

# Cleaner Beijing Energy Development Road

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Area:16410 squ.km2

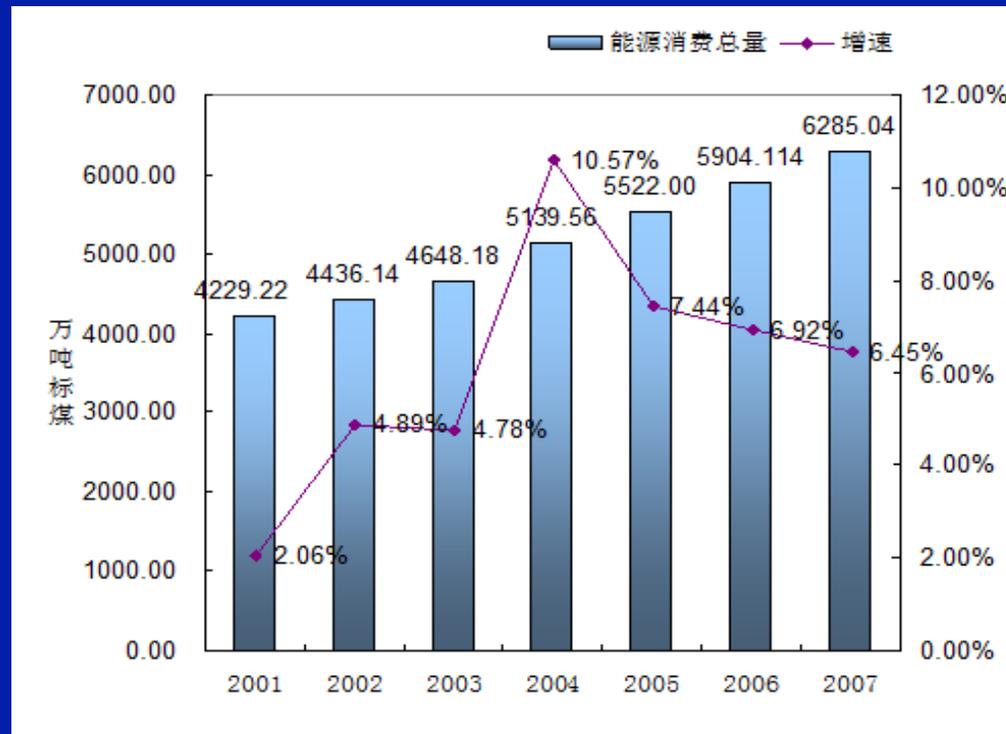
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# 一、Beijing Energy Current situation

## ■ The second largest energy consumption cities in China.

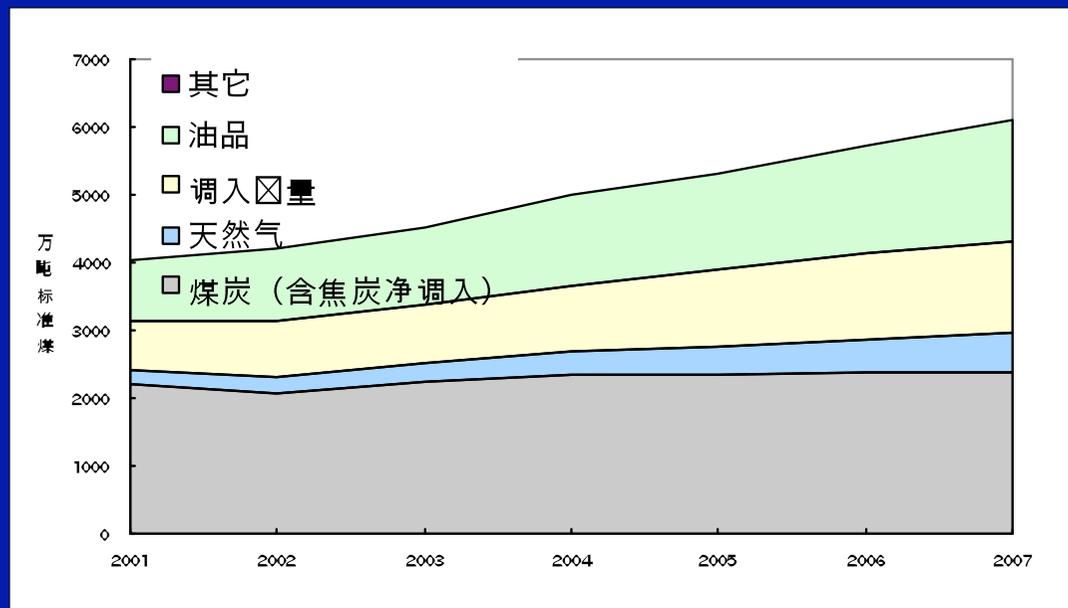
Energy consumption is 62.85mtc in 2007(Shanghai is NO.1),  
3.85tce/person, is more than 1.92 of total national average  
level.



2001-2007 total energy consumption

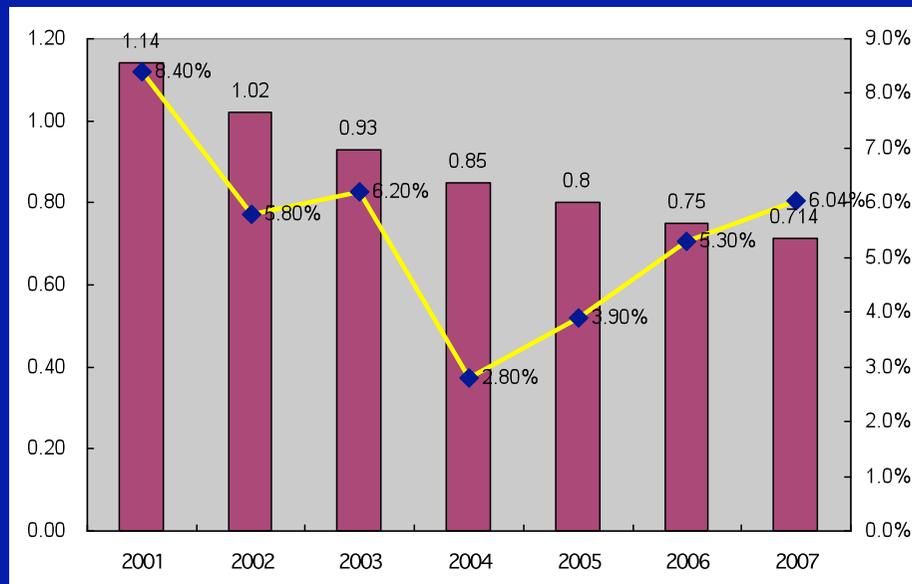
## ■ Energy structure .

the share of electricity, natural gas and oil become higher and higher; the share of coal become lower and lower. From 55% in 2000 to 38% in 2007.



## ■ Energy saving

2007年, energy consumption per unit GDP is 0.714tce, is the NO.1 in all of provinces in China.



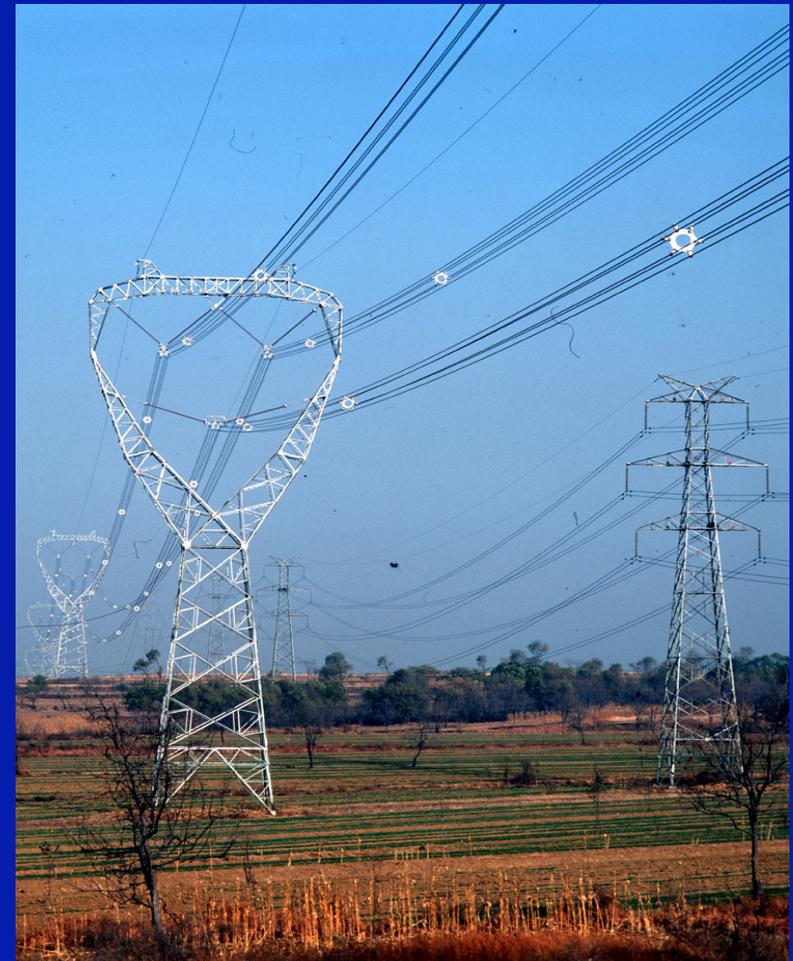
2001-2007 energy consumption per unit GDP

## ——main energy Infrastructural facilities

### ■ Many direction, many line, many exchange point

There are nine 500KV transformer substation, 220kv is 53, and many 110KV.

a good power transformation system



- **Power, Heat natural gas infrastructure**

**Power capacity is 5.6 MKW**

**Integrated heat area is 1300 M m<sup>2</sup>**

**Natural gas pipeline 11 Thousand kilometers**



**太阳宫 natural gas power factory (heat+power)**



**Natural gas pipeline**

# Renewable energy

## ■ 新能源发展初具规模

**Total renewable energy consumption is 1.2Mtce in 2007**

- **Wind Power factory.65MW**
- **PV 2.2MW ; the total solar heating system are 4 M m<sup>2</sup>**
- **Biomass energy power is 40MW**
- **Electric automobile is more than 50**



**Beijing wind power factory**



**Biogas system**





De Qing Yuan biogas power station



Electric bus  
80

- **The heat area by Heat pump is higher of 15 M m<sup>2</sup>.**
- **Construct the first CCS equipment in Hunaneng Power factory, capture CO<sub>2</sub> 3000t/year.**



**Olympic country heat pump system**

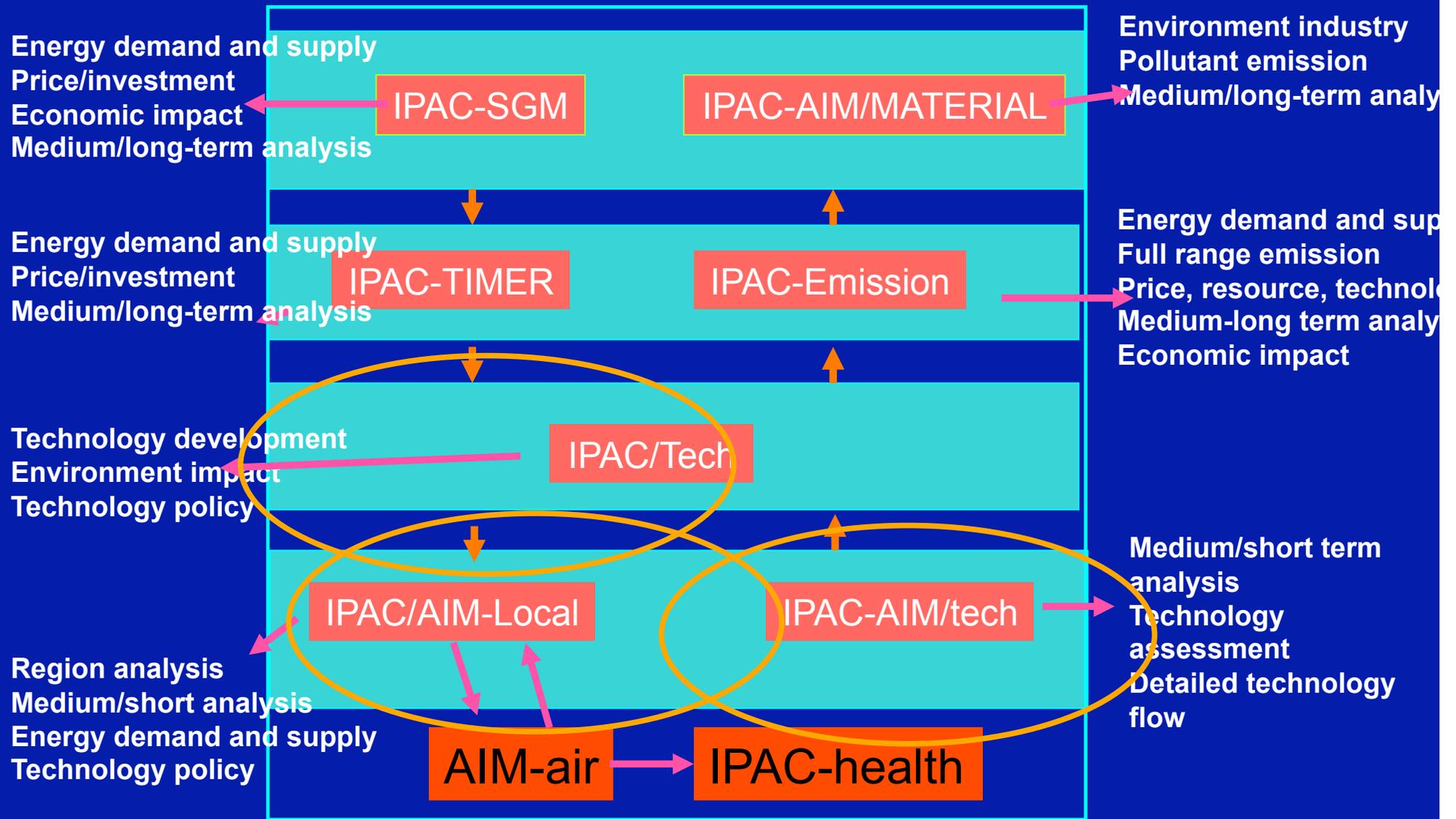


**Hunaneng Power factory CCS system**



What is the LCS-Beijing roadmap ?

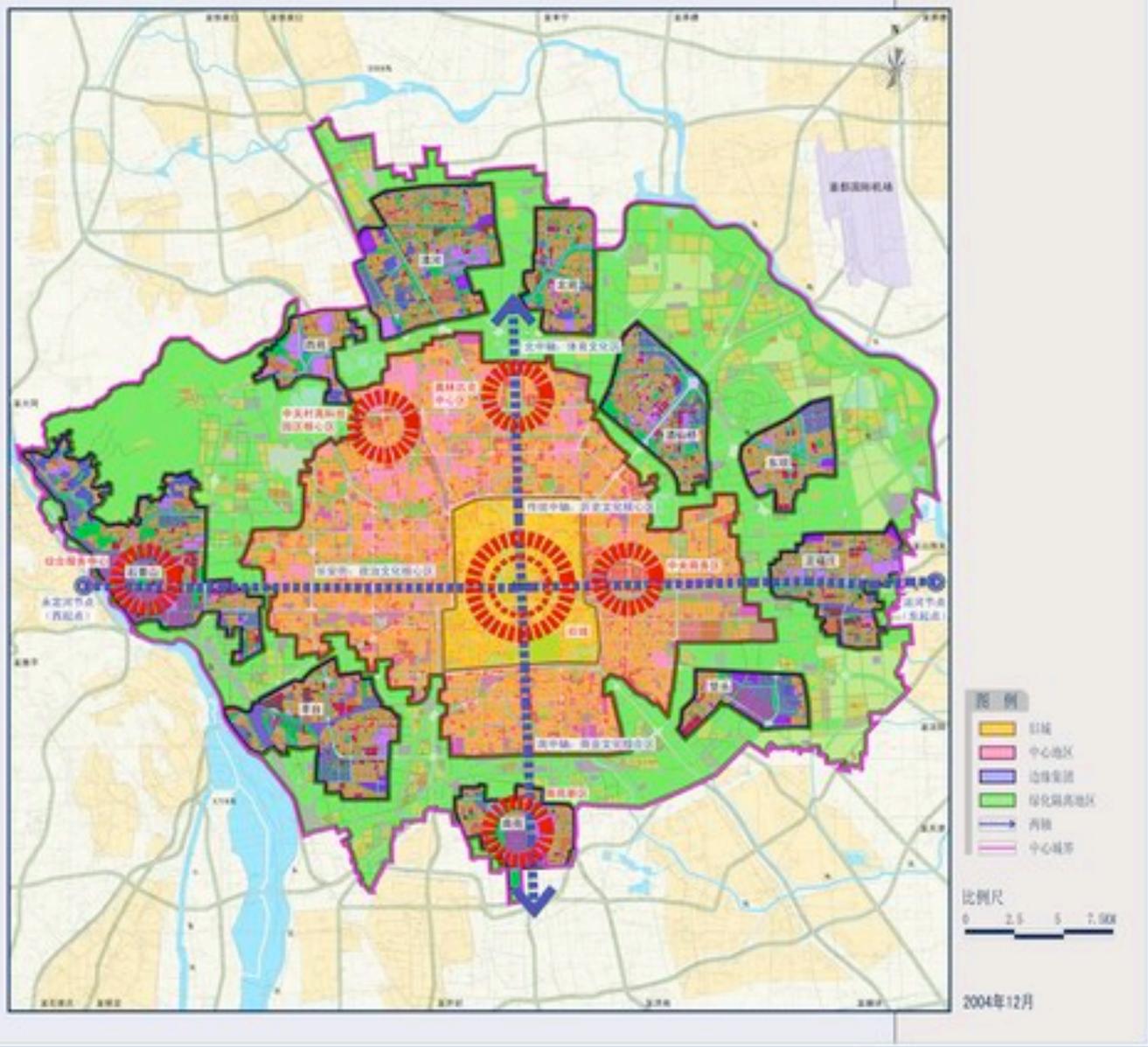
# Tool----Framework of Integrated Policy Model for China (IPAC)





# 北京城市总体规划（2004年-2020年）

## 图62 中心城功能结构规划图





**G20 meeting**, President *Hu Jintao* said during Tuesday's G20 summit that China plans to continue supporting the development of *renewable energy* and nuclear power and include climate change as part of its social development plan. 15% percent renewable energy rate in 2015.

# Scenario

- **B U**: just consider the current policy ,follow the usual economy development style,4%renewable energy rate in 2010
- **Low Carbon**: in this scenario, high economic growth( keep to support more job) rate can be get, the government stimulates the economic plan become more useful ; soft population control; more enviroment friendly technology be used; actively adjust energy structure, strong countermeasure to energy intensity reduction, when in 2020, main product unit energy consumption index is same with the developing country, all new building can reach 65% energy saving standard, consumer, government pay more attention on increase renewable energy share; more transparency policy, give common people more chance to take part in public affairs; A little CCS can be used.
- **Stronger low carbon** : base on low carbon scenario, especially consider the technology development in clean energy and renewable energy, and also give CCS more attention.7% renewable energy rate in 2010.10% in 2015.



# Population

		2007	2010	2020	2030
<b>population</b>	百万人	16.33	17.20	18.17	19.00
<b>Urban rate</b>	%	84.5%	86.0%	88.0%	90%
<b>city</b>	百万人	13.80	14.79	15.99	17.10
<b>Rural countryside</b>	百万人	2.53	2.41	2.18	1.90
户籍人口	百万人	12.13	12.62	13.37	13.91
户籍人口中城镇人口比例	%	76.6%	78.0%	83.0%	88.0%
城市户籍人口	百万人	9.29	9.84	11.10	12.24
农村户籍人口	百万人	2.84	2.78	2.27	1.67
户数	百万户	5.74	6.28	6.90	7.44
城市户数	百万户	<b>4.93</b>	<b>5.48</b>	<b>6.15</b>	<b>6.76</b>
农村户数	百万户	<b>0.82</b>	<b>0.80</b>	<b>0.75</b>	<b>0.68</b>
户籍人口户数	百万户	4.73	4.95	5.27	5.50
城市户数	百万户	3.56	3.80	4.32	4.80
农村户数	百万户	1.17	1.15	0.95	0.70
城市每户人数	人	2.61	2.59	2.57	2.55
农村每户人数	人	2.42	2.41	2.39	2.37

# GDP growth rate

		2005-2010	2010-2020	2020-2030
<b>GDP 增长速度</b>		<b>10%</b>	<b>9%</b>	<b>7%</b>
	<b>2007</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
<b>GDP, 10亿元</b>	<b>9353</b>	<b>12449</b>	<b>29471</b>	<b>57974</b>
结构, %				
第一产业	<b>1.08%</b>	<b>1.00%</b>	<b>0.90%</b>	<b>0.80%</b>
第二产业	<b>26.83%</b>	<b>25.00%</b>	<b>19.10%</b>	<b>14.20%</b>
第三产业		<b>10%</b>	<b>9%</b>	<b>7%</b>

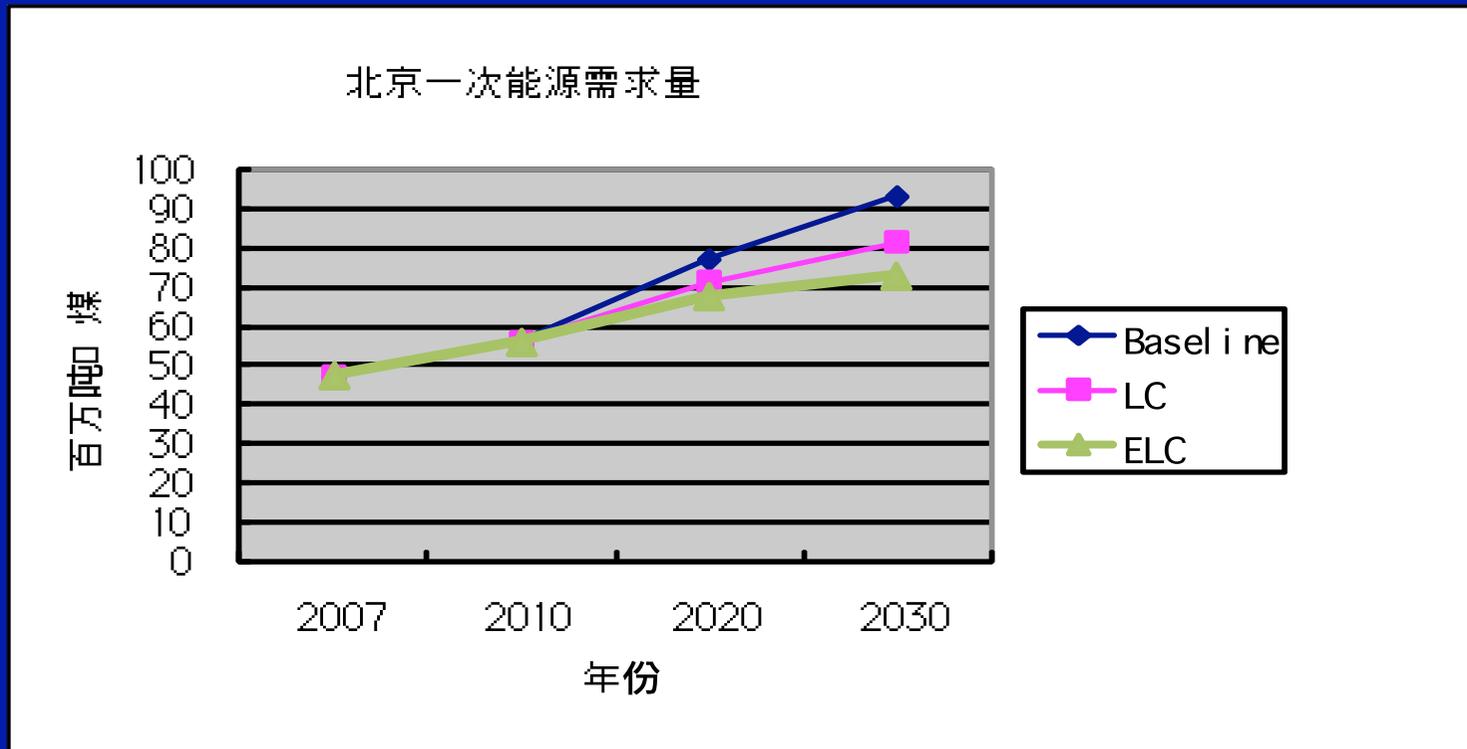
## Main product production

		2007	2010	2020	2030
steel	万吨	811	800	600	600
cement	万吨	1167	1300	1436	1509
glass	万吨	246.08	300	300	300
Ethylene	万吨	99.08	140	200	200
Refines oil	万吨	1243	1300	1400	1400
Plastic	万吨	140	180	200	200
automobile	万辆	70	100	140	160

## Transportation

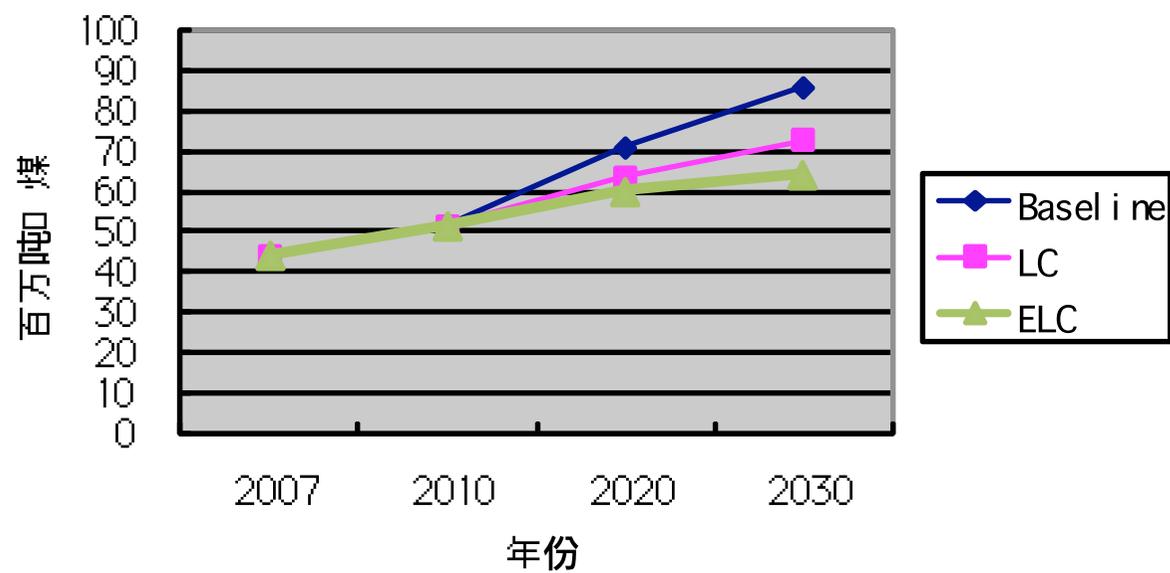
IPAC	2007	2010	2020	2030
automobile	307	361	614	708
car	252	343	594	686
Freight vehicle	17.6	18.1	20.1	21.7
小汽车	246	337	587	679
家庭小汽车	146	213	428	486
Other small car	100	124	159	192
Small bus	0.52	5.20	5.20	5.20
Big bus	4.68	0.67	1.75	2.72
大小型客车	5.20	5.87	6.95	7.92
motor	24.6	23.8	22.9	22.0
bus	2.05	2.09	2.18	2.26
Under railway, K M	142	190	560	950
taxi	6.66	6.80	6.93	7.003
bicycle	1100	1100	1100	1100
electric bicycle	80	130	300	500

# result

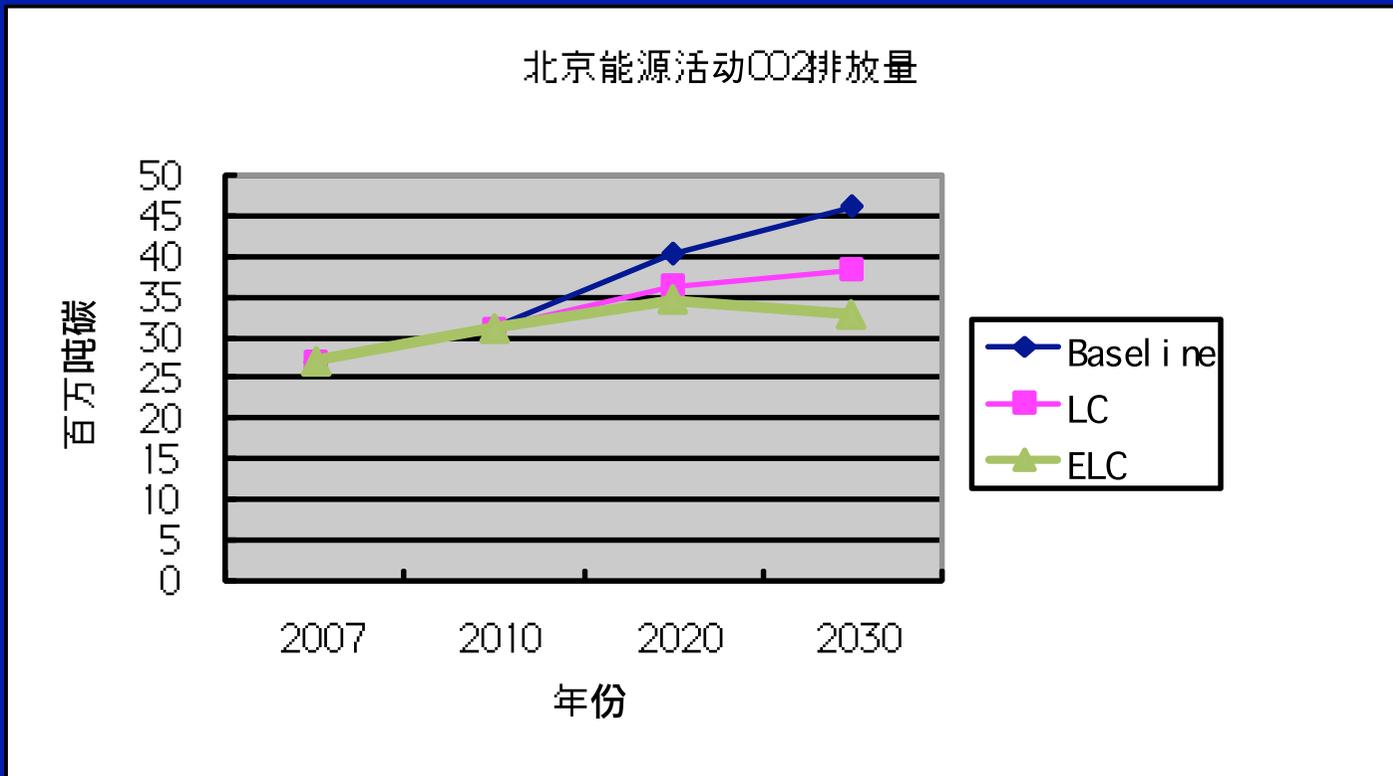


Total energy consumption

北京终端能源需求量



Endues energy consumption



Total CO<sub>2</sub> emission

# Policy advise

- As an important goal in the struggle to promote the capital's good and rapid economic and social development, Beijing municipal government construct to build a "humane Beijing, Science and Technology Beijing, Green Beijing", More actively adjust economic structure , pay more attention on renewable energy industry development, pay more attention on control energy intensive industry, actively develop new energy automobile industry.
- Implements the energy conservation policy continually comprehensively, the energy conservation goal of the 11th five year plan must take one kind of long-term policy to continue
- Propose a green lifestyle , the "Green" principle needs to be included in every aspect of economic and social development, such as city construction, production development and environmental restoration.
- Encourage the investment on energy saving, displays Beijing's comparison superiority in regional economies, by the government public investment guidance private investment, realizes the advanced low energy consumption economic system.

**Thank your attention!**