

Producer gas with ammonia recovery is equally able to produce electric current at a price per unit of 0.017 sh. = 0.2 d.

In the case of small plants, steam-power may become as cheap; and for several reasons more suitable than gas. On account of the long yearly runs, it pays to make the plant as up-to-date as possible. The engines ought to work on super-heated steam, and be provided with best Corliss, or other precision valves. The speed should be low. The cost of the electric current should not need to exceed 0.034 sh. = 0.4 d. per kilowatt-hours, even for a plant of only 250 horse-power.

The cost for the lining depends mainly on its life. At the Krupp furnace the lining has lasted up to six weeks, and will, after more experience, last longer. In treating liquid steel, when the slag-line is maintained at one and the same level, a repairing of weak places is easier done, than if cold materials are melted.

With proper attention, and by adding lime in front of the inner wall, only little work will be needed for repairing smaller defects.

Instead of spending much time on frequent repairs, it is more essential to use the crucible as long as possible, and to have a spare crucible at hand for exchange, so that only a short interruption is necessary.

The cost of relining, including current for bringing the crucible up to full heat, at 0.4 d. per unit is approximately:—

For a furnace of 1,800 kg. capacity	=	900 sh.
“ “ 3,000 “	=	1,500 “
“ “ 10,000 “	=	3,000 “
“ “ 15,000 “	=	6,000 “

The number of men necessary if melting cold materials at a furnace

of	1.8	3	10 tons.
Foreman	1	1	1
Men for charging	2
Men to bring in and weigh raw materials	2	2	1
Men for ladle and casting arrangements	1	1	2
Men for moulds	1	1
Crane driver	1	1	1
Total	5	6	8

The number of extra men necessary for treating liquid steel from a Bessemer, or Siemens-Martin furnace, depends on the kind of work required from the electric furnace.

If the steel is only raised in temperature and deoxidized, one or two men would be sufficient to make the additions, keep the spout clean, and to look after the extra ladle wanted for the transfer of the steel from one furnace to the other.

If the steel is to be subjected to a dephosphorization, one or two more men will become necessary, depending upon the size of the furnace.

To give an idea of the costs of the electric melting, calculations have been made to suit varying conditions.