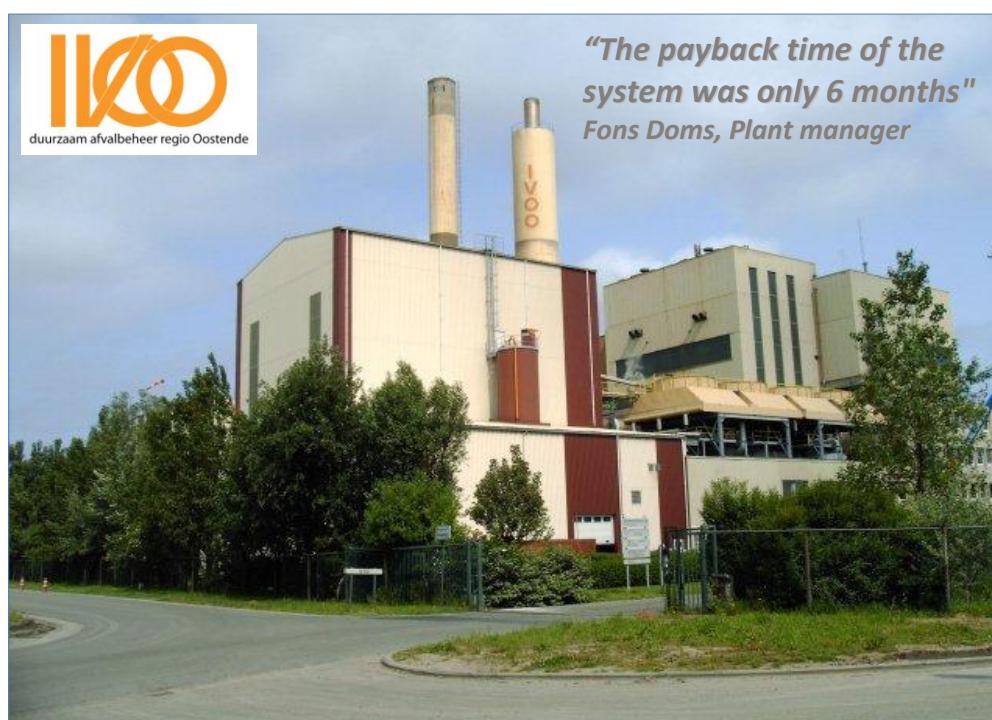


Performance increase in a Waste to Energy plant

Case study: How the IVOO optimization project was implemented and the results of it

Introduction

The IVOO WtE plant has two combustion lines with conventional grate furnaces built in 1981, processing a mix of household and industrial waste. The nominal capacity of each line is 5.6 t waste/h producing 13 t steam/h. The steam is used in a common turbo generator.



The IVOO WtE Plant in Oostende, Belgium

Making a well maintained Waste to Energy plant more efficient

The plant staff complained about declining efficiency, it was difficult to maintain production close to the design capacity. The steam production fluctuated with changes in fuel quality.

To explore the possibilities, Dublix conducted an onsite feasibility study. The IVOO plant would benefit from an installation of a FuzEvent control system. To gain full advantage, the instrumentation needed an upgrade: O₂ measurement after the economizer, flow meters for primary and secondary air, measurements of the pressure in each compartment under each grate section, etc.

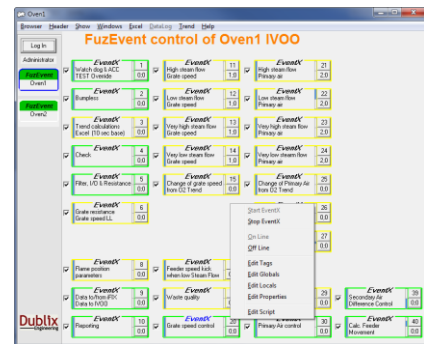
Problems discovered included: Unstable boiler feed water supply and manual control of waste feeding and of combustion air flow.

The project

An important thing to understand is that the FuzEvent system is not replacing the operators but assisting them in performing better than average. The system takes advantage of the overview and patience of a machine and eliminates the negative human factors such as being tired, losing focus....

Dublix Engineering A/S

- Feb. 2010 Initial contact to customer established. During a plant visit, general instrumentation issues were discussed: O₂ measurement, primary air flows and pressures.
- Oct. 2010. Feasibility study was performed by two Dublix specialists over three days.
- Jan. 2011. Order placed for the implementation of FuzEvent on both combustion lines. Detailed design of the project starts. Procurement of hardware and software licences.
- Feb. 2011. Detailed design meetings on site to define control strategies, communication, TAGs and operator interface.
- The FuzEvent control system is programmed. Detailed plant-specific FuzEvent operations manual is drafted.
- June 2011. The first combustion line is commissioned and tested.
- Aug. 2011. The second combustion line is commissioned and tested, incorporating the experience gained from the FuzEvent control of the first line.
- Oct. 2011 Report on the performance test is issued. The result shows an increase in stability of 37% and a 4% increased steam production. Dublix obtains full bonus for exceeding the improvement goals stated in the contract.
- Nov. 2011 Refinement of the FuzEvent control facilitates a further increase of stability. This in turn permits an increase in the average steam production to 14 t steam/h on each line.
- Jan. 2012 Service contract was signed.



- *The result of the implemented system was impressive. We have obtained 10% more electricity production and the waste treatment capacity has increased by 6.5% registered each year during the first two years of operation.*
- *The annual waste treatment capacity was increased with total 4.000 ton/year.*

Fons Doms, Plant Manager

- *The FuzEvent operator assistant is fully accepted by the operators and helps me maintaining very high operational efficiency.*
- *The plant availability has increased. FuzEvent is running all major control loops more than 95% of the time.*

Koen Laureins, Brigadier automatisati