

**Process intensification Quick scan(PI-quick scan) for Air Liquide Air Separation Unit (ASU) in Terneuzen.**

A PI-quick scan was carried out at ALTG Terneuzen ASU.

The backgrounds of the PI quick scan are explained in an Energy Transition Leaflet of Sentermovem.

The ASU produces oxygen, nitrogen and argon with a capacity of 550 ton oxygen per day.

Criteria for operation are: capacity, energy consumption, safety and reliability of supply to customers.

The intake meeting was organized 16<sup>th</sup> of December 2008. The PI-quick scan was carried out on 13<sup>th</sup> of March 2009 by H van den Berg (expert) and H Akse (expert) with presence of F van der Pas (Senternovem).

The following units are observed:

A. Main air compressor (CP11)	short term	1. actual operations versus design conditions
		2. design to checked against latest technology
		3. 3D turbines vanes
		4. redesign of compressor
B. Nitrogen liquefier unit (NLU)	long term	5. building an improved design
	short term	6. analysis of stop and go operation
C. Argon Purification unit (APU)	middle term	7. heat integration cold box to be reconsidered
	long term	8. realization of improved design
	medium term	9. heat integration cold box to be considered
	long term	10. revamp of design by using heat of process

Air Liquide will focus on the short term items first, to see if redesign and investments are possible.