



# **Building an Industrial Park in Sainshand**

## Europe-Mongolia Investors' Forum

December 3, 2009 • London

Mongolia's Ministry of Road, Transportation, Construction and Urban Development prepared this presentation according to resolution decree # 68 issued by the Prime Minister of Mongolia on July 8, 2009, as well as National Development Strategy, endorsed on January 31, 2008 by resolution 12 of Parliament of Mongolia.

**Ministry of Road, Transportation, Construction and  
Urban Development of Mongolia**

# Agenda

## Overview of Mongolia

National Development Strategy of Mongolia

Strategic mining deposits

Potential commodity markets

Industrial park

Infrastructure need

Potential socioeconomic impact of the industrial park and new railway infrastructure

# Mongolia has a comparative advantage in natural resources and is looking to transform it to a competitive advantage



## Major Rating Factors <sup>(1)</sup>

| Strengths   | Weaknesses   |
|---|--|
| <ul style="list-style-type: none"> <li>Improved growth prospects on the back of a burgeoning mining sector</li> <li>Strong donor country and multilateral support</li> <li>A comparatively stable political environment for this rating category</li> </ul> | <ul style="list-style-type: none"> <li>Vulnerabilities inherent in a small, undeveloped, primarily commodity-based, low-income economy</li> <li>High degree of financial sector vulnerabilities as a result of ongoing robust credit growth, relatively high level of past-due loans, and the need for continued improvement in banking supervision</li> </ul> |

**S&P Rating Detail (December 19, 2008) <sup>(1)</sup>**

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**Mongolia**  
Sovereign Credit Rating **BB-/Negative/B**

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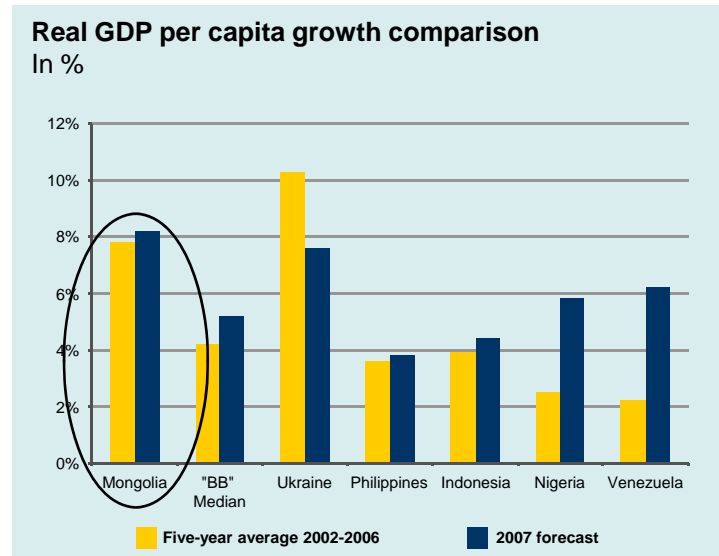
**Sovereign Credit Ratings History**

|           |               |
|-----------|---------------|
| 24-Dec-07 | BB-/Stable/B  |
| 22-Dec-06 | B+/Positive/B |
| 28-Dec-05 | B/Positive/B  |

**Mongolia Select Statistics <sup>(1)</sup>**

|  | 'BB' Median 2007f | 2007f   |
|--|-------------------|---------|
| Per capita income (US\$)                             | 2,931.0           | 1,588.0 |
| Real GDP (% chg.)                                    | 6.2               | 9.0     |
| Real GDP per capita (% chg.)                         | 5.1               | 8.2     |
| General government balance (% of GDP)                | (1.2)             | (0.7)   |
| General government gross debt (% of GDP)             | 38.4              | 36.3    |
| General government net debt (% of GDP)               | 31.8              | 22.3    |
| Gen. gov. interest expenditure/gen. gov. revenue (%) | 8.6               | 1.4     |
| Dom. credit to private sector and NFPEs* (% of GDP)  | na                | 35.3    |
| CPI inflation (average % chg)                        | 6.2               | 7.5     |

f - Forecast

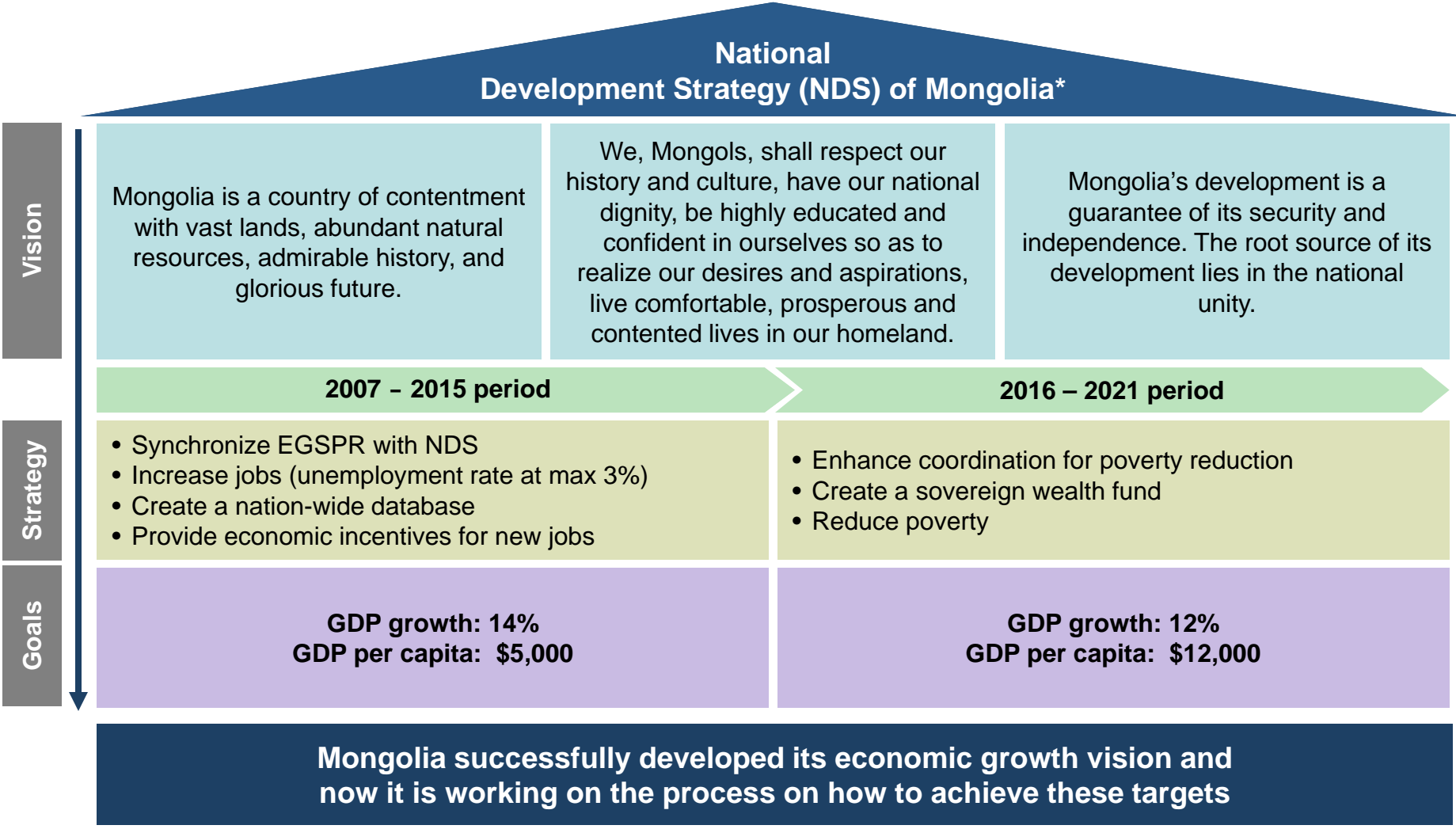


**Economic Prospects**

- A heavy reliance on commodity exports, inadequate infrastructure, and vulnerability to high energy prices, preclude stable, broad-based growth
- Continued delays in negotiating new mineral investments point to challenges ahead
- High minerals prices, vast copper and coal potential, and increased tourism make medium-term growth prospects robust

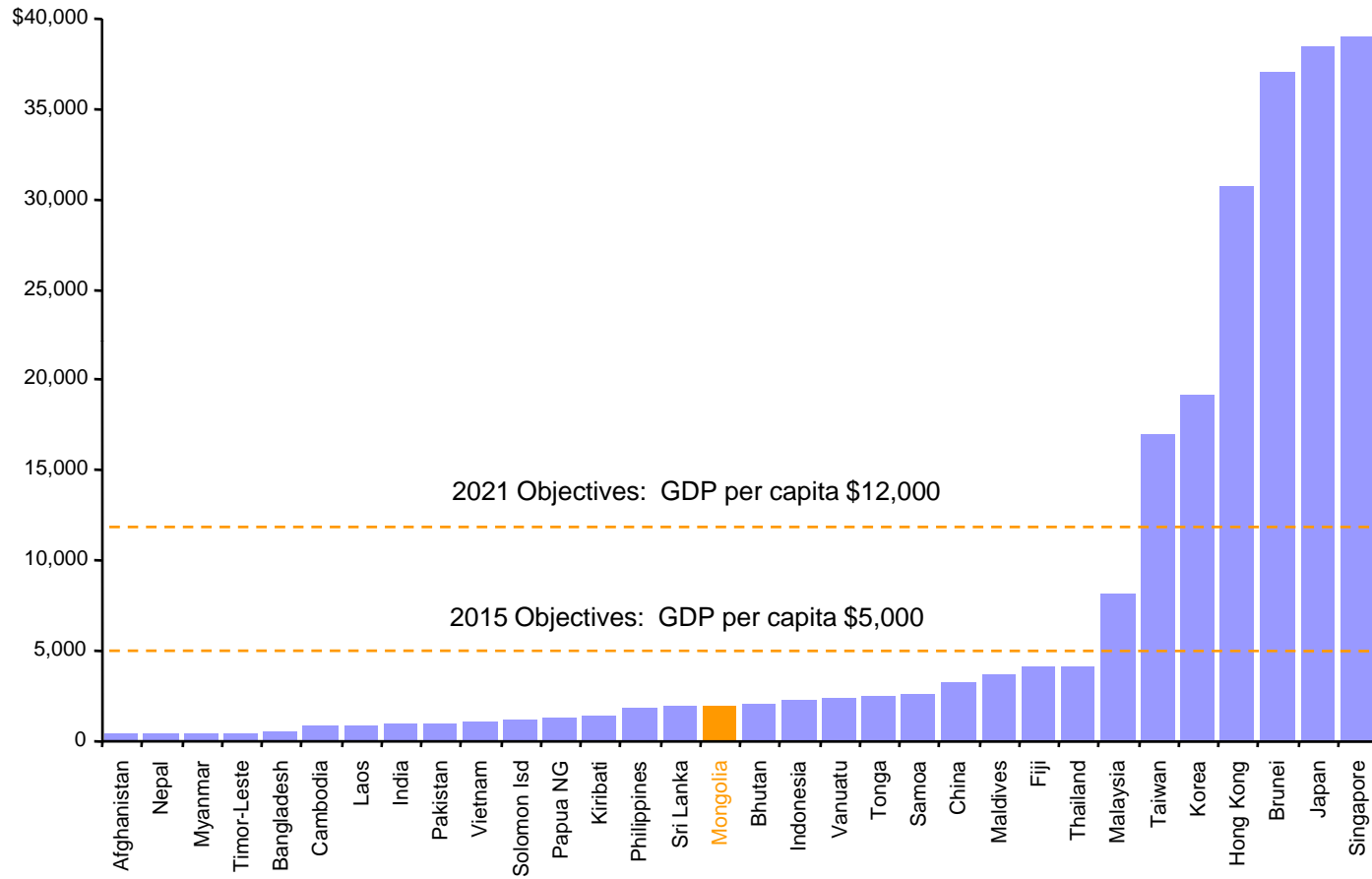
(1) Standard & Poor's Research: Mongolia, December 19, 2008 revision

# Millennium Development Goals based Comprehensive National Development Strategy of Mongolia



\* Parliament of Mongolia resolution 12 dated Jan. 31, 2008 endorsing National Development Strategy of Mongolia

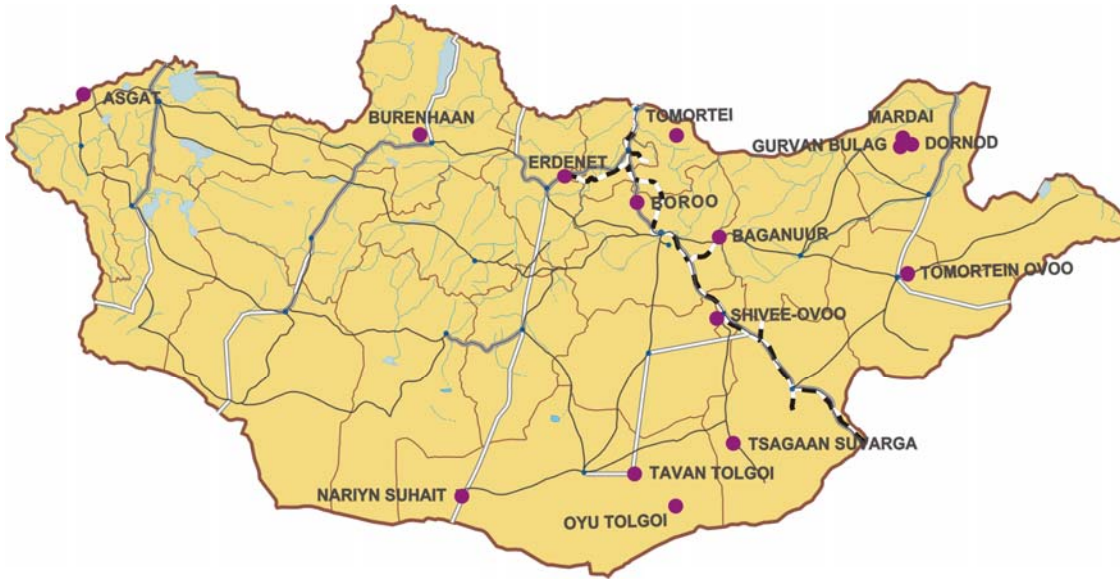
# Mongolia's National Development Strategy objectives in perspective with other Asian advanced and developing countries



**Achievement of the National Development Strategy would place Mongolia into one of the key economic powers in the regions**

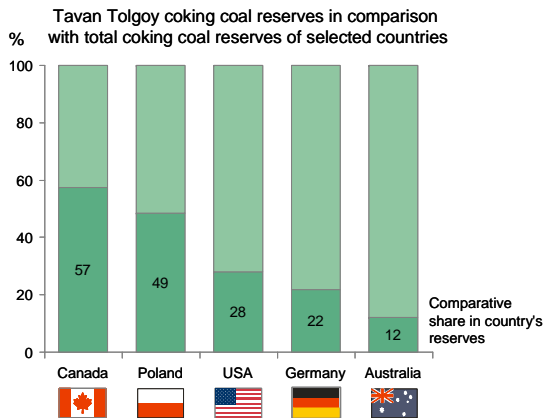
\* International Monetary Fund, World Economic Outlook Database, October 2009

# Mongolia has some of the largest undeveloped reserves in the world – a comparative advantage for long term growth



| Mining sites    | Mineral            | Resources ('000 tons) |
|-----------------|--------------------|-----------------------|
| Tavan Tolgoi    | Coaking coal       | 6,420,000.0           |
| Nariin Sukhait  | Coal               | 125,500.0             |
| Baganuur        | Brown coal         | 600,000.0             |
| Shivee Ovoo     | Brown coal         | 646.2                 |
| Mardai          | Uranium            | 924.6                 |
| Dornod          | Uranium            | 16,467.0              |
| Gurvan Bulag    | Uranium            | 10,560.0              |
| Tomortei        | Iron ore           | 229,300.0             |
| Oyu Tolgoi      | Copper             | 2,300,000.0           |
| Tsagaan Suvraga | Copper             | 10,640.0              |
| Erdenet         | Molybdenum         | 240,100.0             |
|                 | Copper, molibdenum | 1,200,000.0           |
| Burenhaan       | Phosphorite        | 192,240.0             |
| Boroo           | Gold               | 24.5                  |
| Tomortein Ovoo  | Lead               | 7,689.4               |
| Asgat           | Silver             | 6,402.6               |

**Tavan Tolgoi is the largest coal reserve in the world by proven reserves**



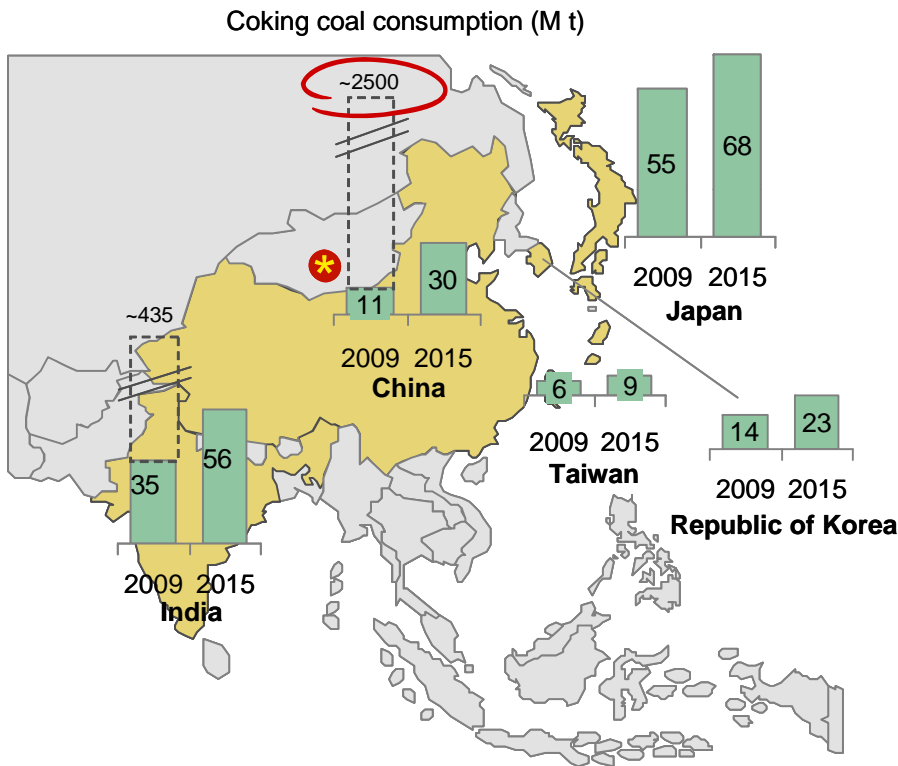
**Oyu Tolgoi is the targets by inferred copper and gold resources**



Source: The Boston Consulting Group, Erdenes MGL LLC

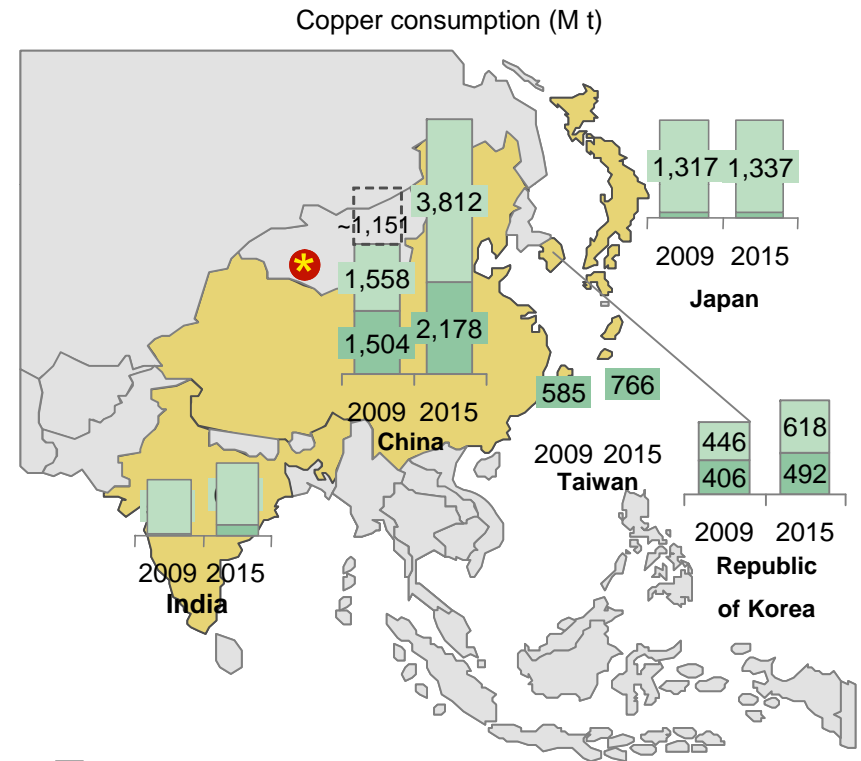
# Although China is the main market for Mongolian commodities, other alternative markets, such as Japan, Korea, India, exist

Coal imports into Asian countries will grow ~9% a year between 2009-2015



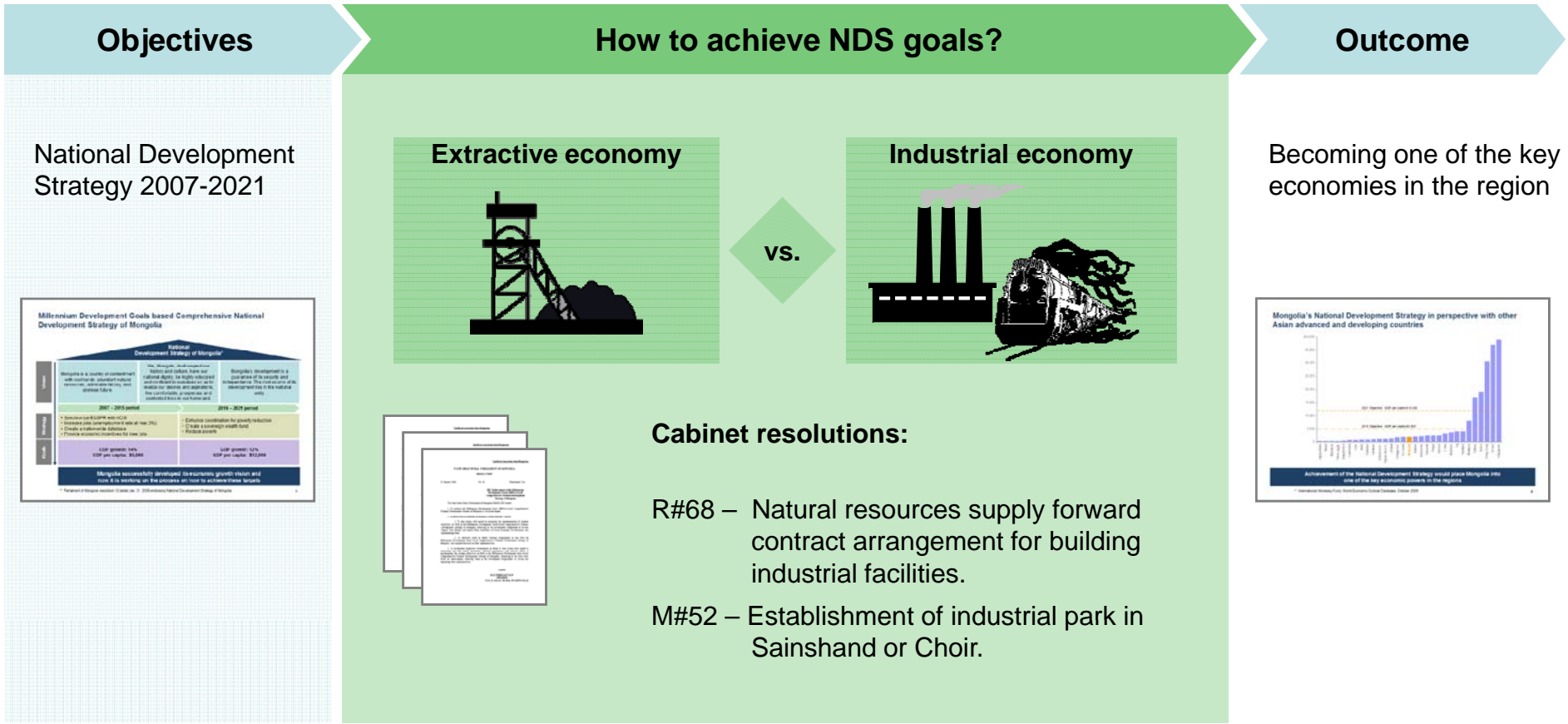
  Domestic consumption supplied by domestic production  
 Coking coal imports

China is the biggest Asian market for copper, concentrate makes the bulk of imports



Copper concentrate imports  
 Copper cathode imports  
  Domestic consumption supplied by domestic production

# In order to achieve its NDS objectives, Mongolia is facing a choice between an extractive versus industrial economy



Mongolia has clearly chosen an industrial path, which requires significant capital investments. However, due to complexity of the task, Mongolia needs help with an investment Master Plan.

# In consideration of 4 key principles of industrialization proposed by BCG and all potential locations for an industrial park, Mongolia is tending to choose Sainshand for establishment of the industrial park

## Industrialization of Mongolia is to be based on 4 key principles



- 1 **Competitiveness**
  - Products of established downstream companies must be competitive in foreign markets and add value
- 2 **Financial viability**
  - Industrialization projects are to be financially viable and justify investment
- 3 **Domestic demand development**
  - The products produced must as a priority satisfy domestic demand, especially in the case of supply shortage, and to lead to internal supply development as key source
- 4 **Attainment of long-term macroeconomic goals**
  - Industrialization plans are to be aligned with Mongolia's long-term macroeconomic goals

Source: BCG analysis  
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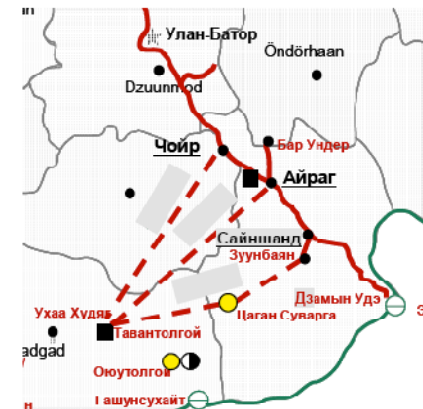
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## Sainshand has the best location among all cities that can become the basis for the industrial cluster



### Criteria of optimal industrial cluster location:

- 1 **Industrial industrial cluster should be formed on the basis of one of existent cities along IMR:**
  - Existent urban infrastructure
  - Convenient transportation of people moving from Ulaanbaator and other regions of Mongolia
  - Option of iron ore transportation from Tomorey mine
- 2 **Proximity to sales markets:**
  - Sainshand is closer to China, the main market, than other cities.
  - Processing in Sainshand minimizes total logistics cost
- 3 **Proximity to Oyu Tolgoi and other mines:**
  - Most southern route would provide immediate proximity of the railway to other mines, such as Oyuu Tolgoi, Tsagaan Suvarga, Timurtein Ovoo, Tsagaan Tsav, which will reduce development costs
- 4 **Distance and cost of line construction:**
  - The line to Dzuunbayan reduces distance to be covered by the new railway which minimizes CAPEX

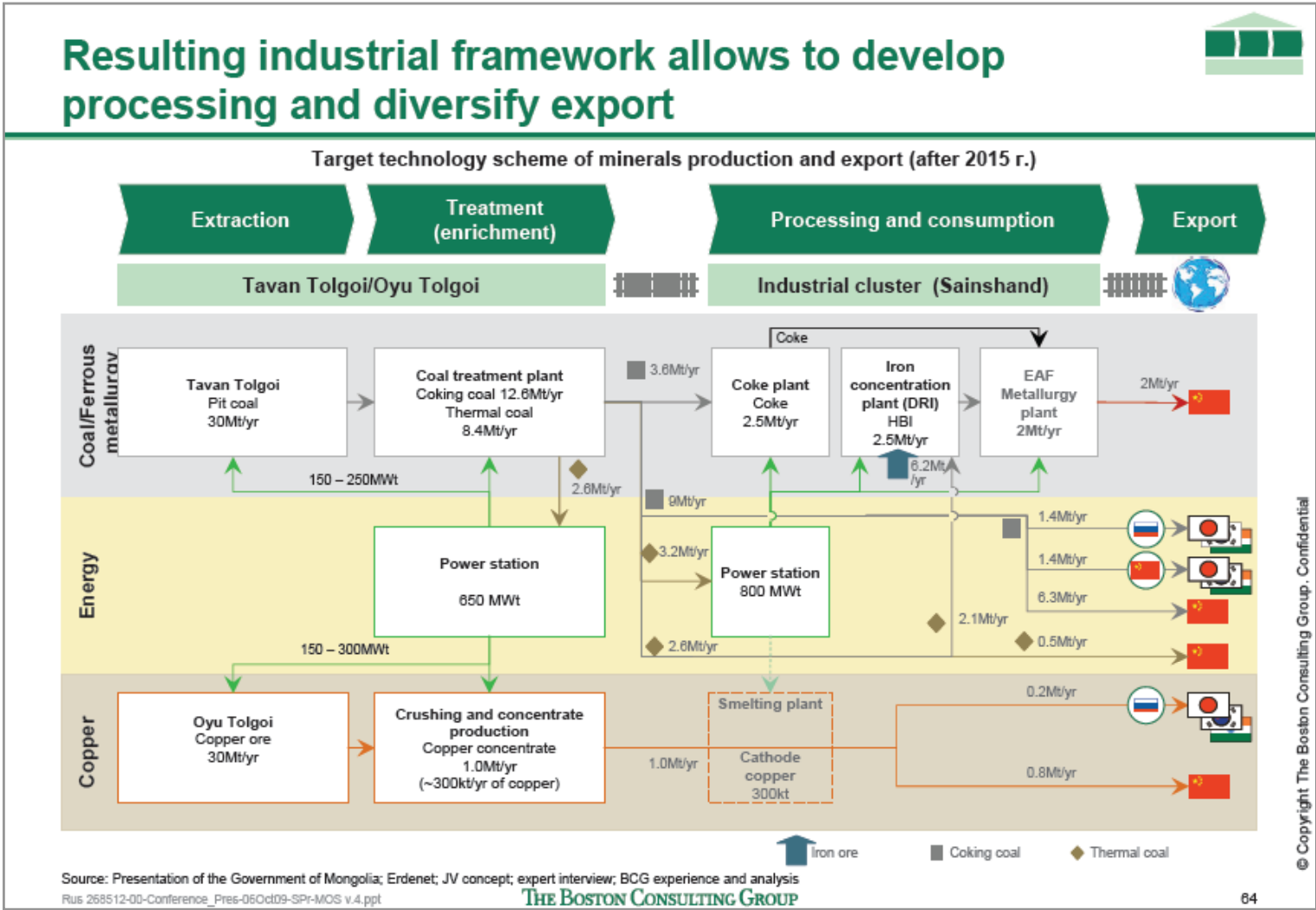


Source: The World Bank; BCG analysis  
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# The industrial park in Sainshand would provide basis for further economic diversification of Mongolia



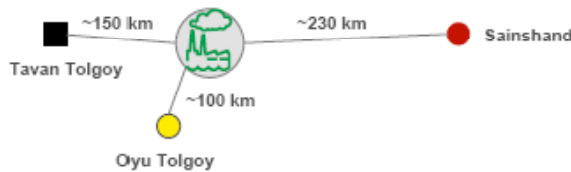
Source: The Boston Consulting Group, Railway infrastructure development strategy for Mongolia, October 16, 2009

# Mongolia would need two or three power plants to accommodate power demand, as recommended by BCG

## Separate power plants will be required for mining and industrial clusters



### One power generation cluster



- Benchmark cost of construction of high voltage power line is 500 – 700 kUSD per kilometer
- Even at central location, total cost of required power lines would be ~240 – 336 mUSD
- Given very high average transmission and distribution losses in Mongolia (17,4%), potential economics of power transmission is very low
- Overall stability of the system is lower

### Recommended option Two or three power stations



- Incremental cost of coal transportation is insignificant ~ \$9,3 t/km (comparing to construction and maintenance of power lines)
- Burden on potentially scarce water resources is distributed among different areas
- Easier from organizational point of view: each mine investor has own power plant, no need to create complex JV schemes
- In the future power stations can be combined into central energy system of Mongolia for redistribution of energy

Source: World bank, expert interviews, BCG analysis  
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# Existing and planned regional rail routes would enable Mongolia access to the main and alternative markets for commodities



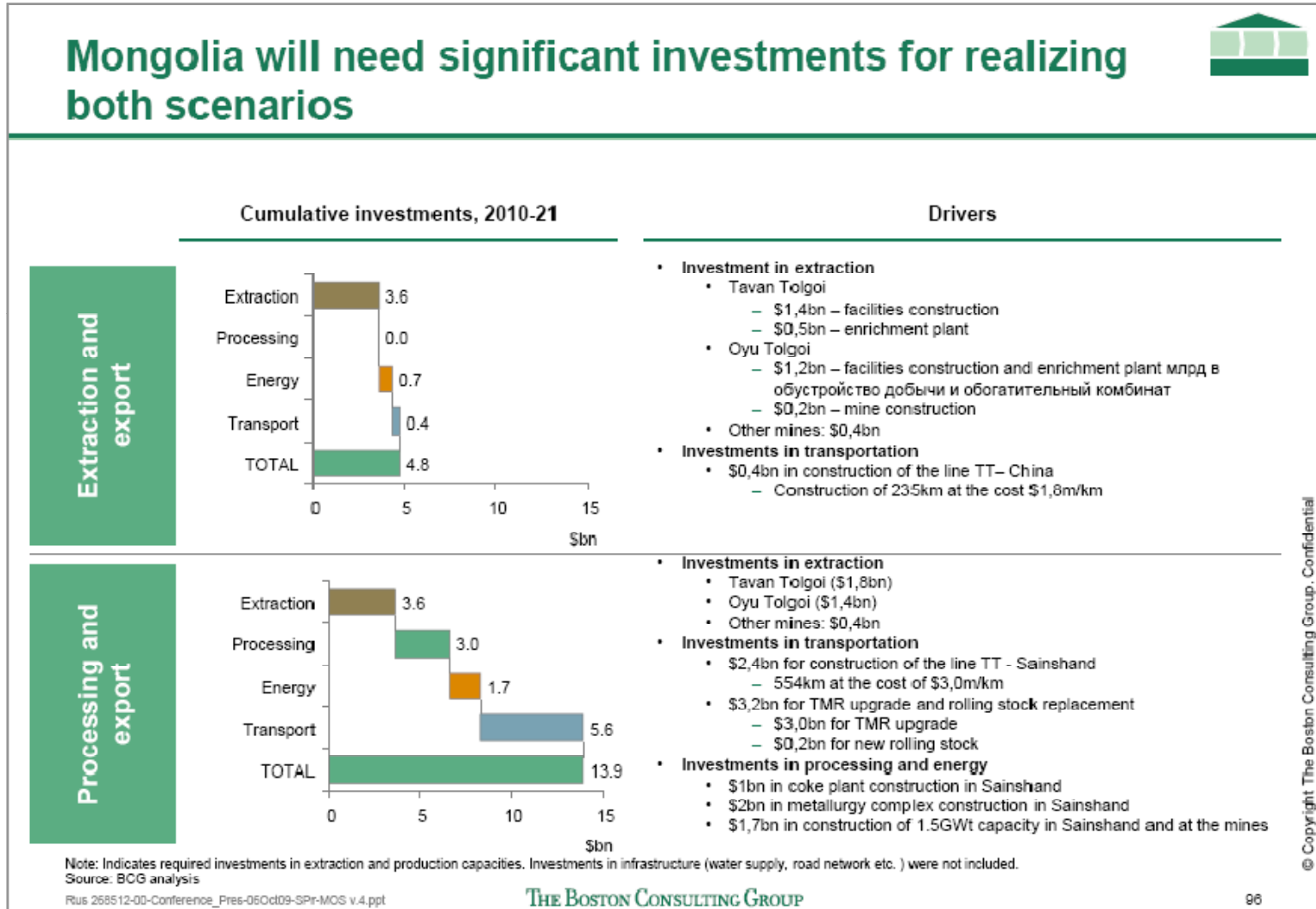
# Building of a new and modernization of an existing railway network would play a vital role in the achievement of the NDS objectives



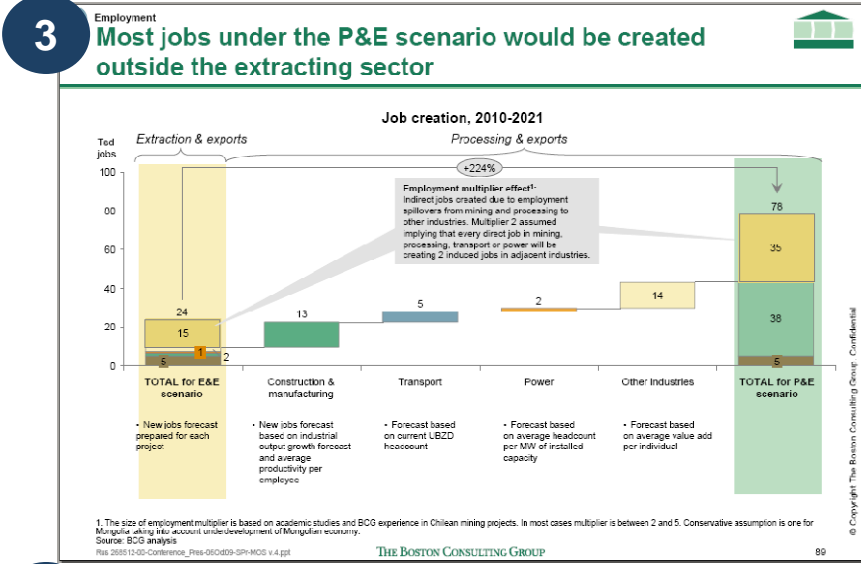
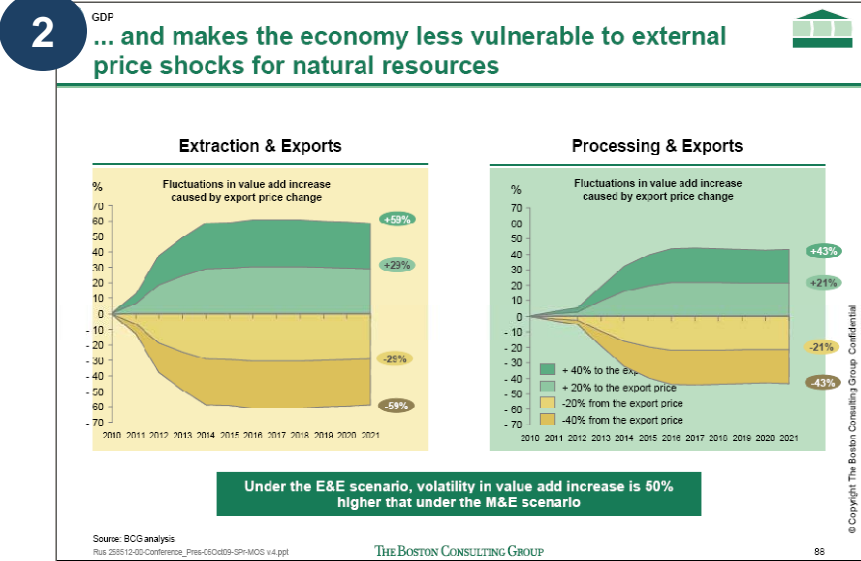
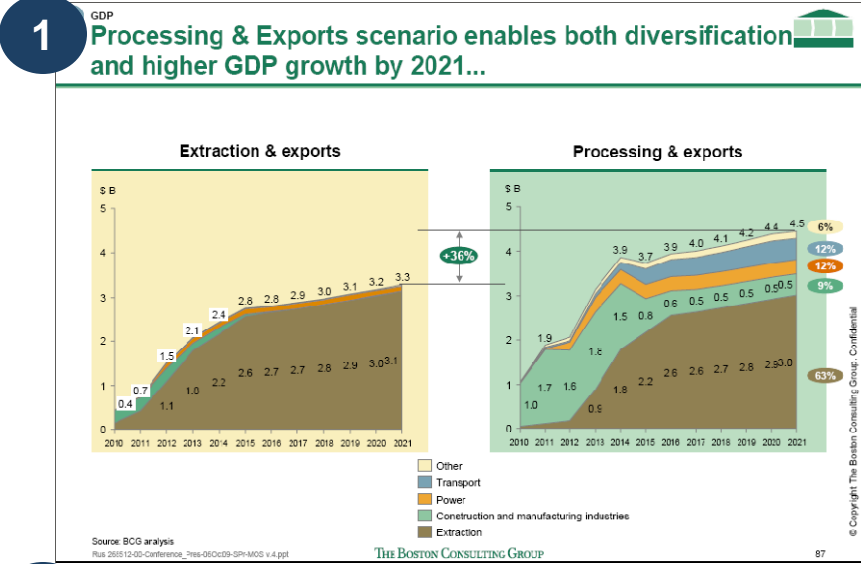
# Mongolia is planning to build 6,611 km of new highway network by 2016



# Mongolia would need totally about \$14 bln in investments, of which \$8.3 bln are in Sainshand industrial park, excluding highways



# According to BCG's socioeconomic impact for building railways and Sainshand industrial park...



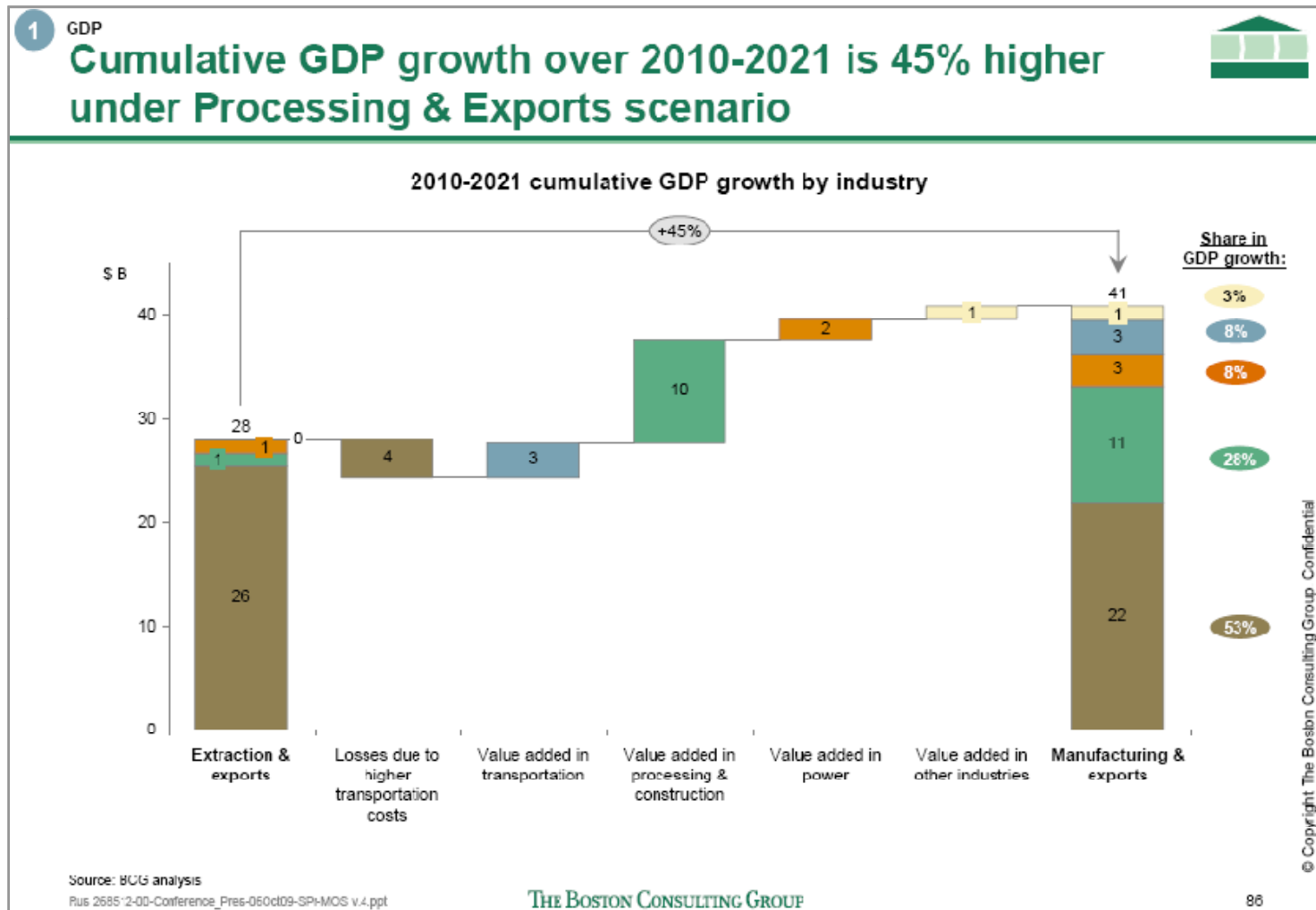
**4 P&E scenario provides better attainment of the goals set by the national development strategy**

Quantitative and qualitative study of contribution of scenarios vs. the goals of the national development strategy

|                       |   | Target 2021 <sup>1</sup>                                     | E&E scenario                                | P&E scenario  |
|-----------------------|---|--|---|---|
| GDP                   | GDP growth (%)                          | 12-14%   | 9% <sup>2</sup>                             | 10% <sup>2</sup>  |
|                       | Share of processing in GDP (%)          | x4   | -2pp  | +4pp  |
| Employment and people | Unemployment (%)                        | significant reduction  | +10-25 th. p.                               | +40-80 th. p.   |
|                       | Below the poverty line (%)              | regional center with ~100k population                        | slow development                            | development of the South Gobi and Sainshand   |
| Infrastructure        | Technoparks and technological develop-t | technology & industrial parks are established                | unchanged                                   | Sainshand industrial cluster is established   |
|                       | Road and rail network density           | density growth   | unchanged                                   | railway length increased by 30%   |
|                       | Energy production                       | domestic power demand satisfied                              | unchanged                                   | 1,6GWt capacity, self-sustainability  |
|                       | Railway construction                    | double track TMR, Eastern and 2 <sup>nd</sup> railway in use | one-track TMR, disintegrated railway system | double track TMR, integrated line at TT, Eastern line to be constructed in the future |

1. Defined by the strategy of national development and goals of millennium development  
 2. Low growth in constant dollars  
 Source: BCG macroeconomic model  
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# BCG estimates that industrialization would bring \$41 bln to Mongolian GDP over 11 years compared to \$28 bln on extraction and exports option





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