are produced. If we use all NO_x for the fixing of CO₂, we can fix 14.4 × 25 = 360 billion tonne CO₂. As C/N ratio of plant is around 5/1-50/1 (average 25/1) and one molecule of NO_x can fix 25 molecule of CO₂.

I wish to insist that NO_x elimination should be stopped. Because

toxicity of NO_x is not so serious when it is released at no person district. NO_x is essential for plant to grow. NO_x is essential for the production of grain and fish for the promotion of health and long life.

I am now showing how NO_x elimination gave significant effect on electricity price, fish production, CO₂f plankton and GDP growth rate. CO₂ em (CO₂ emission), NO_x con (NO_x concentration in exhaust gas), electricity, price, fish, CO₂f plankton, GDP of 11 countries are shown in Table 1.

NO_x Concentration of Many Countries

When fossil is burned, carbon dioxide is emitted and about 1/25 NO_x of produced CO₂ is also produced as by product. Concentration of NO_x in exhaust gas at the electricity plant is around 1.6 g/1 kWh. Some country do NO_x elimination with ammonia and some country do not do NO_x elimination. Do NO_x elimination or do not do NO_x elimination give significant influence on economy, electricity price, import, export, agriculture, fish industry and GDP.

China emitted 106.4 billion tone CO₂. The content of NO_x in exhaust gas is 1.6 g/kWh electricity generation. As electricity generation of China is 154220 billion kWh. Then NO_x emission of China is 2 × 1.6 × 154220 bill tone = 984 million tone. About half of fossil is burned at electricity plant. Other half is burned at other furnace like iron work and chemistry works. Therefore double of NO_x is produced at all furnace. Electricity price at China is 1.6-4.5 c/kWh.

Japan emitted 12.5 billion tone CO₂. Japan did not do NO_x elimination before 1970 and NO_x content was 1.6 g/kWh and 2 × 1.6 × 10080 = 64.2 million tone NO_x was released. Since 1980, Japan

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Country	CO ₂ em bill t	NO _x con g/ kWh	NO _x e mill t	electricity bill Kwh	price c/k Wh	Fish mill t	CO ₂ fplankton 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	7.1
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	0.5	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)	1.03 8
Canada	5.5	1.3	52.4	6520	8.1	1.05	0.25	1.4
Germany	7.7	1	24.4	6270	32	0.29	0.07	1.85
France	3.2	1.9	3.8	5570	19	0.91	0.18	1.2
UK	4	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

Note: CO₂ em(CO₂ emission), NO_x con(NO_x concentration in exhaust gas) electricity, price, fish, CO₂fplankton(CO₂ fixed by plankton), GDP growth rate %.

Table 1: CO₂ em, NO_x con NO_x e, electricity, price, fish, CO₂fplankton, GDP of 11 countries.

government set up very strict law to eliminate NO_x and Drainage NP. Then NO_x concentration in exhaust gas decreased to 0.1 g/kWh and NO_x emission decreased to 0.4 billion tone.

China 1.6 g/kWh, USA 0.5, India 1.6, Japan 1.6 in1970, 0.1 in 2016, Canada 1.3, Germany 1.0, France 1.9, S Korea 1.6, UK 1.3, Italy 0.5. China produce NO_x 984 million tone, USA produce 192 million tone, India 86 million tonne, Japan 0.4 million tonne, Canada 52.4 million tonne, Germany24.4 million tonne, France 38 million tonne, S.Korea 34.2 million tone, UK 18.4 million tonne, Italy 5.6 million tone.

As 1 molecule of NO_x can fix 25 molecule of CO₂, China can fix 984 × 25 × 44/30=360.8 billion tonne CO₂, USA can fix 192 × 25 × 44/30=70.4 billion tonne CO₂, India can fix 86 × 25 × 44/30=31.5 billion tonne CO₂. Japan can fix 0.4 × 25 × 44/30=1.47 billion tonne CO₂. Canada can fix 52.4 × 25 × 44/30=19.1 billion tonne CO₂. Germany can fix 24.4 × 25 × 44/30=8.94 billion tonne CO₂. France can fix 38 × 25 × 44/30=13.93 billion tonne CO₂. S.Korea can fix 34.2 × 25 × 44/30=12.5 billion tonne CO₂.UK can fix 18.4 × 25 × 44/30=6.74 billion tonne CO₂. Italy can fix 5.6 × 25 × 44/30=2.05 billion tonne CO₂.

Electricity Price of many Countries

When we look at electricity prices of many countries, High electricity price country: Japan 20-24 c/kWh, Germany 32 c/kWh, France 19 c/kWh, UK 15.4 c/kWh, Italy 28 c/kWh At these country, NO_x elimination is carried out. Most severe NO_x elimination country is Japan. NO_x concentration is 0.1 g/kWh And electricity price is high as 20-24 c/kWh.

Low electricity country: China 1.6-4.5 c/kWhD. S.Korea 8.4 c/kWh.

Country who do not do NO_x elimination can provide low price electricity Low price country is increasing CO₂ assimilation, CO₂ fixing, food production.

Low price electricity is very favorite for the production of good and can export many good to high electricity price country. For example most electricity generation panel is produced in China and exported to all over the world. Then China is increasing GDP. High electricity price country is doing NO_x elimination by ammonia. By elimination of this NO_x elimination process, we can reduce 1billion tone CO₂ production. Japan eliminate NO_x completely. Therefore electricity price 20-24 c/kWh is 2.5 times higher than that of S Korea 8.4 c/kWh. Even through both country are generating electricity by importing fossil from abroad. Construction cost plus fossil cost are added for elimination of NO_x.

Then electricity price increase. Many industrial company of Japan build factory at outside of Japan.

Fish Production and CO₂ Fix by Plankton

When we look at fish production of world. China emitted 105.4 Billion tonne CO₂ and 492 million tonne NO_x. They do not eliminate NO_x and use NO_x as promotor of plankton growth. 79.38 million tonne fish is produced and 19.8 billion CO₂ is fixed. India produced 10.11 million tonne fish. Japan produced 13 million tone fish in 1970. But since the elimination of NO_x, fish production decreased to 4.64 million tone. CO₂ fix by plankton 3.25 billion tonne (1/3 of total CO₂ emission) in 1970 decreased to 0.11 billion tone in 2016.

When we look at fish production region of Japan, west side of Kyushu, Nagasaki, Saga, Fukuoka, Kagoshima prefecture. West of these prefecture is East China sea. Large amount of nitrogen is provided by Yangtze River and concentration of East China sea is very high and large amount of plankton is growing and much fish is produced at this sea. East China sea is fishing center of the world now.

Influence of NO_x Elimination on GDP Growth Rate

CO₂ assimilation is most important reaction for all biology on earth. NO_x is a promotor of plant growth, CO₂ assimilation Therefore NO_x elimination give great damage on growth of plant. plankton. production of fish, grain, grass and tree. The elimination reaction of NO_x is a reaction of NO_x 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_x elimination like China (NO_x c= 1.6 g/kWh, GDP=6.92%), India NO_x con=1.6 g/kWh, GDP=7.10%), S Korea (NO_x c=1.6 g/kWh, GDP= 2.8%) can boost high GDP growth rate.

2. The countries who do this reaction NO_x elimination like USA (NO_xc=0.5 g/hWh, GDP=1.38%), Japan (NO_xc=0.1 g/kWh. GDP=1.01%) Germany, (NO_xc=1.0 g/kWh, GDP=1.85%), UK (NO_xc=1.3 g/kWh, GDP=1.8%), Italy (NO_xc=0.5 g/kWh, GDP=0.88%) are consuming much fossil fuel for elimination of NO_x. Therefore electricity price is higher than no NO_x elimination country and CO₂ assimilation is retarded. Agriculture and fish industry are retarded. Japan did no NO_x elimination before 1970, GDP was 8.0 in 1970. Japan started NO_x 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. 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.

3. The country whose electricity price is low can produce good with low price Then producing industry progress. And DGP growth rate become higher.

The country do not do NO_x elimination. 1. Need not fossil to eliminate NO_x 2.Can have enough NO_x and can promote CO₂ assimilation. 3 Electricity price is low. 4. Can produce much fish and grain. 5. Can get high GDP growth rate. China 6.92%, India 7.10%. The country do NO_x elimination show low GDP: USA 1.48%, Germany 1.85%, UK 1.8%, Japan 1.03%, Italy 0.88%.

Protection of Burn Out of Fossil Fuel

Since industrial revolution, mankind is using large amount of fossil fuel for manufacturing of good, iron, aluminum, plastic, fertilizer and for transportation. Global warming comes from over burning of fossil. Fossil fuel is fossil of plants, oil is fossil of plankton, coal is fossil of tree, made by CO₂ assimilation from CO₂ and water in 45 billion years. Mankind is now using up these fossil fuel in 500 years. Around half of produced fossil fuel is already used. And remaining estimated amount of buried fossil fuel: oil is 1730 billion tone, 42 years, natural gas is 2760 billion tone, 60 years, coal is 9090 billion tone, 132 years, buried

uranium is 124 years . It is said that oil production reaches maximum in 2037 (earlier in 2026, latest in 2047 and decrease quickly). When fossil is burned out after 500 years, in 2518, no global warming will happen. We must consider how can we live civilized life without fossil. How can we warm up or cool down the room, drive car, air plane, agriculture machine, fishing boat. How can we generate electricity. From what can we make plastic and solar cell module. Fossil fuel is limited very very precious treasure for our mankind. We must consider how to save the limited precious fossil fuel. We should not use precious fossil fuel for the elimination of NO_x, N,P.

Conclusion

CO₂ assimilation is promoted by NO_x and NP. Those country who use NO_x and NP effectively can produce electricity with low price and can get priority at manufacturing industry and can produce much food and high GDP growth rate. We should stop NO_x and NP elimination.

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