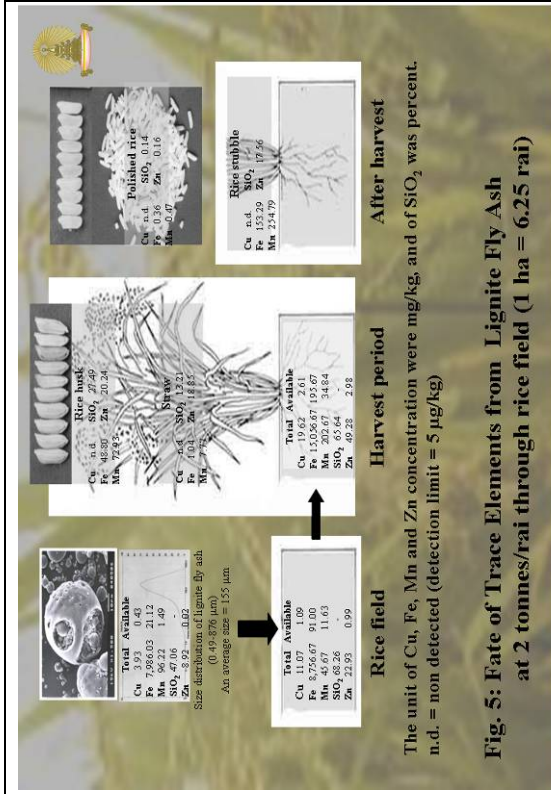
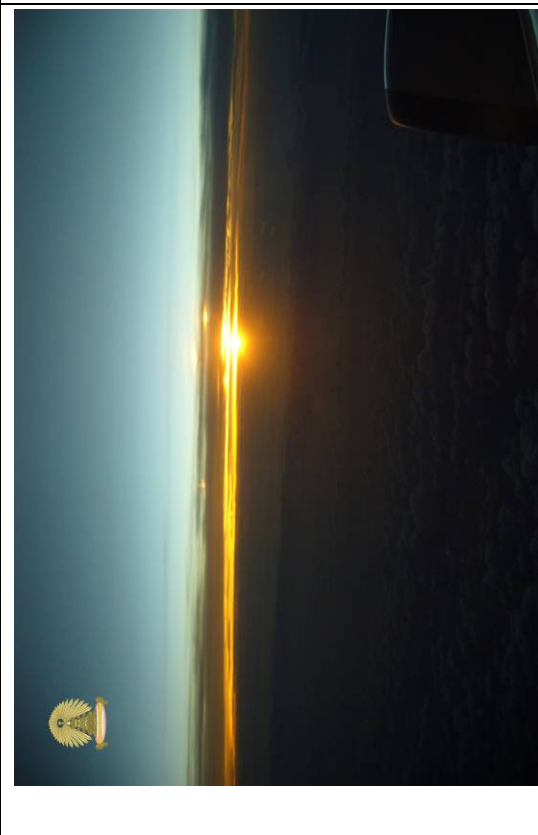
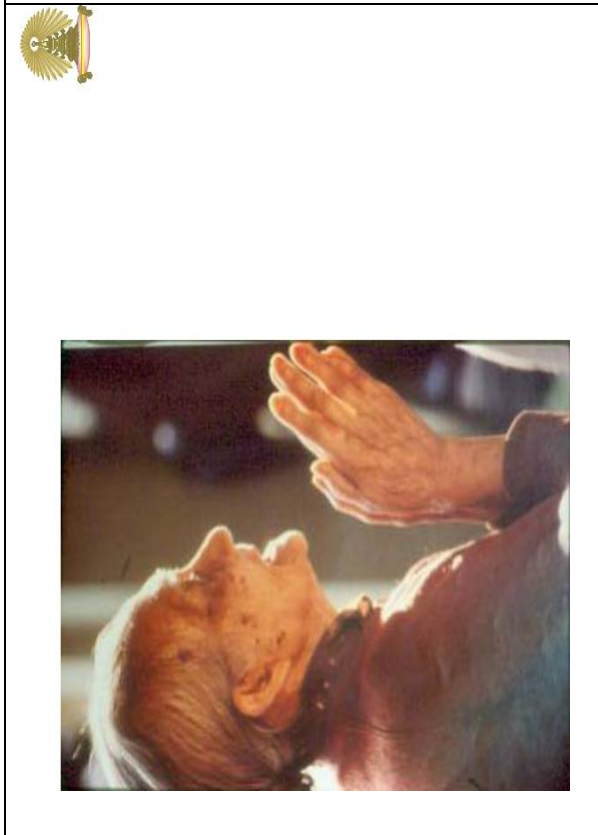
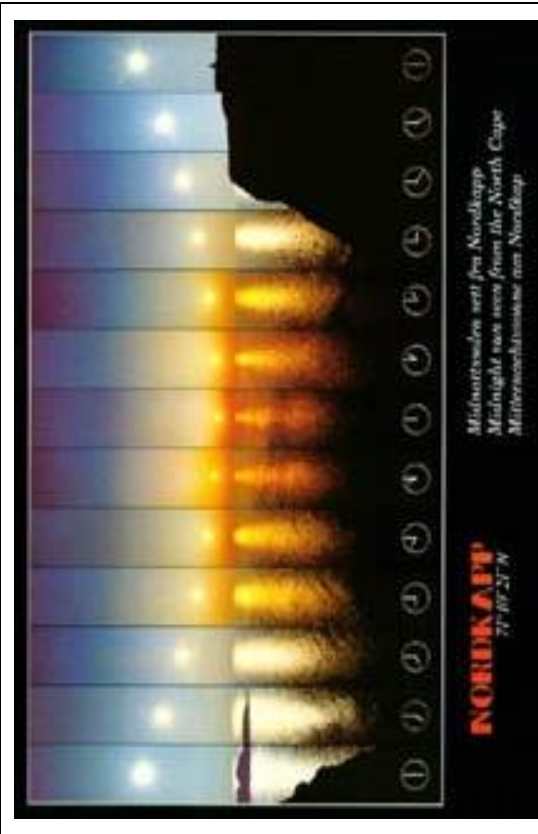

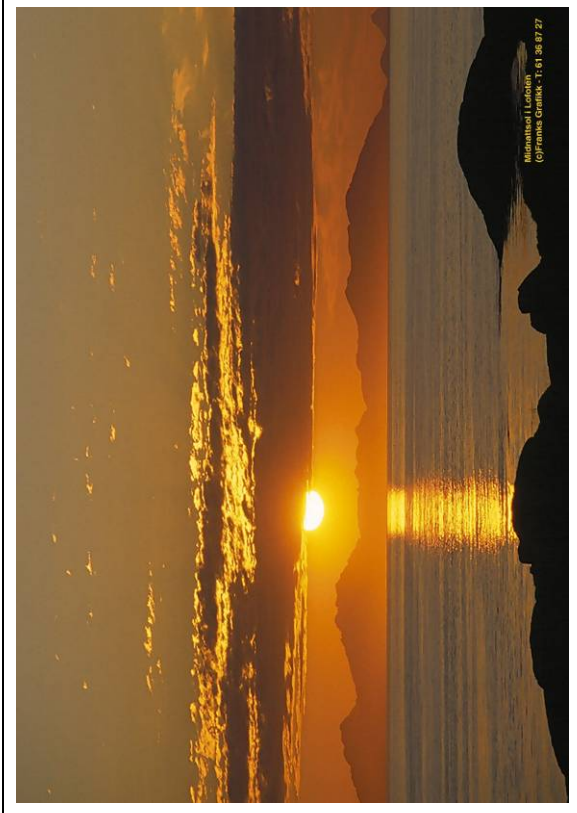


## Limitation of Lignite Fly Ash Utilization









We can make differences to our environment

**THANK YOU**



We can make differences to our environment



### Consequence: Water Quality

\* Waste Water Quality in Drainage System: The high content of organic substance, heavy metal (As, Cd, Cr, Co, Pb, Hg, Ni, Zn), bacterium

COO	BOD	DO	Cofiform
500 - 1.000 mg/l	300 - 600mg/l	< 1 mg/l	2.400 - 4.600/ml

- \* Ground Water Quality, Surface Water Quality in Lakes, Rivers: are polluted by salt, alum/have high content of suspended solid
- \* Surface Water Quality in River mouths: is contaminated by oil, solid waste, radioactive substance and chemical.



Surface Water Pollution

Ground Water Pollution

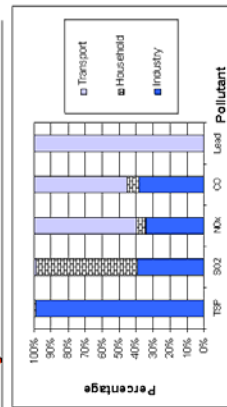
- \* Domestic Waste Water from House-holds, Hotels, Restaurants, Hospitals: 130.000 - 150.000m<sup>3</sup>/day.
- \* Industrial Waste Water from factories: 18.000 - 20.000m<sup>3</sup>/day.

\* Basing on population increasing and socio-economy development, by the 2020:

- Forecasted Domestic Waste Water will be about 250.000m<sup>3</sup>/day
- Forecasted Industrial waste water will be about 90.000m<sup>3</sup>/day

### Consequence: Air Quality

Ratio of Exhaust Fumes Eliminated by Pollution Sources (Transportation; Household; Industrial production)



#### Air Quality in HaiPhong Urban

Parameter	SO <sub>2</sub> (mg/m <sup>3</sup> )	NO <sub>x</sub> (mg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	CO (mg/m <sup>3</sup> )	TSP (mg/m <sup>3</sup> )
Standard Level	0.35	0.2	30	30	0.3
Công Chả Tiết	0.2	0.02	2.4	2.4	0.21
Số 1/Đầu	0.15	0.03	1.6	1.6	0.54
Số KH/Chợ và MT	0.08	0.03	1.1	1.1	0.18
Tr. ĐH Hàng Hải	0.08	0.05	2.8	2.8	0.28
Tr. Tiểu học Đông Hải	0.05	0.02	2.1	2.1	0.20
Tr. THCS Quán Trơn	0.07	0.04	2.7	2.7	0.3
Viện NC Hải Sản	0.22	0.03	2.2	2.2	0.13

### Industrial Production

Almost of industrial factories have operated for 30 - 40 years, have backward technology and old production line, have not exhaust fumes treatment, and eliminate directly exhaust fumes to the air.



### Construction

Due to urbanization and industrialization: Demolishment, dig and building often take place, so environment protection did not meet the standard. Consequently, dust from construction sites contaminate the air environment.

### Cooking

Many House-holds in Urban/ Almost House-holds in Rural use firewood, charcoal for cooking everyday. → Pollutant and Smoak due to cooking contaminate the air environment.

### Air Pollution

### Transportation

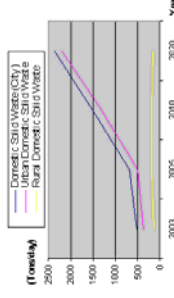
Due to urbanization and industrialization: Means of transport such as car, motorbike, ship...are increasing quickly. While motorway system do not keep up with this increasing. → Vehicle Emission, Dust and Pollutant contaminate seriously the air environment.



### Solid Waste (Normal Solid Waste - Hazardous Waste)

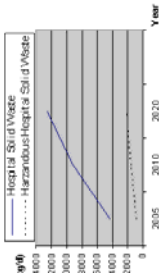
#### Industrial Solid Waste:

- \* Industrial Solid Waste discharging from factories including of harmful, Hazardous solid waste, was not classified/ was disposed to the dumping site
- \* Industrial Solid Waste discharged to environment: 75 T/day (2%)
- \* Hazardous Solid Waste (heavy metal, industrial oil, persistent substance...)
- \* Collected Industrial Solid Waste: 90% Industrial Solid Waste
- \* Forecasted Industrial Solid Waste by 2020 will be 980 T/day



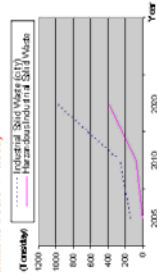
#### Hospital Solid Waste:

- \* There are 10 hospitals in HaiPhong urban.
- \* Hospital Solid Waste discharging from hospitals: 4-5 Tons/day (10% Hazardous solid waste such as syringe, viscera, medical waste...)
- \* Hospital Solid Waste was disposed with Domestic and Industrial Solid Waste to dumping site
- \* Forecasted Hospital Solid Waste by 2020 will be 12-13 T/day (2 tons hazardous waste)



#### Domestic Solid Waste:

- \* Domestic Solid Waste discharging from house-holds, hotels, restaurants... (include bottles; cans; plastic bag; leather; food; garbage...) was collected, disposed to dumping site
- \* Domestic Solid Waste: 1.300 - 1.600 T/day (average 1 kg garbage/person/day). In which 1,2% Hazardous solid waste
- \* Collected Domestic Solid Waste: 80% Domestic Solid Waste
- \* Forecasted Domestic waste by 2020 will be 2.400 T/day (average 1.3 kg garbage/person/day)



Industrial Solid Waste (90% Collected)



## Environment Improvement Plan (2010 – 2020)

- **Urban Water Supply Project (2011-2015)**, total investment capital: 982 million USD (Improve central water treatment plant; Improve water supply system)
- **Urban Waste Water Treatment and Sewage Project (2011-2020)**, total investment capital: 334,6 million USD (Improve sewage system; Build waste water treatment Plant)
- **Solid Waste Treatment and Collection Project (2011-2020)**, total investment capital: 475 million USD
- **Environment and Sanitation Project (2010-2013)**, total investment capital: 32,2 million USD

\* The sources of capital investing for Project will be supplied by Central budget, HP budget, ODA (JIBIC), ODA (Korea), Enterprises (private sector)

## Expectations

Co-operation, Assistance, Consultancy and Transfer the advanced technique and experience:

- Improve the professional ability of governor office to manage environment
- Improve environmental monitoring system
- Improve community awareness of environment protection
- Apply Clean Development Mechanism, Cleaner Production for Industrial factories
- Apply Economic Methods to manage environment
- Treat, Collect, Classify and Recycle Solid Waste
- Treat Hazardous and Hospital waste by incineration method
- Statistic and Evaluate pollution sources in HaiPhong City

# Thank you for your attention!