

NAPCON OPTIMIZER

CREATES EXCELLENT LONG-TERM RETURN

Borealis Polymers Oy produces ethylene and other petrochemical products at its ethylene cracker in Porvoo, Finland. In 2003, Borealis had already used NAPCON Controller MPC (model predictive control) for several years, but wanted to still further increase profit by augmenting the MPC. Borealis ordered a Dynamic real-time Optimizer, NAPCON Optimizer from Neste Jacobs, which was taken into operation at the end of year 2004.

Borealis Polymers summarize 10 successful years of MPC and optimization:

"For the first operational year of NAPCON Optimizer, we recorded a profit increase of 12.5 million USD per annum thanks to better optimization against process constraints. Our estimate is that this on-line optimizer has continued to add the same amount of annual profit ever since then, meaning that we believe to have passed the cumulative profit milestone of 100 million USD. This was achieved by investing in NAPCON Optimizer technology and software package. However, to keep on-line optimization running successfully requires active follow-up and adjustments by our specialists as process knowledge and process behavior change over time, but that is definitely worthwhile the effort, thanks to the huge benefits it brings in".

Dr. Stefan Smeds,
Principal optimization specialist, Borealis Polymers

CLIENT

Borealis Polymers Oy, Porvoo, Finland

NESTE JACOBS DELIVERED THE FOLLOWING PRODUCTS AND SERVICES TO BOREALIS POLYMERS OY:

- NAPCON Controller MPC software package (Delivery finished 1999)
- NAPCON Optimizer Dynamic Real-time Optimization software package (Delivery 2003–2004)
- Full engineering and implementation services
- Client training

BENEFITS TO BOREALIS POLYMERS OY:

- Profit increase 12.5 million USD/a (recorded 2005)
- Cumulative profit more than 100 million USD (recorded 2014)
- Increase of ethylene, the main product of the cracker, 9% (recorded 2005)

NAPCON OPTIMIZER DELIVERY PROJECT HIGHLIGHTS:

- No process or control system shut-downs due to installation and commissioning of NAPCON
- No process equipment or instrumentation investments, only computer hardware, software and high-end engineering work
- Remote telecom connection between Client's process and Neste Jacobs
- Client was deeply engaged and involved in the project