

# **CO<sub>2</sub> Baseline Database for Indian Power Sector**

**B.K.Sharma  
Chief Engineer  
Central Electricity Authority**

# Installed Capacity as on 30.04.2016

- Fossil fuel based capacity - 212 GW (70%)
- Non-Fossil fuel based capacity - 91 GW (30%)
- Though, India has massive plan of increasing Renewable capacity from existing 43 GW to 175 GW by 2022, Country would still need to add about 100 GW of fossil fuel based capacity by 2027.

# GENERATION SCENARIO

Thermal Generation (2015-16)	-943 BU(85%)
Hydro Generation (2015-16)	-121 BU(11%)
Nuclear Generation (2015-16)	-37.4 BU(3.4%)

---

Total Generation	-1107 BU
------------------	----------

---

# GROWTH OF COAL BASED GENERATION CAPACITY

YEAR	COAL CAPACITY	GROWTH
2011-12	112 GW	
2012-13	130 GW	16%
2013-14	145 GW	12%
2014-15	164 GW	13%
2015-16	185 GW	13%

# GROWTH OF COAL CONSUMPTION

YEAR	COAL CAPACITY	GROWTH
2011-12	417.5 Million Tonnes	
2012-13	454.6 Million Tonnes	16%
2013-14	489.4 Million Tonnes	12%
2014-15	531.5 Million Tonnes	13%
2015-16	185 Million Tonnes	13%

# Main Sources of GHG Emissions- mainly CO<sub>2</sub> emissions

## Major contributors :

- Energy Sector
- Transport Sector
- Agriculture Sector
- Industrial Sector

The power sector contributes more than 50% of total GHG emissions.

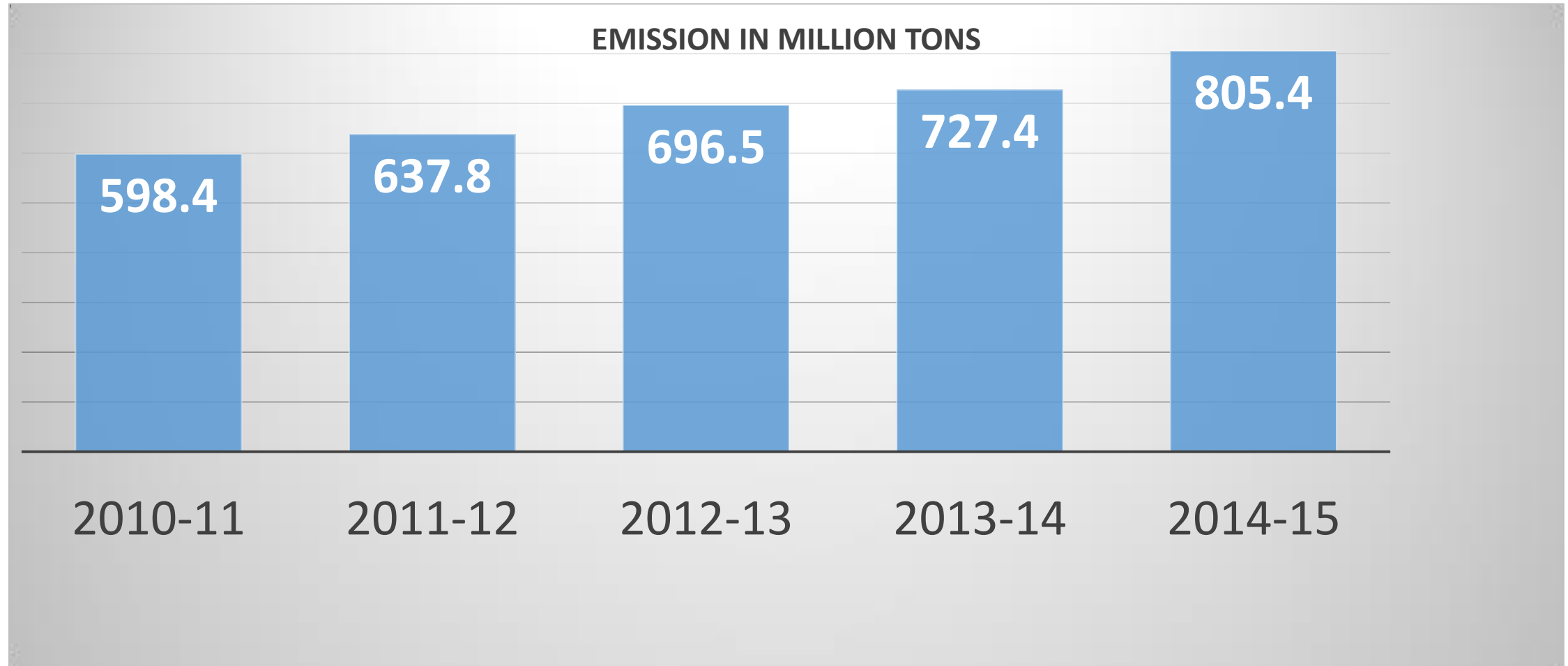
# CO<sub>2</sub> Emissions from Power Sector

- To establish authentic and consistent quantification of CO<sub>2</sub> baseline for Indian power sector using approved CDM methodology, CEA took the initiative of carrying out studies to calculate total CO<sub>2</sub> emissions from all grid connected power stations on annual basis.
- The first version of the complied database and user Guide was published in 2006. This activity was taken up under IGEF. The support of Govt. of Germany has been extended to CEA by engaging M/s First Climate, Switzerland as consultant for reviewing the accuracy and consistency of database w.r.t. approved CDM methodologies for calculating CO<sub>2</sub> emissions.

- This year Version:11 of this Database & User Guide have been prepared and it is available on CEA website-[www.cea.nic.in](http://www.cea.nic.in)
- Now CEA have adequate experience and expertise to continue this activity independently in future.
- CEA acknowledge & appreciate the support provided by Govt. of Germany in carrying out this activity.

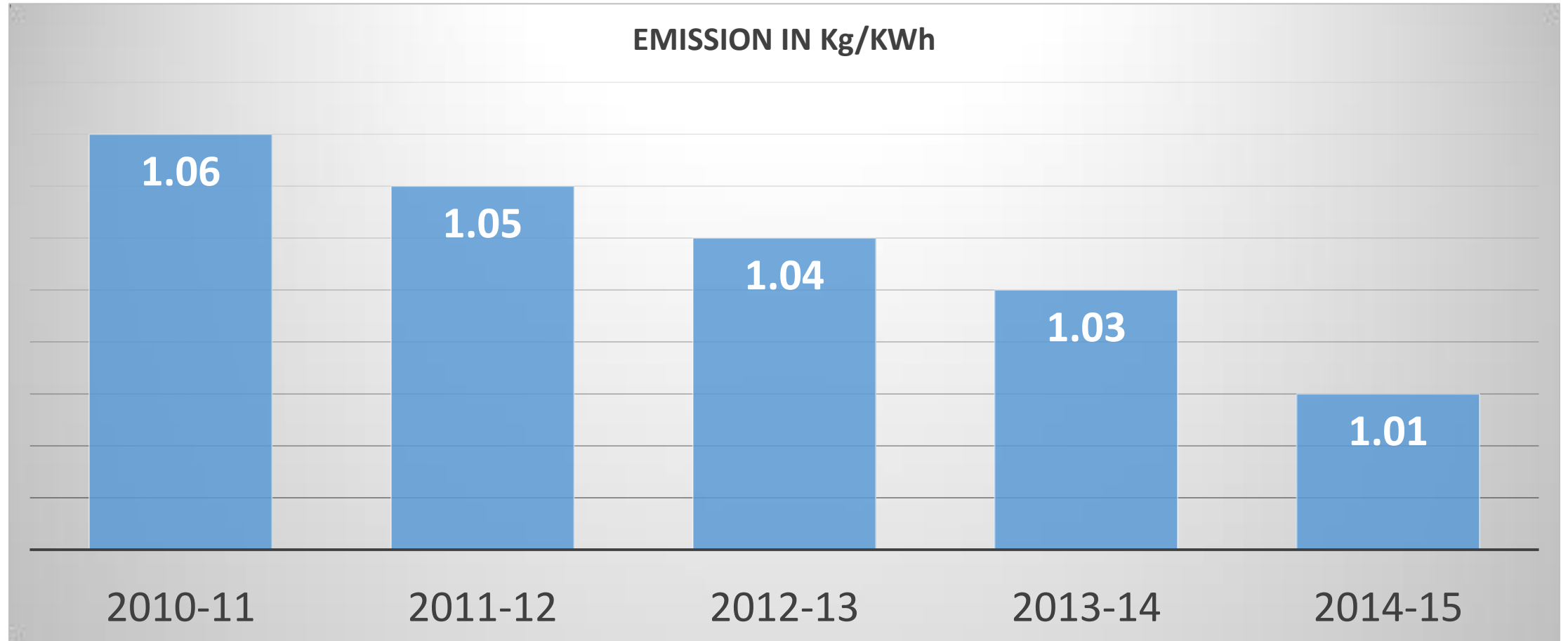


# Absolute CO<sub>2</sub> Emissions from Indian Power Sector



Emissions are from Grid Connected power stations

# Specific CO<sub>2</sub> Emissions from Coal based stations



THANKS