Industrial challenges: can new European occupational exposure limits trigger European innovations ?

SCOEL, the Scientific Committee on Occupational Exposure Limits has recommended new limits for NO and NO_2 in June 2014:

NO

Employment, Social Affairs & Inclusion
SCOEL Recommendation on Nitrogen Monoxide
European Commission

8-hour TWA: 2 ppm (2.5 mg/m3)

NO_2

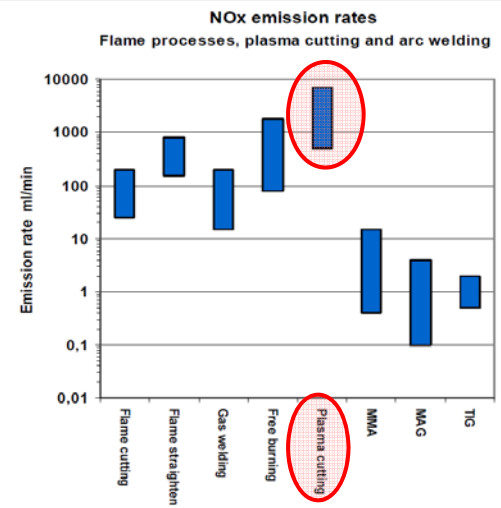
Employment, Social Affairs & Inclusion
SCOEL Recommendation on Nitrogen Dioxide
European Commission

8-hour TWA: 0.5 ppm (0.955 mg/m3)

STEL (15-min): 1 ppm (1.91 mg/m3)

Present value (8 hour TWA)	NO_2	Reduction [%]	NO	Reduction [%]
Sweden	2 ppm	75	25 ppm	92
Belgium, France	3 ppm	83	25 ppm	92
United Kingdom	3 ppm	83	35 ppm	94
Germany (Limits suspended)	(5 ppm)	90	25 ppm	92

Source: position paper of the German Raw Materials Extractive Industry, 09.09.2014



Logarithmic scale ! Source: "**Oxides of nitrogen in welding, cutting and oxy-acetylene heating processes**"; E. B. Hansen, J. Thernøe, FORCE Technology, Denmark

Exposure:

"Measurements during mechanized **plasma cutting** with high power torches and air or nitrogen as plasma gas *without* ventilation:

Plume concentration above the torch from 20 ppm to more than100 ppm NOx

Operators breathing zone 2 m from the cutting place varying between 2-16 ppm NOx"

There are probably tens of thousand (manual) plasma cutters in Europe exposed to NOx levels above the recommended new limits.

These are mainly craftsmen, construction workers or operators in SME metal job shops. Daily.

Can European R&D solve this dilemma and offer a new, competitive alternative ?