

Energy Efficiency Division

Process Industry

Save energy,
get profit

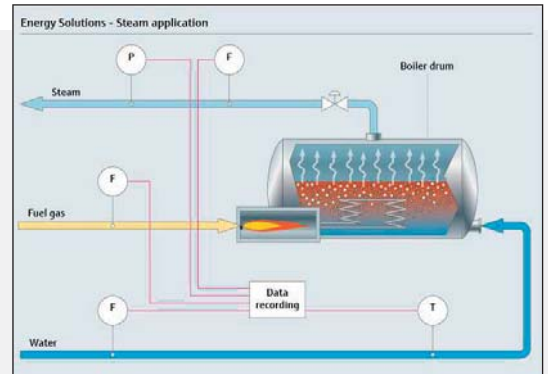




MEASUREMENT

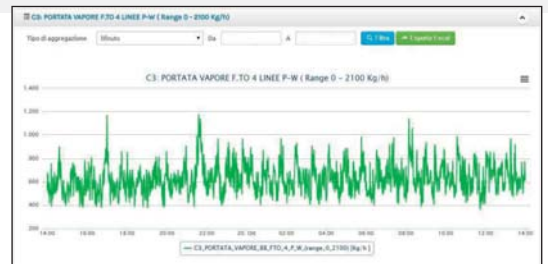
Temperature – Pressure – Heat power

Customer needed to know the specific cost of the lowpressure steam production, and if possible to reduce the total amount of steam request in the factory. That's why was decided a continuous collection of data for 6 months (1 minute sample) in order to define the baseline of consumption, peaks and losses.



DATA ANALYSIS

- Steam production in 6 months: 101.340 kg per day
- Total Consumption: 86.100 kg per day
- Total losses: 15.240 kg per day



ACTION

There are three types of losses:

- Steam production: 12%
- Steam transport: 62%
- Steam utilization: 26%

Even if heaters are from 1976 production, the changing for new types is not profitable (efficiency heaters is in media 88%), what is necessary is to coat the 60% of pipes and reduce the loss steam during the process.



MONITORING

The system is now supported by a continuous monitoring to prevent problems (specific alarms settled as per customer requirements) and at the same time to verify that the efficiency level reached is maintained.

Data	Rendimento_Pompa_P2	Lavoro_Pompa_P2	Potenza_ele_Pompa_2
20/07/2015 12:00	45,88	21,82	47,76
20/07/2015 13:00	29,63	15,93	53,76
20/07/2015 14:00	32,39	17,13	52,88
20/07/2015 15:00	32,96	17,36	52,68
20/07/2015 16:00	32,96	17,11	52,88
20/07/2015 17:00	32,25	17,1	53
20/07/2015 18:00	32,6	17,2	52,76
20/07/2015 19:00	33,27	17,51	52,64
20/07/2015 20:00	32,54	17,17	52,76
20/07/2015 21:00	32,5	17,12	52,68
20/07/2015 22:00	32,28	17,07	52,88
20/07/2015 23:00	32,49	17,11	52,68
21/07/2015 00:00	32,86	17,31	52,68
21/07/2015 01:00	32,4	17,13	52,88
21/07/2015 02:00	33,43	17,61	52,68
21/07/2015 03:00	31,93	16,95	53,08
21/07/2015 04:00	32,84	17,36	52,84
21/07/2015 05:00	33,02	17,4	52,68
21/07/2015 06:00	32,41	17,07	52,68
21/07/2015 07:00	15,87	8,77	55,24



RESULTS

The low-pressure steam production has been reduced by about 28% without changing the process.

RESULTS

BEFORE: **32.428.800 kg per year**
 AFTER: **23.888.710 kg per year**
 DIFFERENCE €: **130.801,80 Euro/year**
 ROI: **9 months**