BCG

Opportunities and challenges in the BTG space

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THE BOSTON CONSULTING GROUP

Your speakers for today

Arun Bruce, BCG

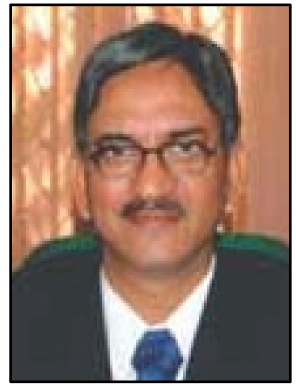
Principal and BCG India topic leader for Engineering sector

Experienced in serving engineering companies across a range of topics from strategy to operations

Deepak Chopra, Thermax

COO of Thermax Babcock and Wilcox

Over 30 years of experience in power industry in Asia and North America



KK Sharma, NTPC

Executive Director, Project Planning and Monitoring at NTPC

36 years of experience in various areas of power sector in India, with NTPC for over 30 years

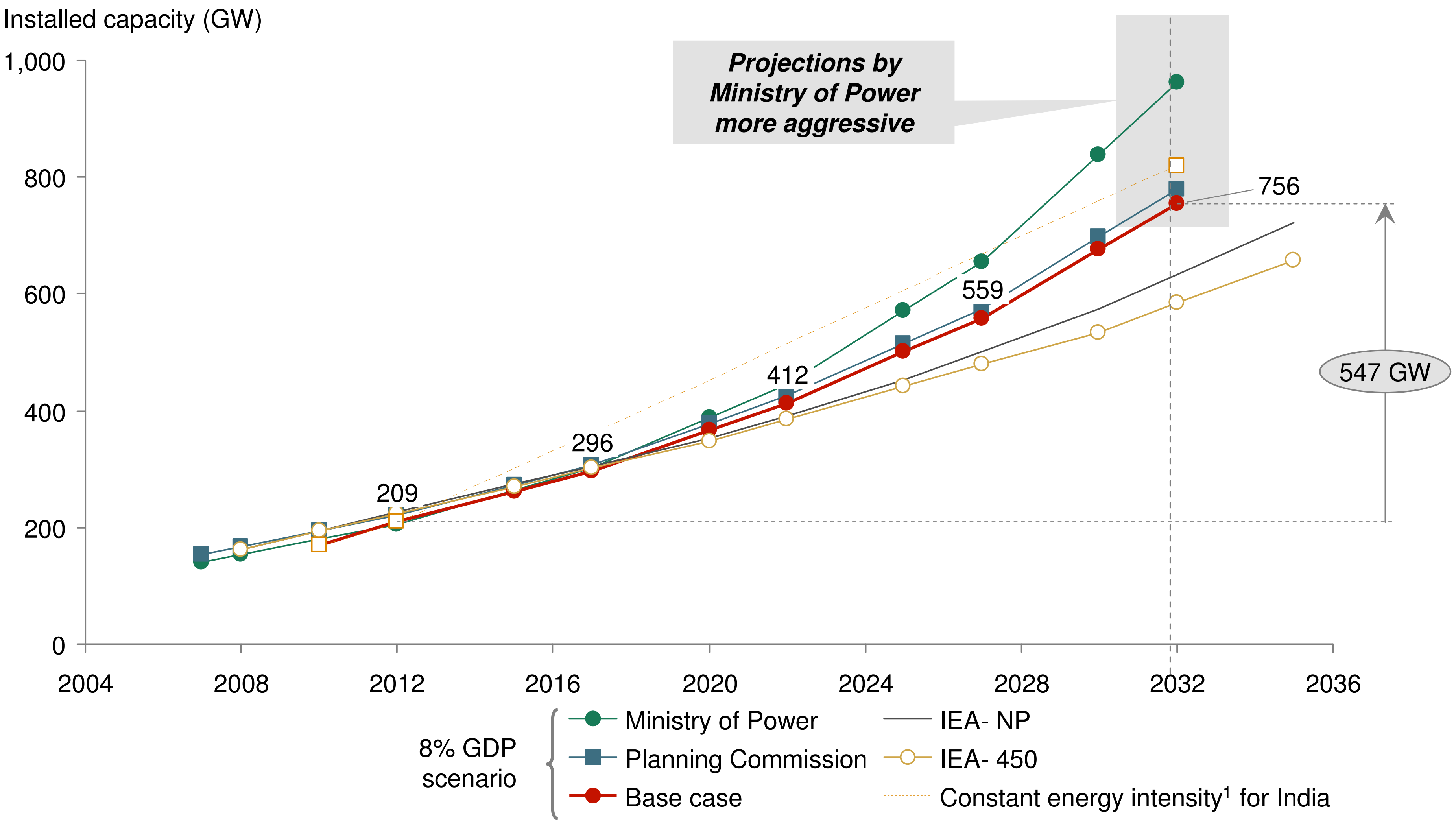
Praveer Sinha, Tata Power

CEO and Executive Director at Tata Power Delhi Distribution Ltd.

Over 28 years of experience. Expertise in developing and setting up green field projects

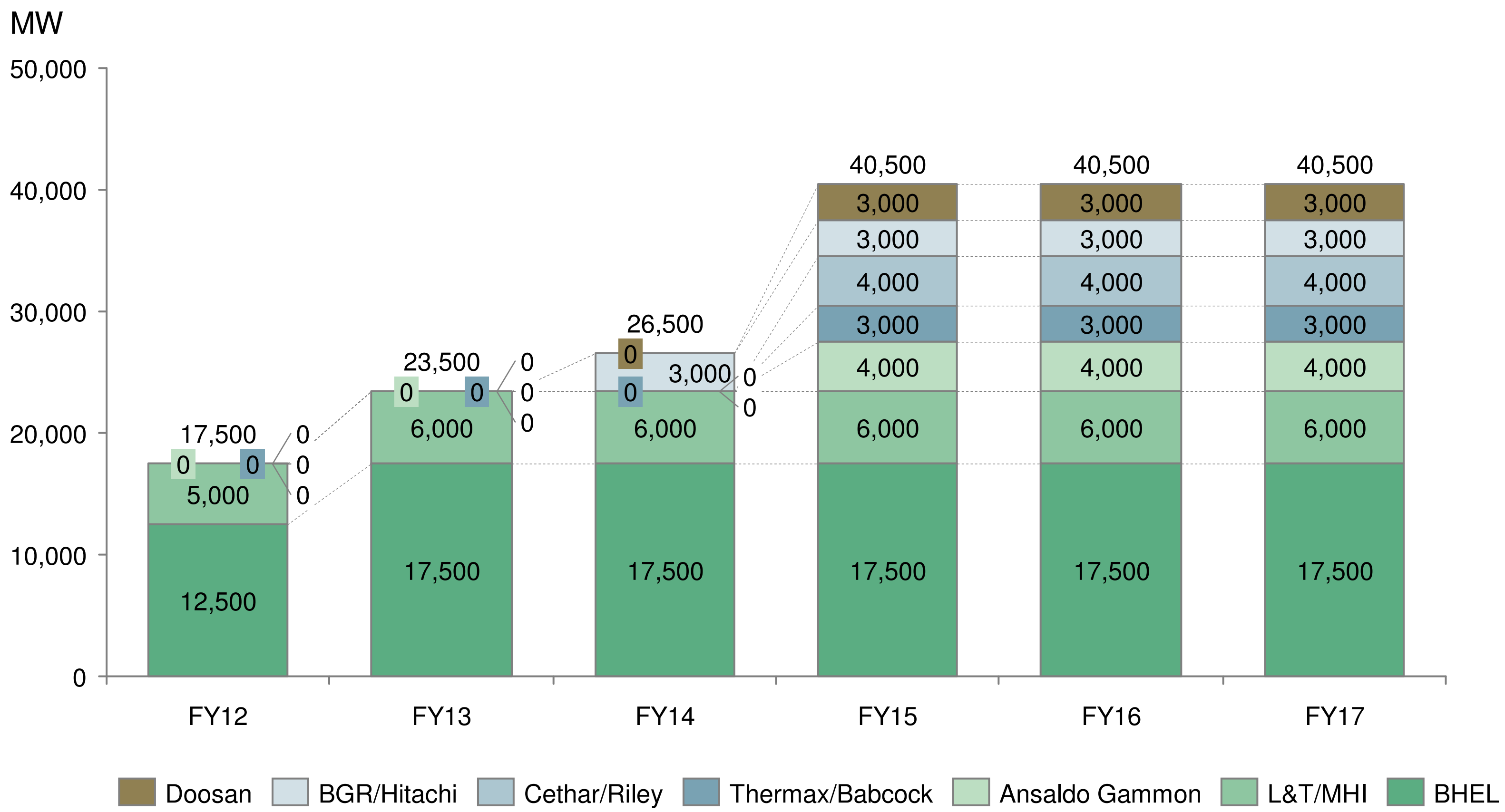
India needs power to grow!

We would need 550 GW capacity addition over next 20 years @ 27.5 GW/year



1. Energy intensity here is defined as ratio of electricity consumed (Kwh/capita) and GDP per capita (calculated in US$, based on dollar value in 2000 terms)
Note: Constant energy intensity assumes India maintains the value at ~0.78, lower than China (~1.16), but higher than Brazil (~0.5); Planning Commission estimates factor in improvement in intensity
Source: IEA key statistics, World Energy Outlook 2010, Integrated Energy Policy (Government of India)

Expecting strong demand pickup, capacities were put up ahead of time E.g Boiler capacities

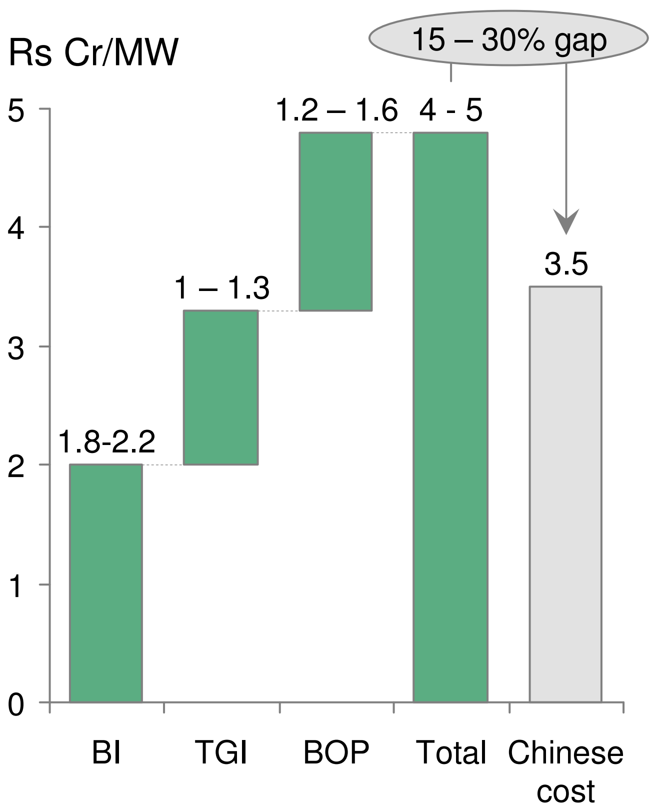


Yet, competitiveness in comparison to imports was a long-standing problem

Source: Company websites

The gap against Chinese imports should narrow in next plan due to recently imposed duty hikes

Gap in landed cost in 2011



Proposed duty structure changes

CD : **5%**

CVD : **12%**

SAD : **4%**

Net : **~21%**

Objective

Chinese imports at par or marginally cheaper than Indian made BTG

Yet, oversupply, productivity and sub-scale issues will remain

<u>Oversupply</u>
- *40GW boiler capacity vs <20 GW domestic demand*

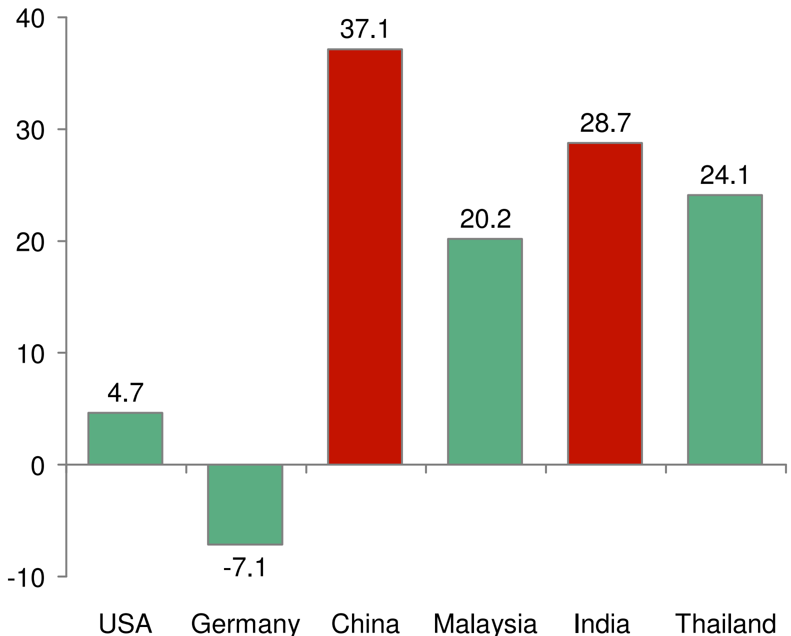
<u>Productivity:</u>
- Average labour productivity in Chinese hvg engg factories 2-3 x Indian factories

<u>Sub-scale</u>
- Top 3 Chinese players each with 25 GW BTG capacity, vs BHEL @17.5GW, others between 3-8 GW

At the same time, China continually losing its position as low cost manufacturer

High wage inflation in India and China affecting labour cost competitiveness

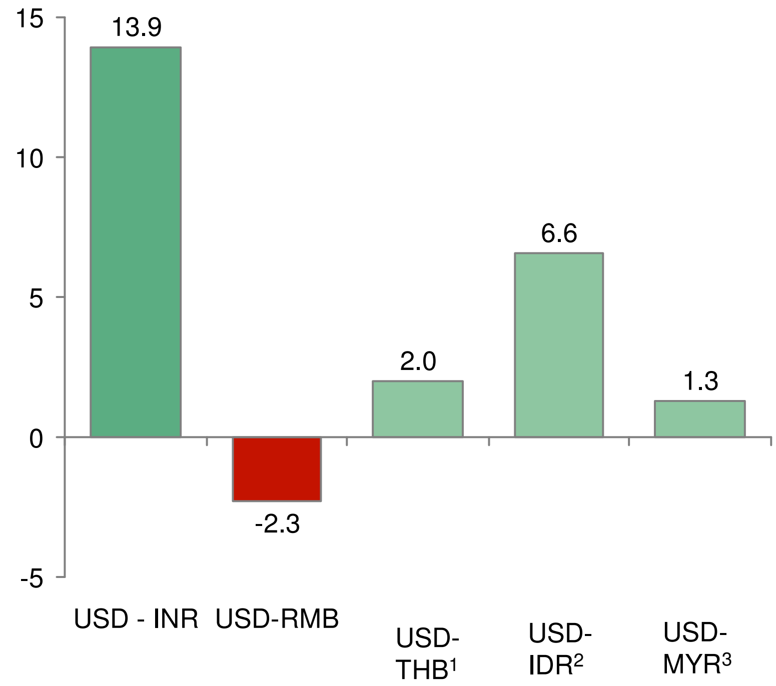
% Change over past 24 months (2009-2011)



Avg. monthly wages (USD) (2011)	USA	Germany	China	Malaysia	India	Thailand
	4210	2970	539	672	493	314

Depreciating Chinese Yuan making it unattractive in global markets

% Change over past 12 months

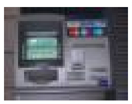
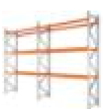


Can India take its place?

1. THB – Thai Bhat, 2. IDR– Indonesian rupiah, 3. MYR – Malaysian ringgit

Source: Economist Intelligence Unit, U.S. Bureau of Economic Analysis, Central Statistical Organization of India, Index Mudi, Oanda Data base, BCG Analysis

Other sectors continually diversifying away from China

	Company/category	Trend/development
	**Microwaves / Washing Machines**	*Leading Indian company looking to shift from china procurement to setting up India base with select component procurement from China*
	**Plastic toys**	*Global leader in toys assessing India as alternate base to China for 'simpler' plastic toys*
	**ATMs**	*Leading manufacture of ATM shut down Chinese plant and shifted production back to USA*
	**Locks and hardware**	*Market leader looking to re-start local production of door hardware (erstwhile sourced from China/taiwan)*
	**Steel shelves, racks for warehouses**	*Worlds' leading shelving providers setting up base in Malaysia to take advantage of local taxes and lower production costs*
	**Textiles**	*All leading China-based players have developed additional bases in Vietnam and other low-cost countries e.g. Bangladesh*

Leading companies are constantly re-assessing and optimizing their exposure to various countries

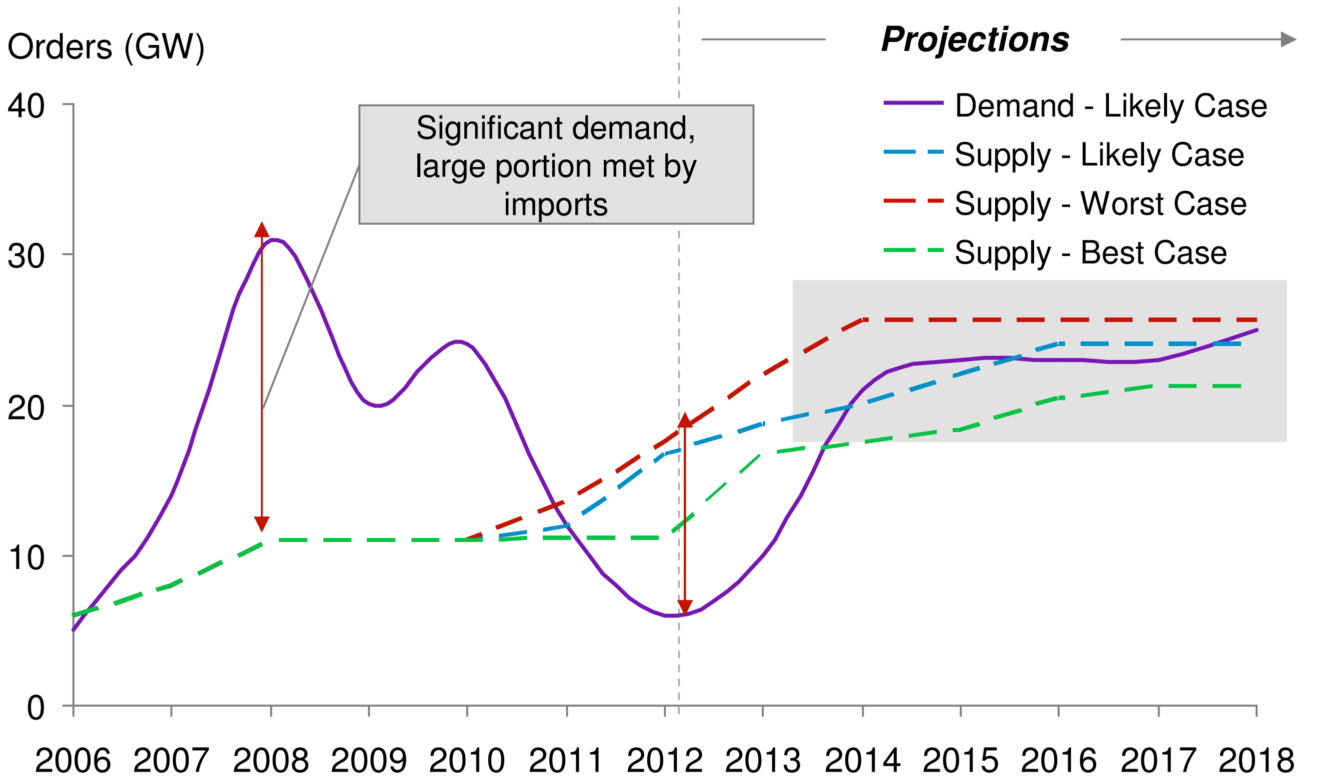
Few questions for us to deliberate on:

1. ***Given the strong long term demand for power, how do we accelerate growth in the BTG sector in the short-to-medium term?***
2. ***Given the short term potential overcapacity situation in BTG, what should BTG players do to survive and excel?***
3. ***What non-subsidy levers exist to defend share against low cost Chinese imports of BTG equipment? What should BTG manufacturers be doing?***
4. ***With rising manufacturing costs in China, can India aspire to become the next big low-cost manufacturer of BTG equipments to the world? What will it take to achieve this objective?***

Unused slides

Sufficient or excess supply built ahead of the curve

Boiler domestic supply and demand scenario



Note: Assumed capacity utilization@ 80%
Source: Analyst Reports, Press search, BCG analysis