

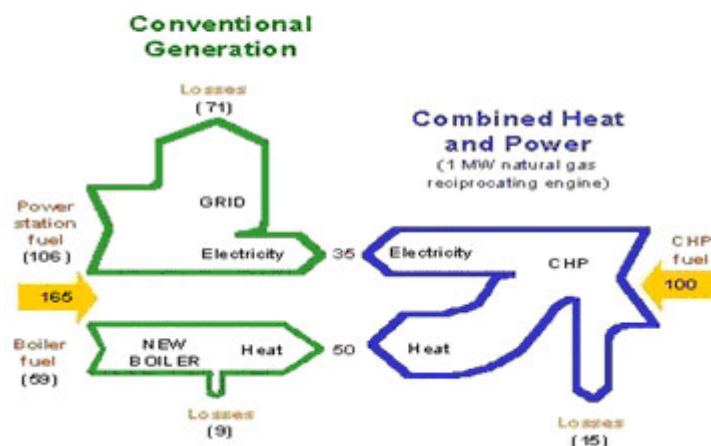
USE OF HIGH PRESSURE BOILERS WITH INCREASE EFFICIENCY FOR INDUSTRIAL CO-GENERATION APPLICATION

B.Shukla

Managing Director & chief consultant,
WHITE POWERCON.
#2082, 1st main 4th cross, Judicial Layout. GKVK Post,
BANGALORE
KARNATAKA-560065

Increasing Industrial, Electronic and computerization growth in recent past, has emerged with many fold demand of Power. In spite of phenomenal capacity increase in power sector the gap between demand and generation is becoming wider and wider. It is high time to give an revolutionary and sincere thought on Co-Generation to be as substantial means for power Generation to ease the power situation by replacing the old 18-21 Kg/cm² boiler to high pressure up to 140 bar and 530 °C Boilers and from single stage (mostly) inefficient mostly single or double stage impulse turbines with multistage highly efficient reaction turbines in sugar industries. In a country like ours where we have got large no of sugar industries located in the rural area producing higher quantity of sugar should opt for co Gen, adopting latest innovative technology. With the present installed capacity the sugar industries can produce more than 6000MW of power adopting the new high efficient Technology.

How Cogeneration Saves Energy



A sugar industries having crushing capacity of 2500 cane can produce 8MW of power and can easily export 5MW to grid after meeting their own requirement of 3MW. This has been possible mainly because of renewable sugar crops which generate captive fuels in form of bagasse of appreciable calorific value. At present most of sugar mills are operating at low pressure and generate power to meet their self requirements.

As we know sugar industries are the only of their kind who have not suffered set back on account of energy crisis and are the only which generate own fuels, steam and power. The steam utility in sugar industries is to the extent of more than 80% and is the most perfect in the direction of Rankin's cycle.

Another significant aspect to be considered is that the irrigation power requirement which is between November to May and coincides with the crushing period and the surplus power generated by sugar industries can meet the requirements of irrigation when the Hydel power is mostly not available.

The Major advantage of Co- Gen power is :-

- A-Most techno- commercial viable Projects with short pay back.
- B-Cost of power production is very cheap compare to that of purchase power.
- C-Dependability and reliability with quality of power.
- D-Quick return on investments.
- E-Restore ecological imbalance.
- F-Ability to use Bio-Mass and organic matters like wood, grass and agro and municipal wastes.
- G-Availability of power between Nov. to May when Hydel power availability less.

H-provides economical and timely solution of Power problems.

The Major steps to be taken for self reliance if Co-Gen Power are

- 1-Saving of Bagasse by adopting high technology HP Boilers
 - 2-Reduction of moisture in bagasse 50 to 45% by improving Milling Technique.
 - 3-Reduction in Process steam consumptions in evaporator and Prime movers
BLTFF evaporators
 - 4- Reduction in live steam consumption by using multi stage reaction Turbines.
 - 5- Reduction in over consumptions of power TCH using new technique of
Variable drives and high efficient auxiliaries.
 - 6-improve crushing rate by having quality power
- SAVING to EFFICIENT and ECONOMICAL USES