
Beijing Air Flows & Impact on 2008 Olympics

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ENVS 662 – Green Design & City Planning



Agenda

- China's Economic Growth & Consequences
- Drivers of Air Pollution
 - Vehicles
 - Industrial Facilities
 - Geographic Location
- Action Plan & Olympic Bid
- Concerns from Athletes
- “Green Olympics” Test



Economic growth

- China has the 4th largest economy in the world
- Transition to a market-based economy over the past 3 decades
- Real GDP grow = 11.5% (vs approx. 3.5% in USA)
- Recent entrance into World Trade Organization (WTO)
 - Exports and FDI increased by more than 30%

Consequences of Growth

- China is the pollution capital of the world
- 2nd largest producer of GHG
- Home to 16 of the 20 most polluted cities in the world
- Air pollution has increased 50% in the past decade
- Health concerns ranging from cancer to birth defects



Automotive Emissions

- 26% increase a year in Chinese car ownership
- In 2006, Beijing had 2.46mm vehicles on the road
 - Expected to reach 3.5mm by 2008
 - More than 1,000 new cars a day!!!
- Besides GHG emissions, also resulting in high levels of lead in citizen's bloodstream



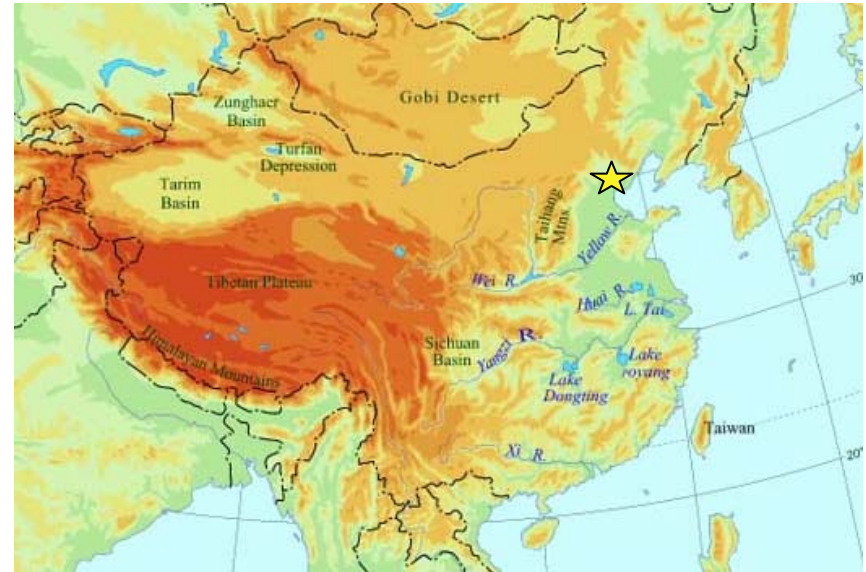
Industrial Facilities

- Infrastructure build out is reliant on coal-fired power
- The #1 emitter of CO₂, as well as SO_x & NO_x
- 2006 UNEP report revealed industrial pollution is same concentration as 2000
 - 3x what is considered safe by WHO



Geographic Location

- Beijing is surrounded by Mt. ranges to the west & north
- Dust storms from nearby deserts
- Neighboring industrial towns have *looser* environmental standards



Environmental Master Plan

- Developed in 1997 by Chinese gov't and WB
- Activities range from expanding natural gas pipeline to using renewables to relocating industrial parks
- Claim to have converted 90% of coal-based power plants (??)



2008 Olympic Bid

- Integrated Environmental Master Plan with Olympic commitments
 - Environmental education/awareness, environ. mgmt. systems, clean transportation, green design, green power procurement, tree planting, etc.
- On schedule with most initiatives except air pollution control



Athlete Concerns

- IOC Chairman might postpone certain events
- This February, 22 runners in HK Marathon were taken to the hospital (air related)
- World's #1 female tennis player announced fear of competing in Beijing Olympics



“Green Olympics”

- Beta testing temporary solutions to air pollution
- Replacing older buses and taxis
- Limiting traffic & shutting down factories days/weeks prior
 - Tested during 2001 World University Games
- Adopting EU emissions standards
- However, must ensure that efforts are sustainable!!



Sources

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