Chinese smog: A geopolitical event

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Oil Forecast: made in 2007 and 2011

U.S. Lower-48 Crude Oil and NGL Production
(Million Barrels per Day)

2007 Forecast

2011 Forecast

Impact of Tight Oil and Deep-Water Technology
Americas surpass Middle East

Mb/d

1990 2000 2010 2020 2030

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China's 13 megalopolises: A snapshot

Population (a) (m)  GDP (b) (Rmb bn)
25  2,000
20  1,500
15  1,000
10  500
5  0
0  0

(a) 2010 estimates, metropolitan area.
(b) 2009 figures, metropolitan area.
Source: Economist Intelligence Unit, National Bureau of Statistics.
From zero to 50: proportion of urban population earning over Rmb 30,000 (%)

Source: Economist Intelligence Unit.
Figure III.1 | World Inter-regional Hard Coal Net Trade by Major Region

Longer Term Outlook: China

China Crude Oil Production and Constrained Demand

Source: EIA, Douglas-Westwood Analysis
Chinese car purchases 2000-2035
Figure 2.6  ▶  Share of China and India in net increase in global primary energy demand by fuel and CO₂ emissions in the New Policies Scenario, 2010-2035
Exhibit 3
Chinese Nuclear Power Generation Capacity and 2015 Target

Source: National Bureau, World Steel Association, CEC, Bernstein estimates and analysis
Chinese Non-Fossil Fuel Share of Energy Mix, with Targets

Source: Wiki Commons, Private collector
Figure 4. Coal Demand by End-use, Reference and Max Tech Scenarios

Reference

Max Tech

[Graph showing coal demand by end-use for Reference and Max Tech scenarios from 2000 to 2030]
Projected drop in oil prices 2012-2020

Figure 67. Real Oil Price Impact From New Production and Reduced Consumption, 2012E-20E

- Real global oil prices fall
- 14% from new production
- and another -2.5% from reduced consumption

Source: Citi Investment Research and Analysis
Rising Budgetary Pressures Increase Breakeven Oil Price Thresholds…

Oil Price Required to Balance OPEC Budget (US$/Barrel)

- 2009
- 2010
- 2011

OPEC’s Unofficial $70-$90/BBL Price Band

Bar Chart:
- Kuwait
- Saudi Arabia
- Iran
- Iraq
- Angola
- Nigeria
- Venezuela

Source Data: PFC Energy and Chevron Analysis
China’s carbon dioxide emissions if the status quo continues

A reduction of 1 billion tonnes per year by 2020 would get the entire world roughly 10% of the way to limiting global temperature rise to 2 degrees Celsius.

Projected emissions if a technological, economic, or political change causes an early peak

Data: United Nations Environment Programme
Lawrence Berkeley National Laboratory
Cumulative Impact on US Real GDP, 2012-2020

- $91bn or 0.5% from improved consumption efficiency
- $48bn or 0.2% of GDP from gas-related multiplier effects
- Additional $212bn or 1.1% of GDP from oil-related economy-wide multiplier effects
- Direct Hydrocarbon Output of $274bn or 1.4% of GDP

Source: CIRA