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## Topic 2

**A)** Following are the values of **X, Y, Z** based on data available for the year ending on March 2003.

**Y** (Installed nominal capacity of Indian Thermal plants) = **76,606.91 MW**

(source: Ministry of Power- Highlights and Main Achievements 2003)

**X** (Average plant load factor of Indian thermal power plants)= **0.717**

(source: Ministry of Power Annual Report 2002-03)

**Z** = thermal Power generation =  $76606.91 \times 0.717 \times 8760 = 481161873.20$  MWh = 481.162 BU

**B)** Power load factor of Wind power is about **0.30** (Basis: BSES Wind farm project, Jogimatti, Dist. Chitradurg)

Power generation from 500 MW wind park with 0.30 PLF =  $500 \times 0.30 \times 8760$   
= **1314000 MWh**

**C)** Percentage of electricity generated by a 500 MW coal fired power unit will be replaced by the wind park will be the ratio of PLF of wind park to PLF of coal fired power unit =  $(0.30/0.717) \times 100$   
= **41.80**