

# Project Progress of AIM/China: Emission Model

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## *Content*





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AIM/End-use of China: extension of target year to 2030

Beijing Study

## *Recent Progress of AIM-China*

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-  Extend target year from 2010 to 2030
-  Newly added technologies
-  Energy service scenarios
-  Revised parameters according to recent change  
in China

## *Sectors in AIM/End use of China*

| Sector             | Sub-Sector       | Simulation for 2010 | Simulation for 2030 |
|--------------------|------------------|---------------------|---------------------|
| Agriculture        |                  | v                   | 000                 |
| Industry           | Iron and Steel   | v                   | v                   |
|                    | Copper           | v                   | v                   |
|                    | Aluminum         | v                   | v                   |
|                    | Zinc&Lead        | v                   | v                   |
|                    | Cement           | v                   | v                   |
|                    | Glass            | v                   | v                   |
|                    | Brick            | v                   | v                   |
|                    | Lime             | v                   | v                   |
|                    | Ammonia          | v                   | v                   |
|                    | Ethylene         | v                   | v                   |
|                    | Soda Ash         | v                   | v                   |
|                    | Caustic Soda     | v                   | v                   |
|                    | Fertilizer       | v                   | 000                 |
|                    | Calcium          | v                   | 000                 |
|                    | Paper Making     | v                   | v                   |
|                    | Textile          | v                   | 000                 |
|                    | Casting          | v                   | 000                 |
|                    | Heat Treatment   | v                   | 000                 |
|                    | Forging          | v                   | 000                 |
|                    | Cutting          | v                   | 000                 |
| Other Industry     | v                | 000                 |                     |
| Energy Conversion  | Power Generation | v                   | 000                 |
|                    | Refinery         | v                   | 000                 |
| Transport          |                  | v                   | v                   |
| Commercial Sector  |                  | v                   | v                   |
| Residential Sector | Urban Resident   | v                   | v                   |
|                    | Rural Resident   | v                   | v                   |

## *New technologies: examples*

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### Transport:

Natural gas car

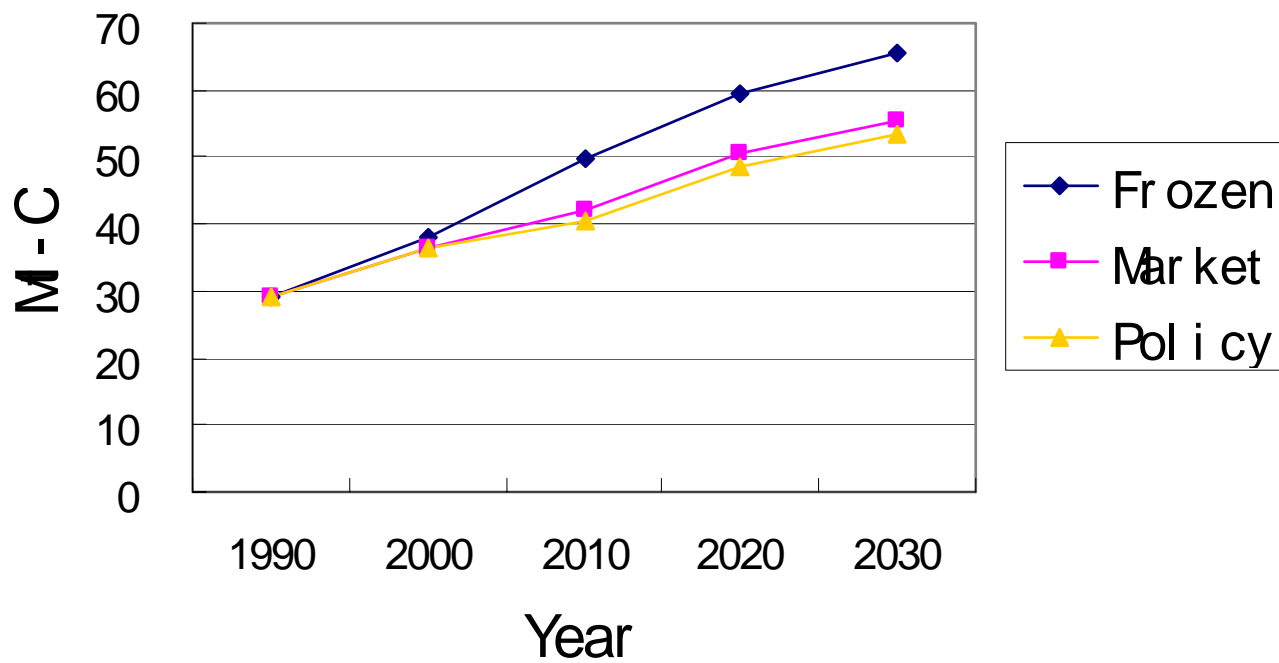
Natural gas bus

### Resident:

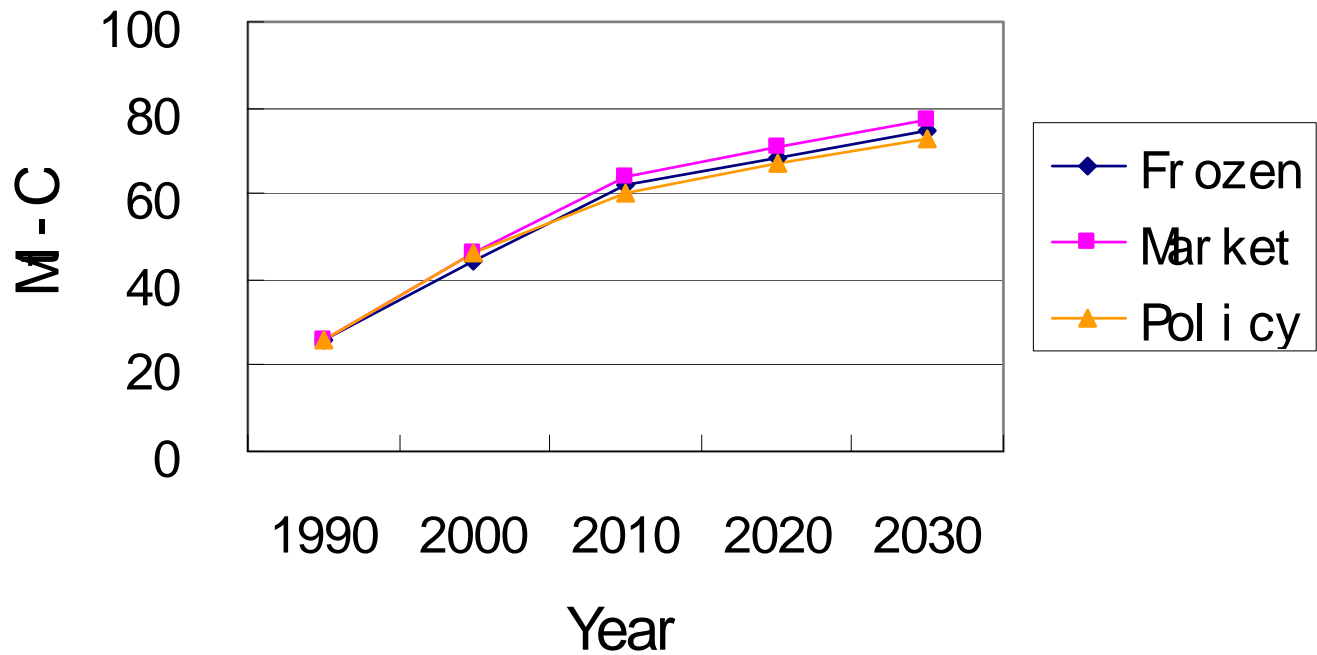
Water heater by solar energy

Natural gas heating system

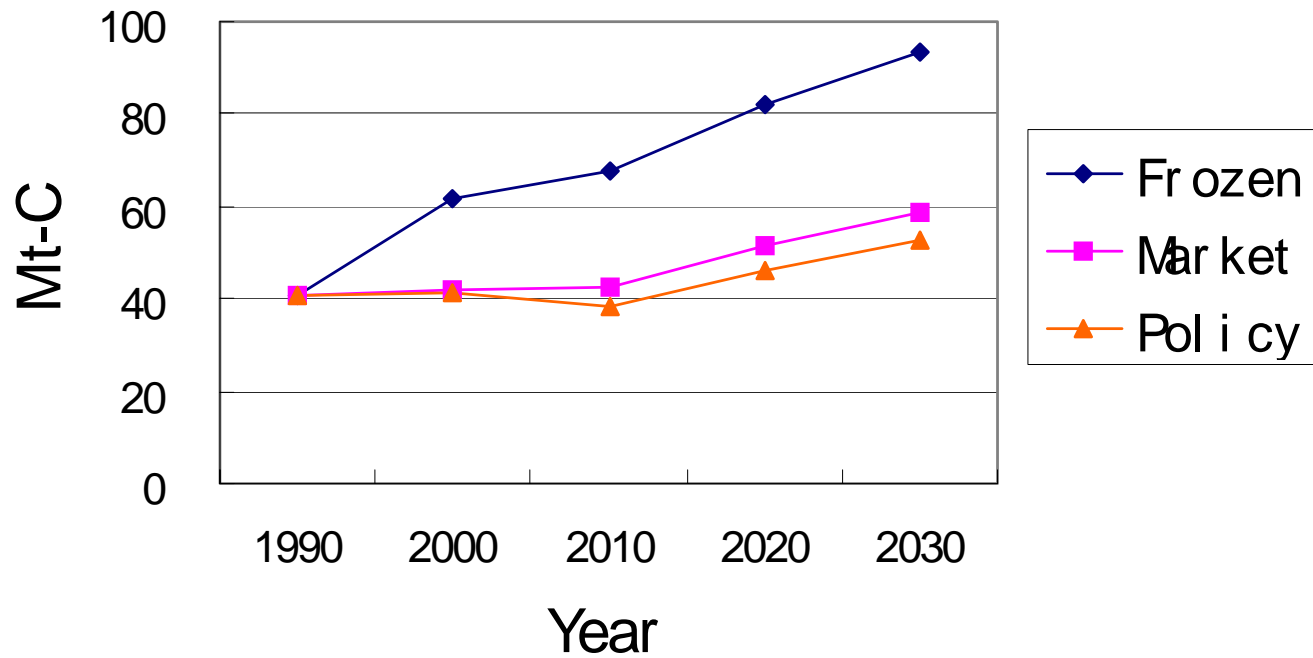
## CO<sub>2</sub> emissions in Agriculture sector



## CO<sub>2</sub> emissions in textile industry

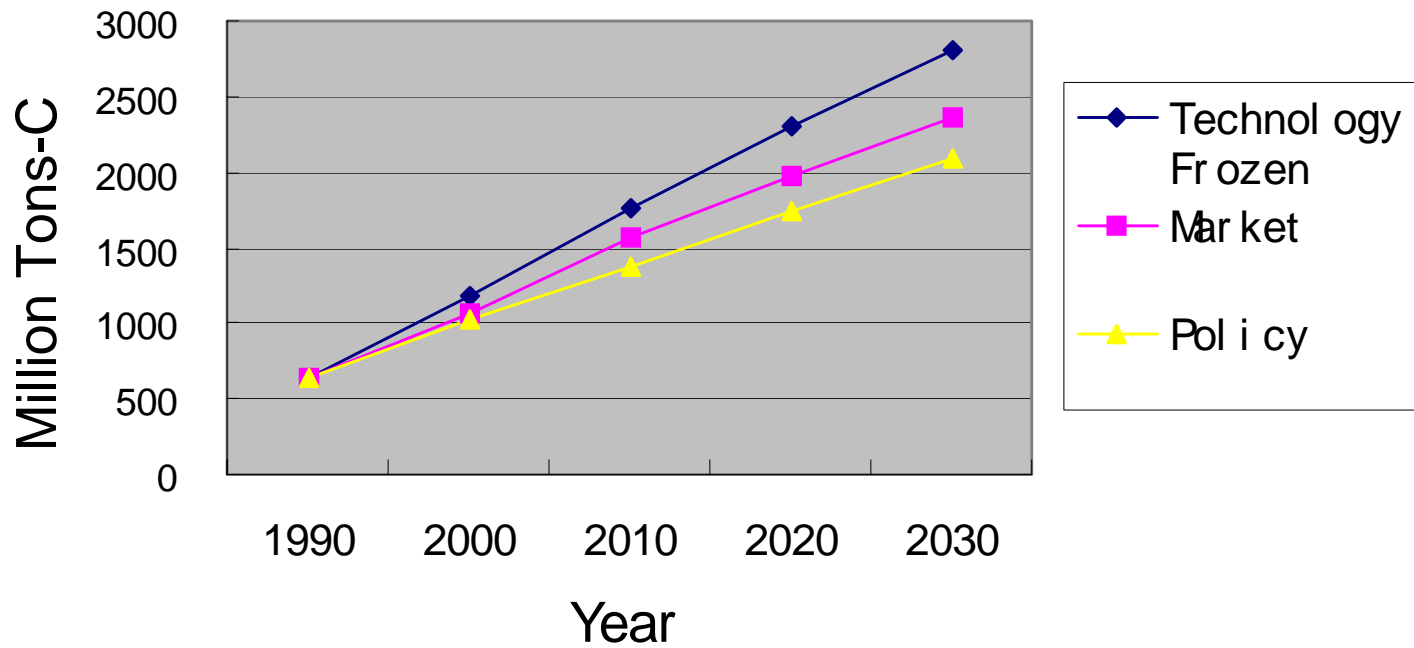


## CO<sub>2</sub> emissions in machinery sector

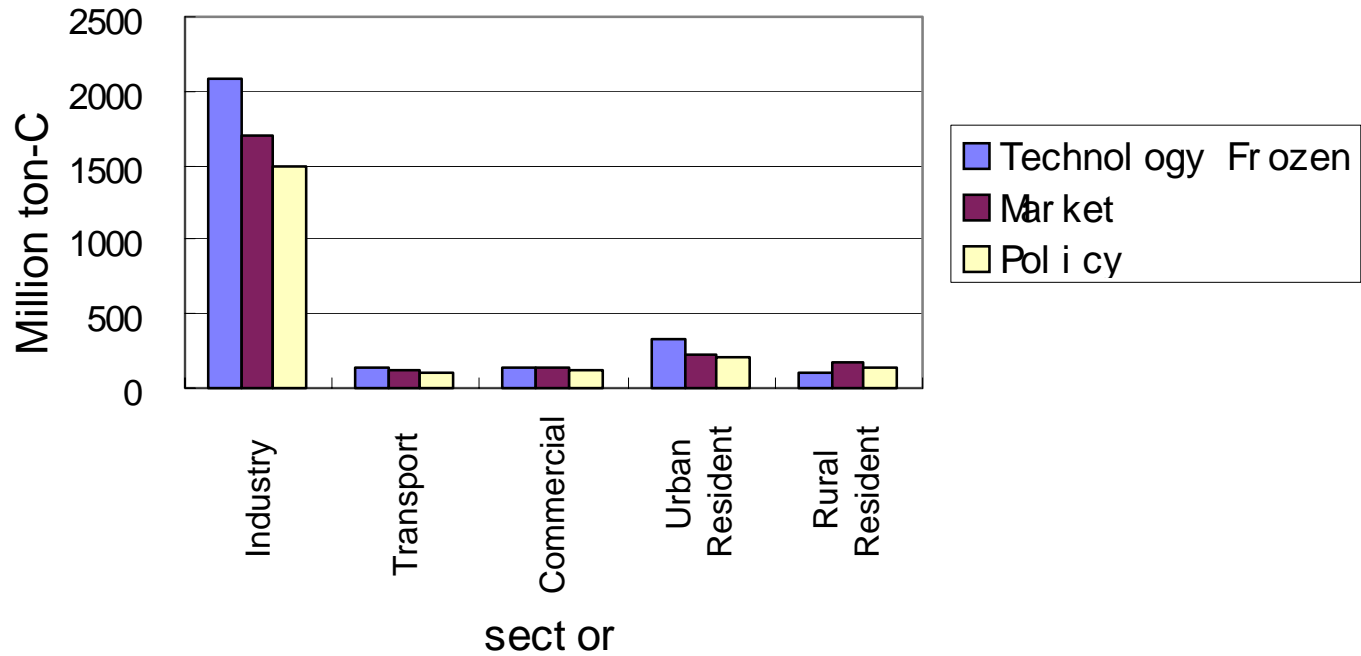




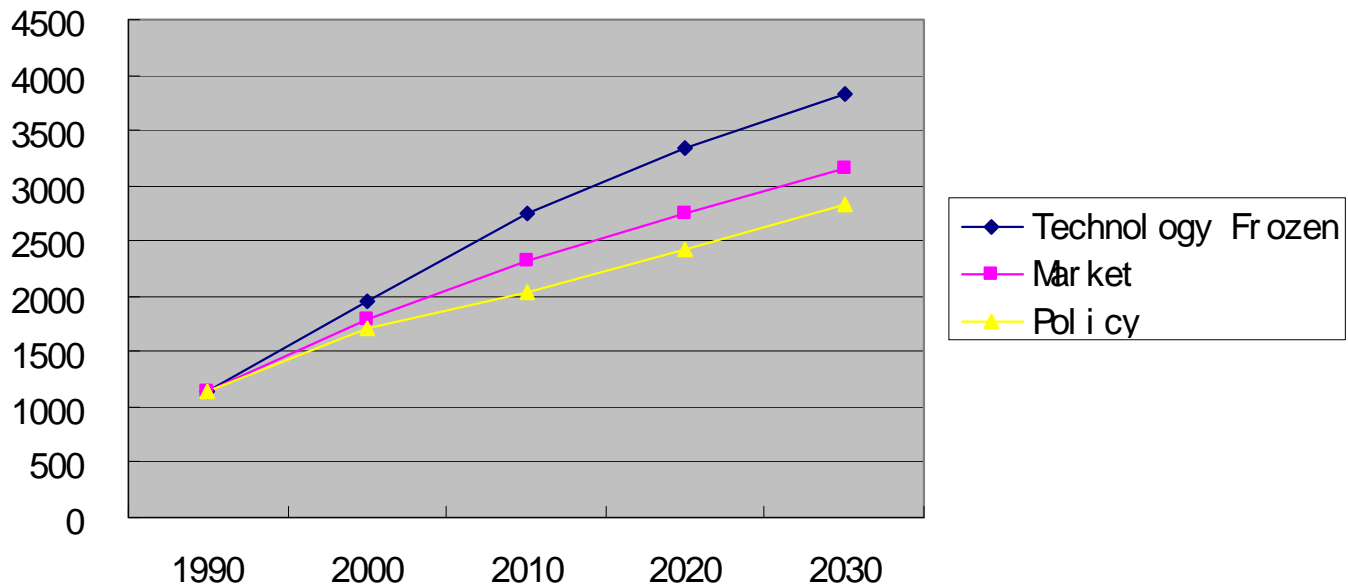
## CO<sub>2</sub> emission by cases



## CO<sub>2</sub> emission by sector in 2030



## Ener gy Demand Scenar i os



## *Beijing Study: Framework*

Base year: 1998

Energy: N.gas, Coal, Electricity, Gasoline, Diesel, Fuel  
Oil, LPG

Energy supply constraint

Energy price: differ among sectors

Gases: CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub>, TSP

Desulphurization technologies will be considered in a  
simple way

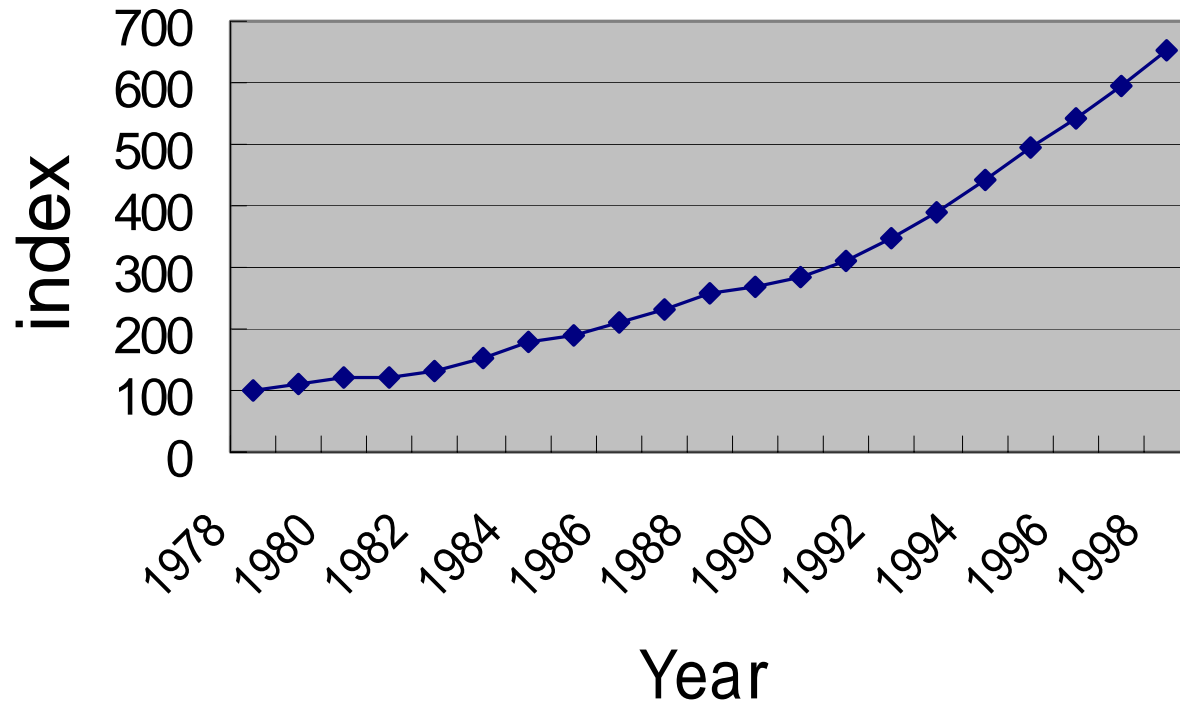
## *Sectors for Beijing Project*

| Sectors            | Subsectors   |
|--------------------|--|
| Resident           | Urban  |
|                    | Rural  |
| Transport          | Public passenger transport: bus  |
|                    | Public passenger transport: city railway (including subway)  |
|                    | Public passenger transport: Taxi   |
|                    | Private car  |
|                    | Railway  |
|                    | Freight transport  |
| Service            | Office building&Hotel  |
|                    | Restaurant   |
|                    | Others   |
| Industrial sectors | Steel making<br>Petroleum Processing<br>Chemical products<br>Nonmetal Mineral Products<br>Food and Beverage Production<br>Textile<br>Machinery<br>Electricity, steam and hot water production and supply<br>Others |

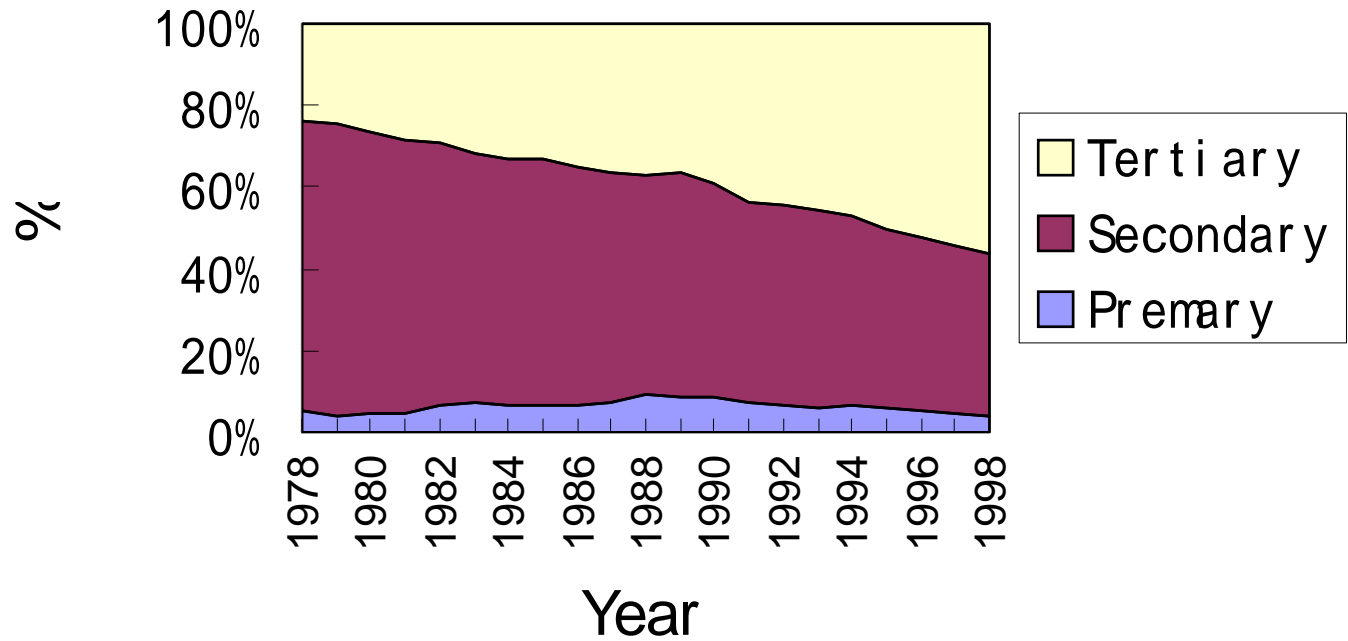
Map of Beijing



## GNP in Beijing, 1978=100

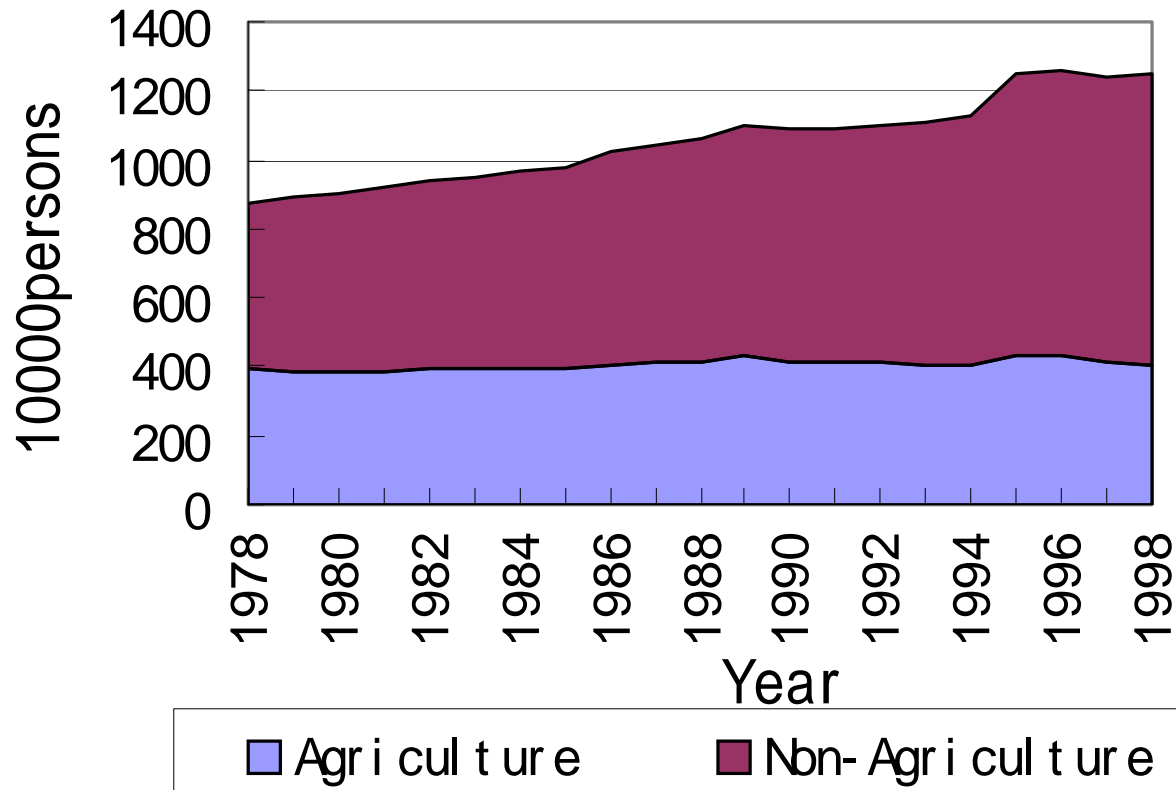


## GDP Mix in Beijing



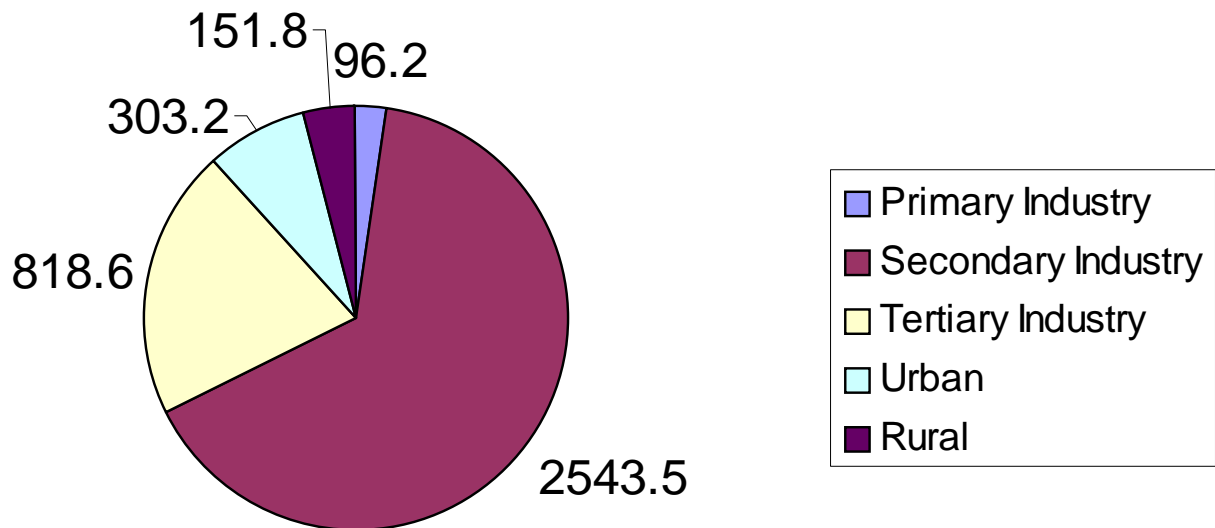


## Population in Beijing

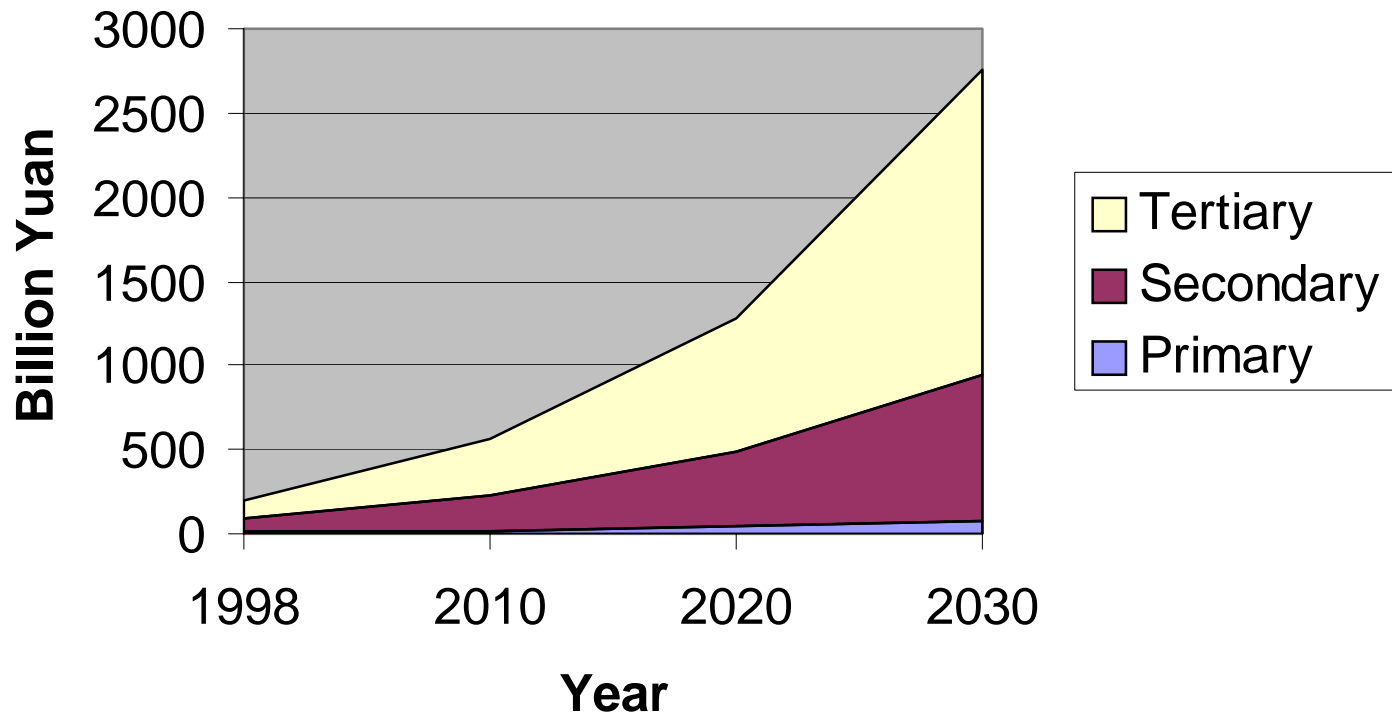


## *Energy use in 1998*

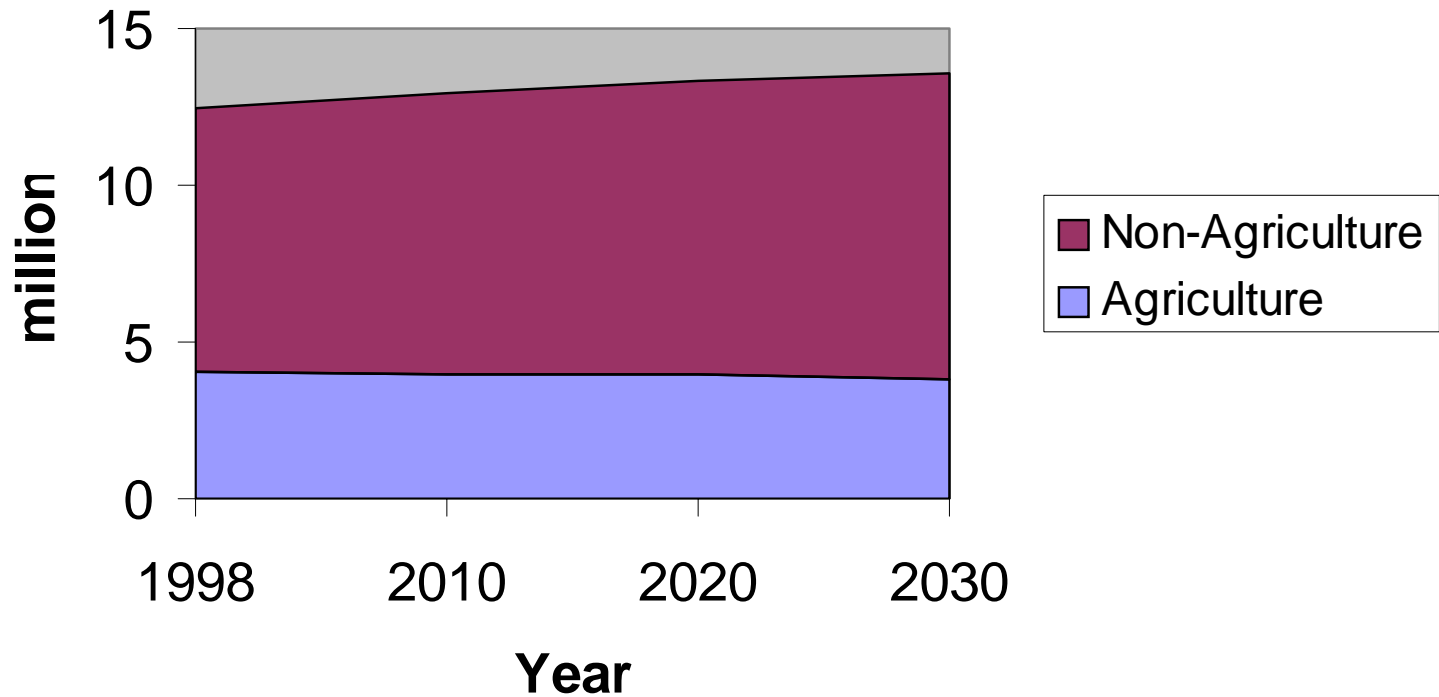
### **Energy use by sectors, Beijing 1998**



## GDP scenario for Beijing



## Population scenario in Beijing



## *Cases defined*

| Cases              | Description                   |
|--------------------|-------------------------------|
| Technology frozen  | AIM/China                     |
| Market             | AIM/China                     |
| Policy             | AIM/China                     |
| Environment Target | Countermeasures by government |
| Green Development  | Local environment policies    |

## *New technologies for Beijing study*

| Sectors            | Technology   |
|--------------------|--|
| Resident Urban     | Gas fired household heating/cooling system, Advanced air conditioner, microwave-oven                 |
| Resident Rural     | Gas-range for cooking, advanced air conditioner, new washing machine, new refrigerator, electric pot |
| Transport          | LPG bus, LPG car, Electric bus, city railway system, high efficiency vehicle                         |
| Commerce           | Independent Co-generation system   |
| Industrial sectors | To be identified   |