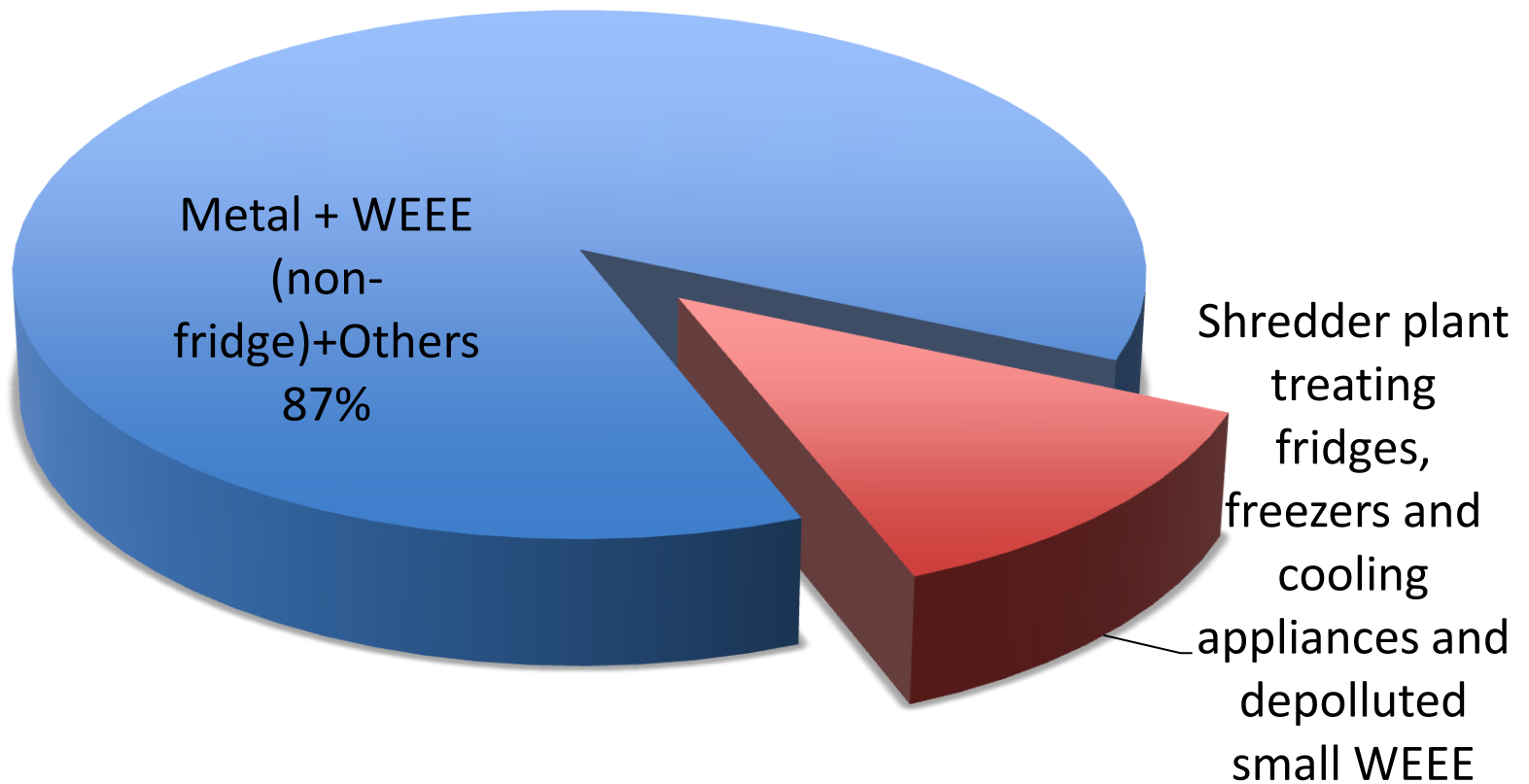
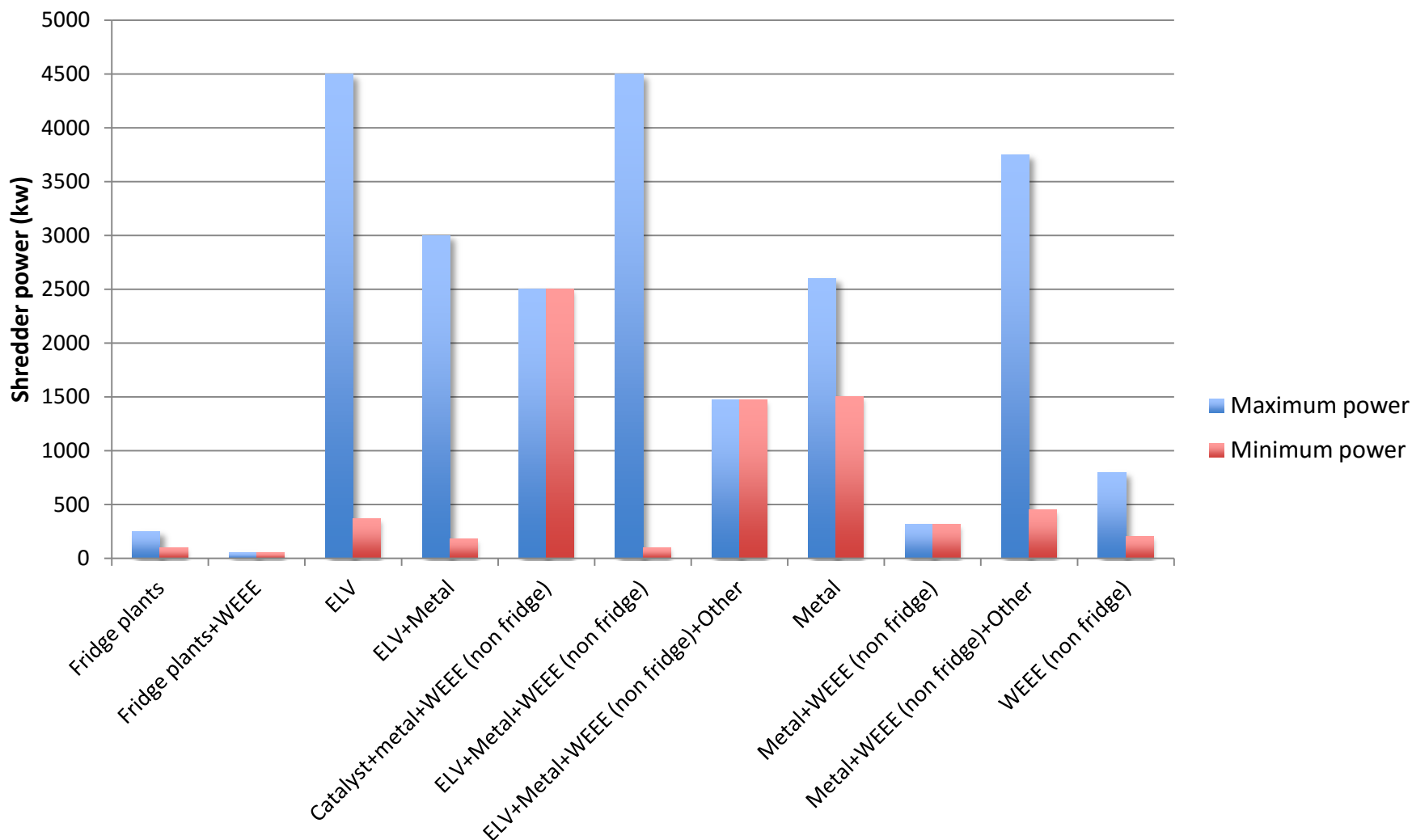


Categories of Metal waste Shredders



Category of shredder vs Minimum and Maximum shredder power

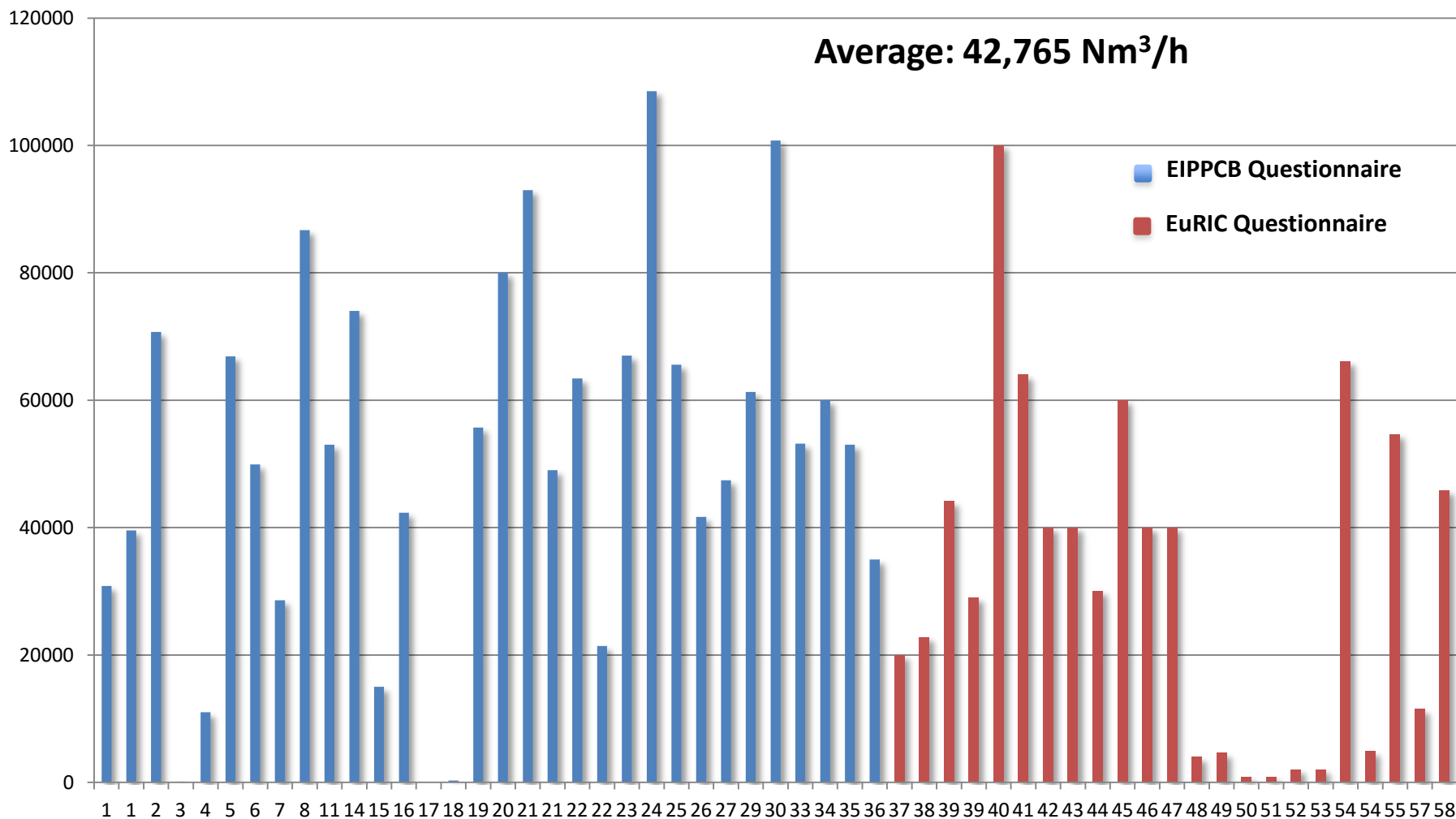


Emissions to air

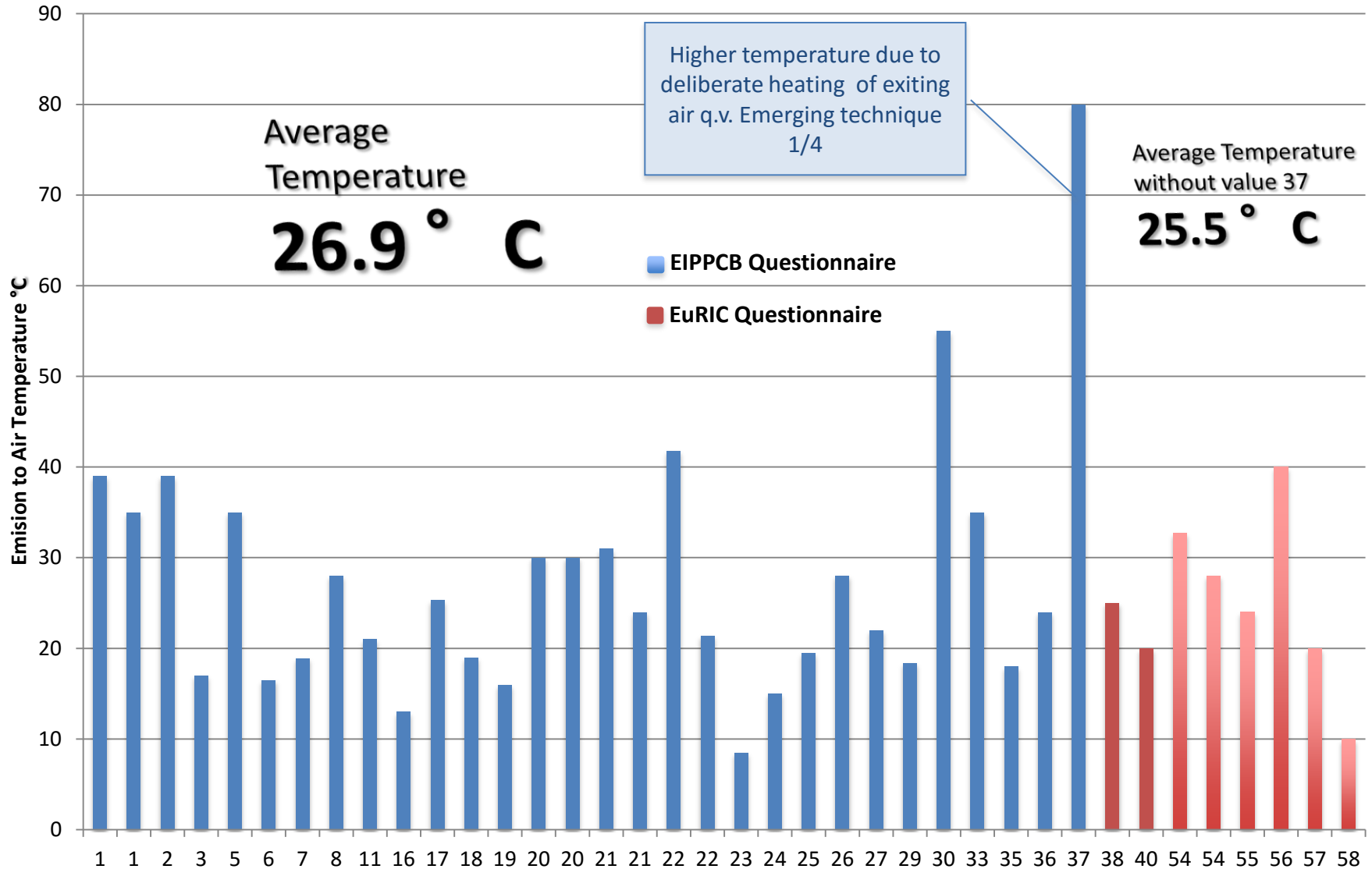
- Dust is the predominant and relevant parameter for metal waste shredders
- Techniques and practices that efficiently reduce dust have also an impact on metallic particles and organic components (TOC)
- VOC questions are mainly connected to hydrocarbons from fluids remaining in End-of-Life Vehicle so proper depollution is essential (Member State enforcement responsibility)



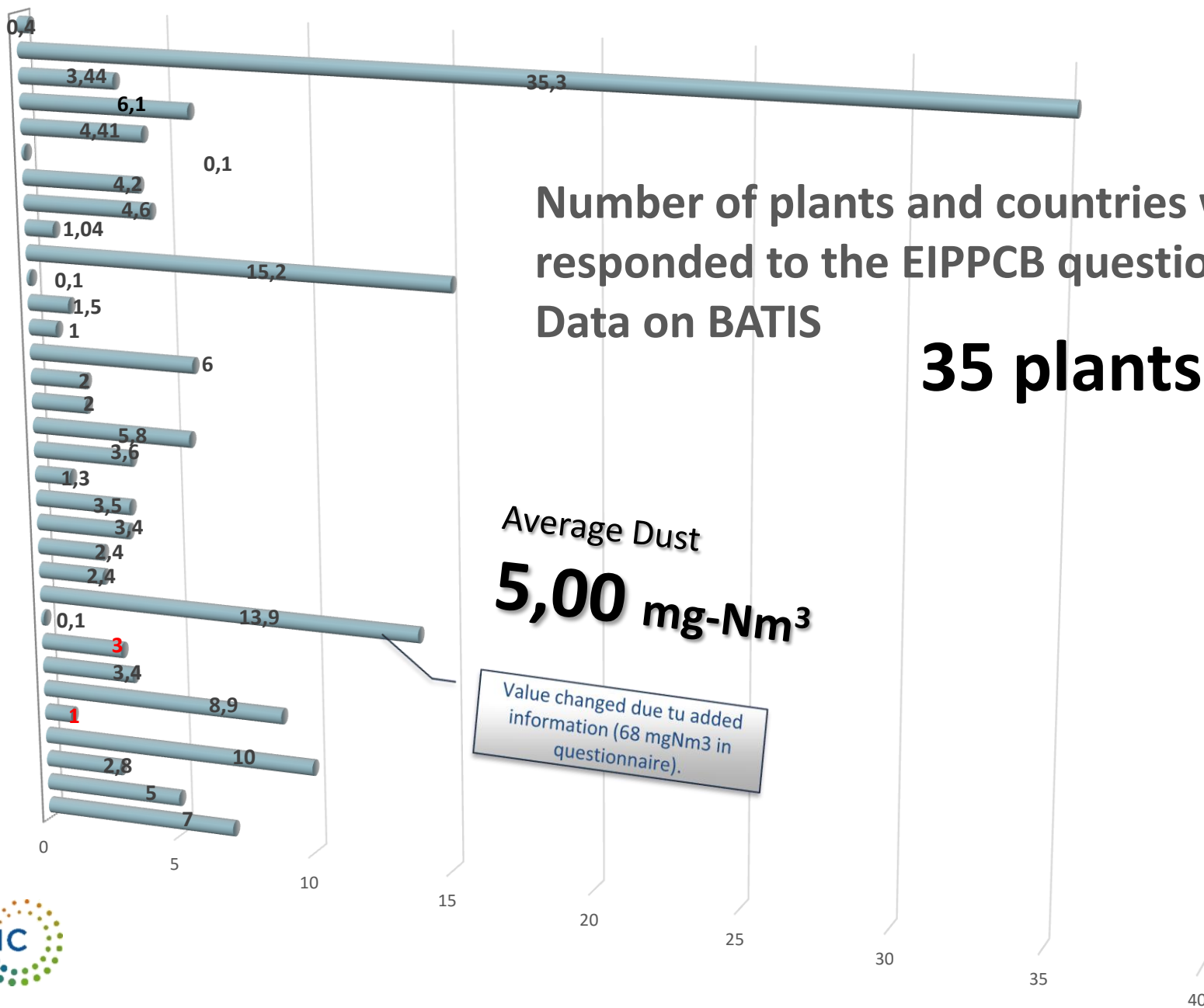
Flow (Nm³/h)



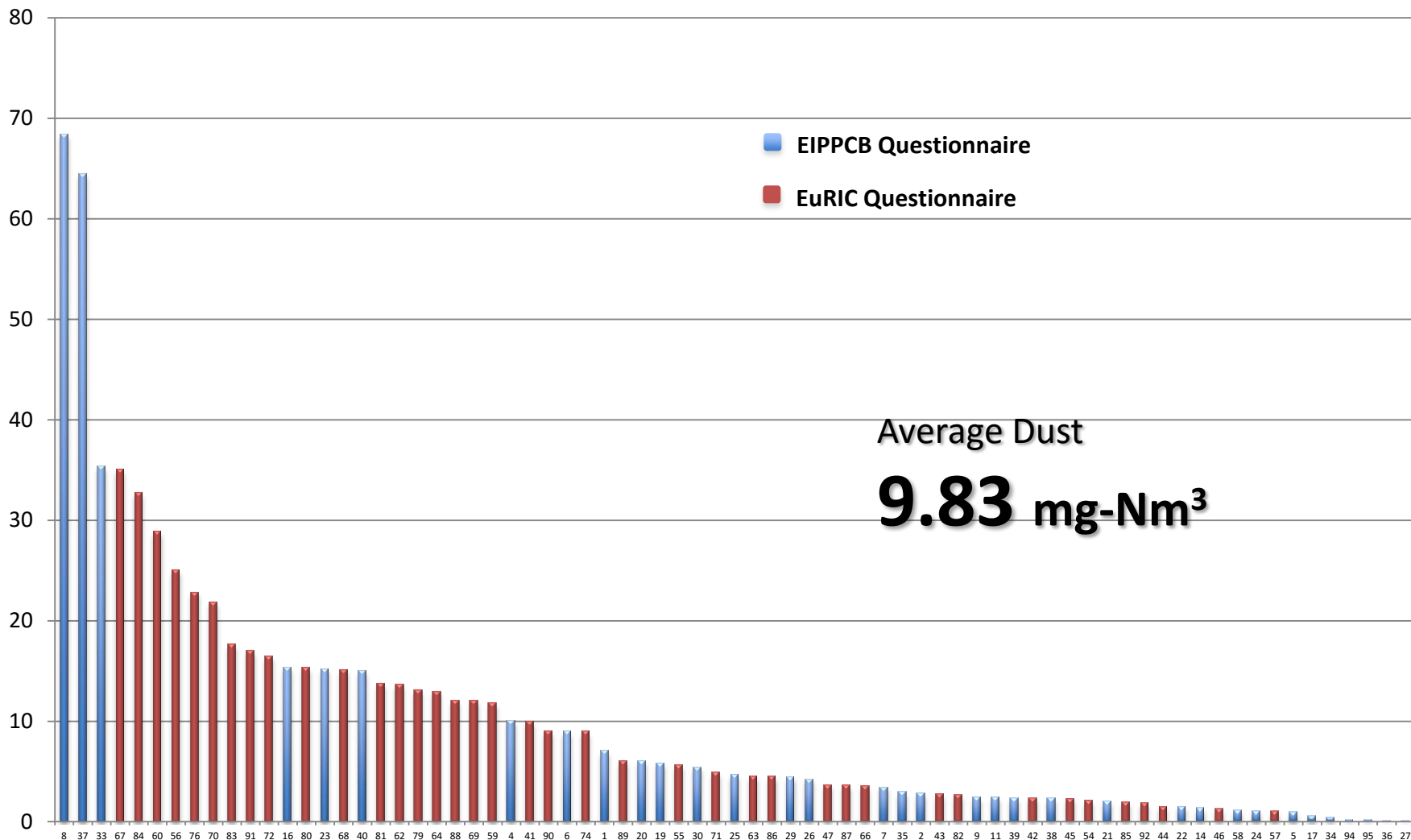
Emission to air Temperature (°C)



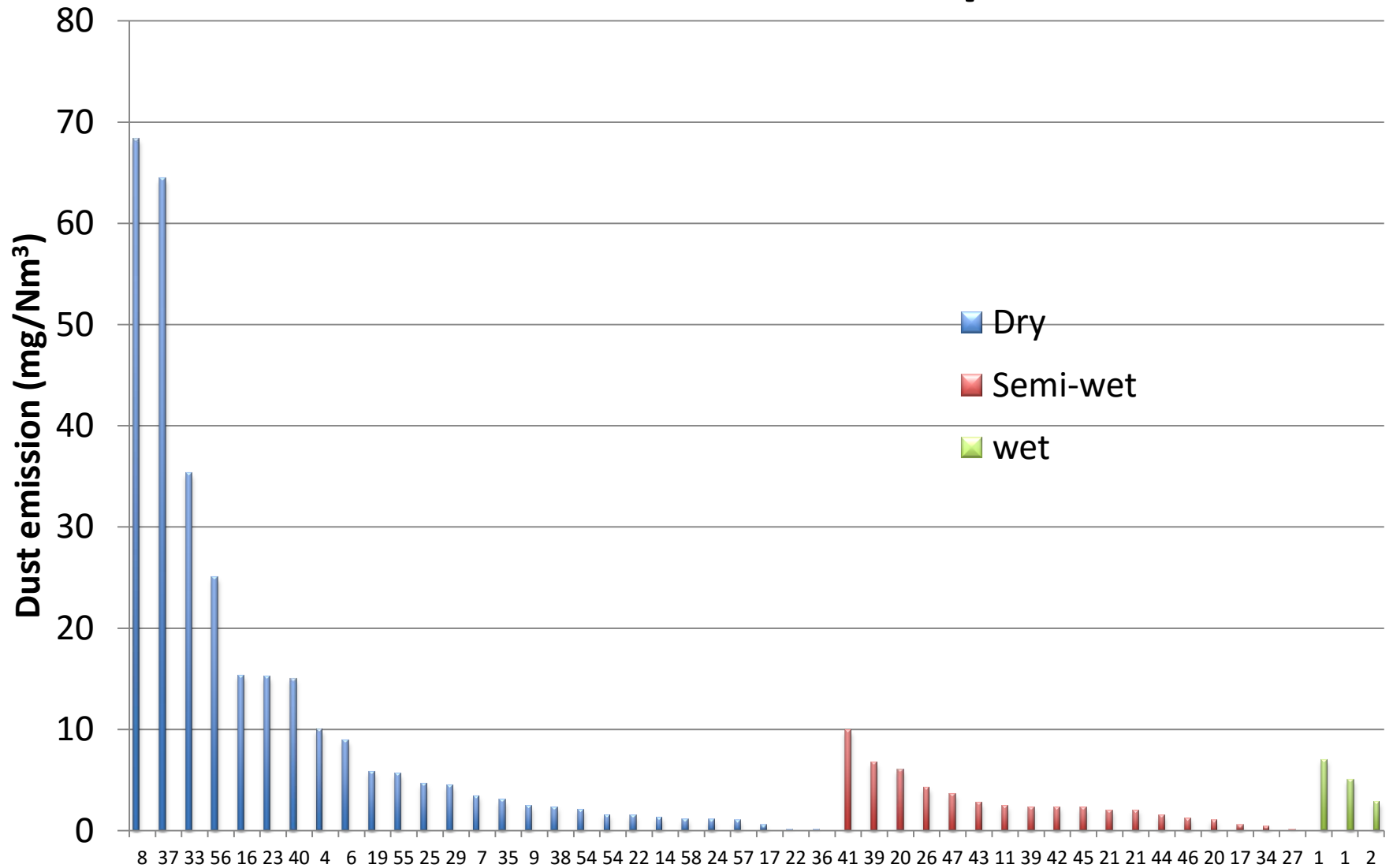
Emissions to air - Dust (mg-Nm³)



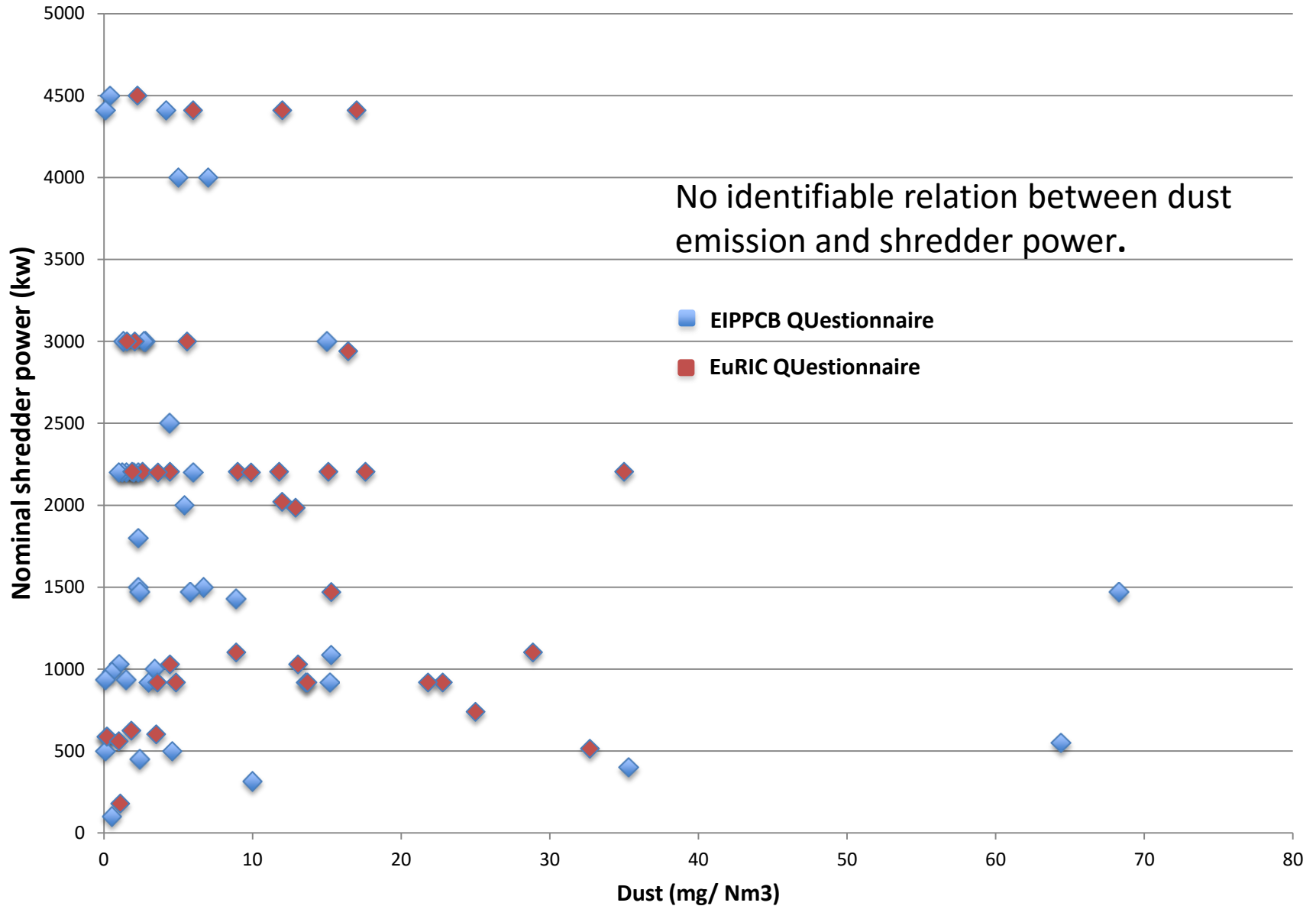
Dust emission (mg/Nm³)



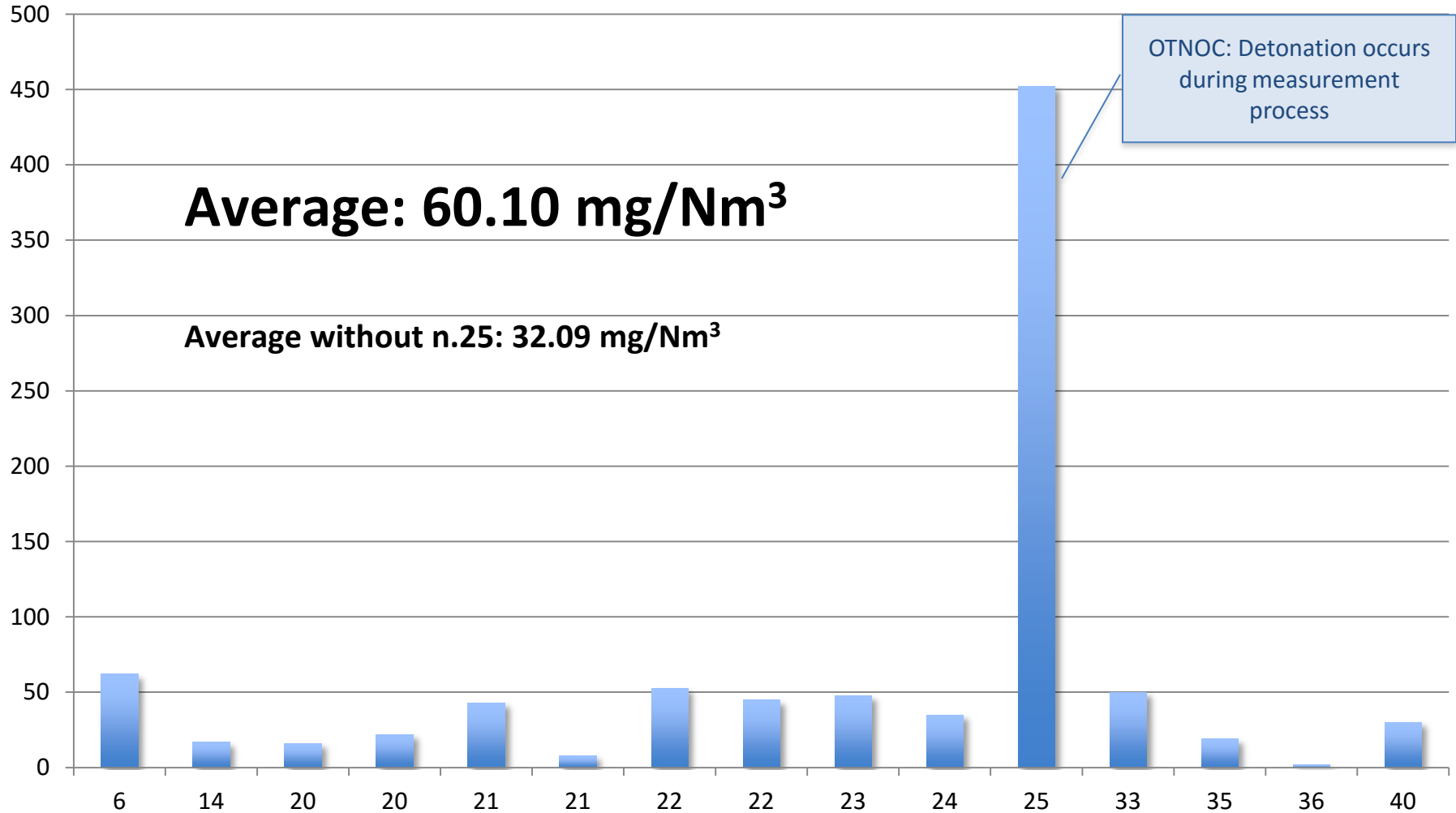
Dust emission vs shredder process



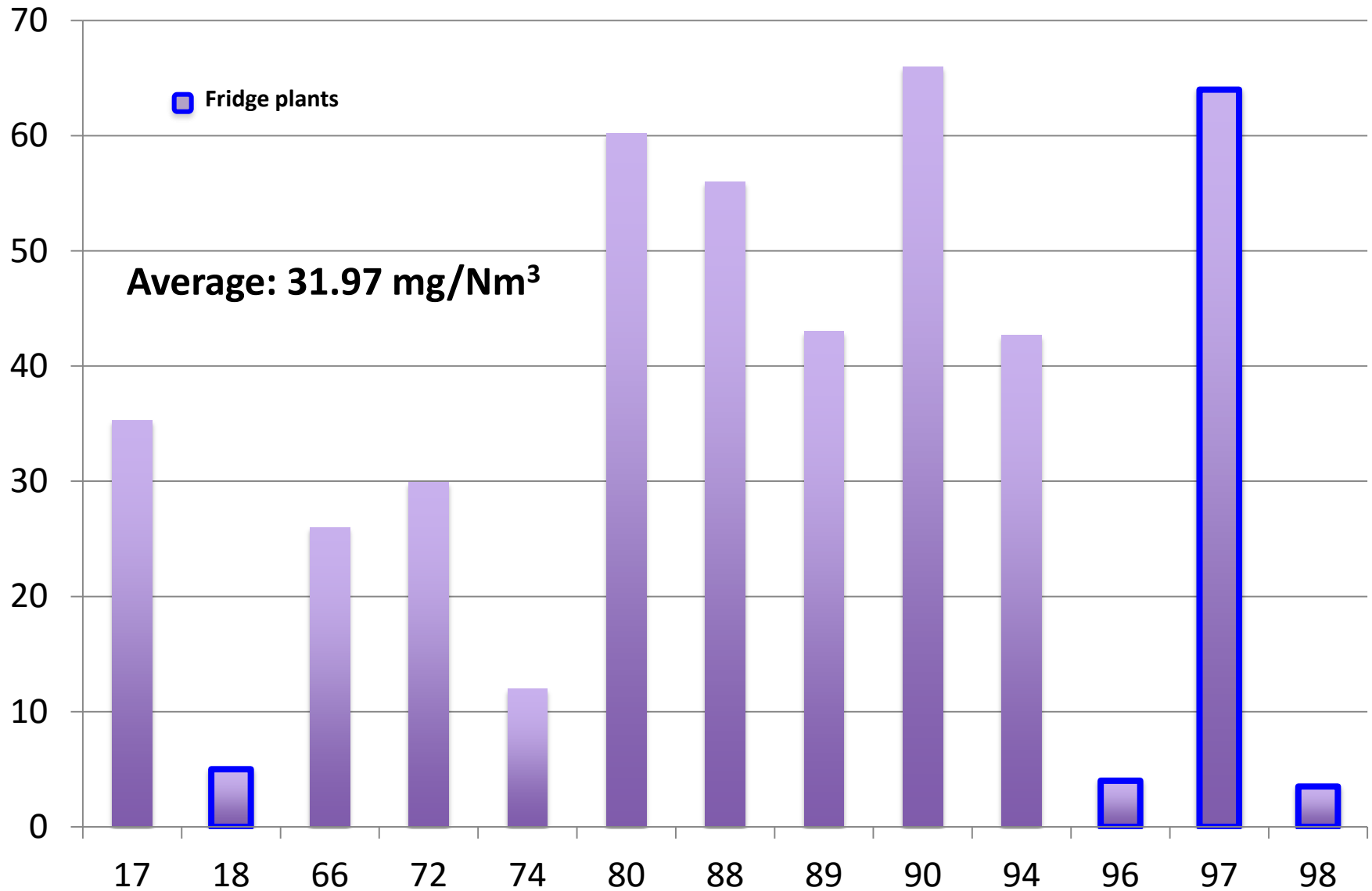
Dust emission vs Nominal shredder power



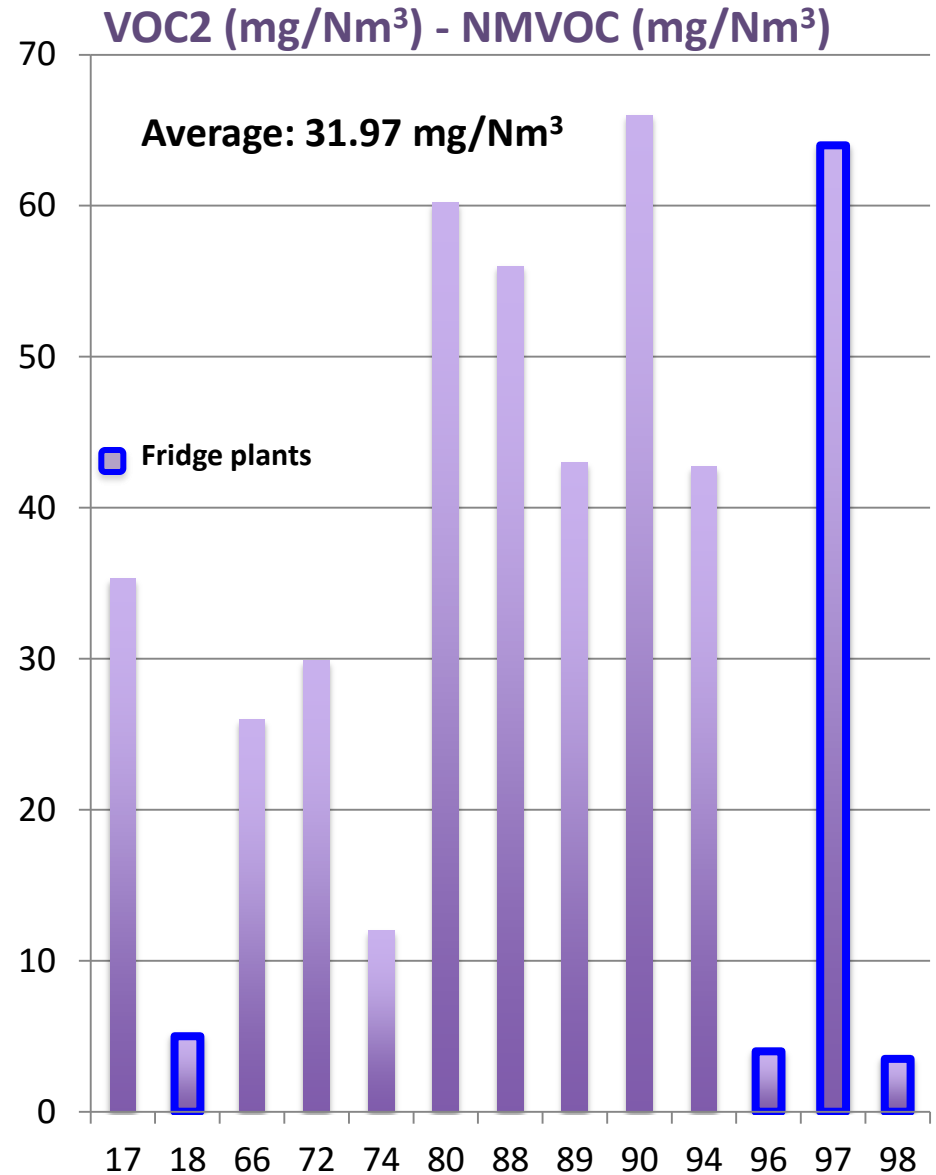
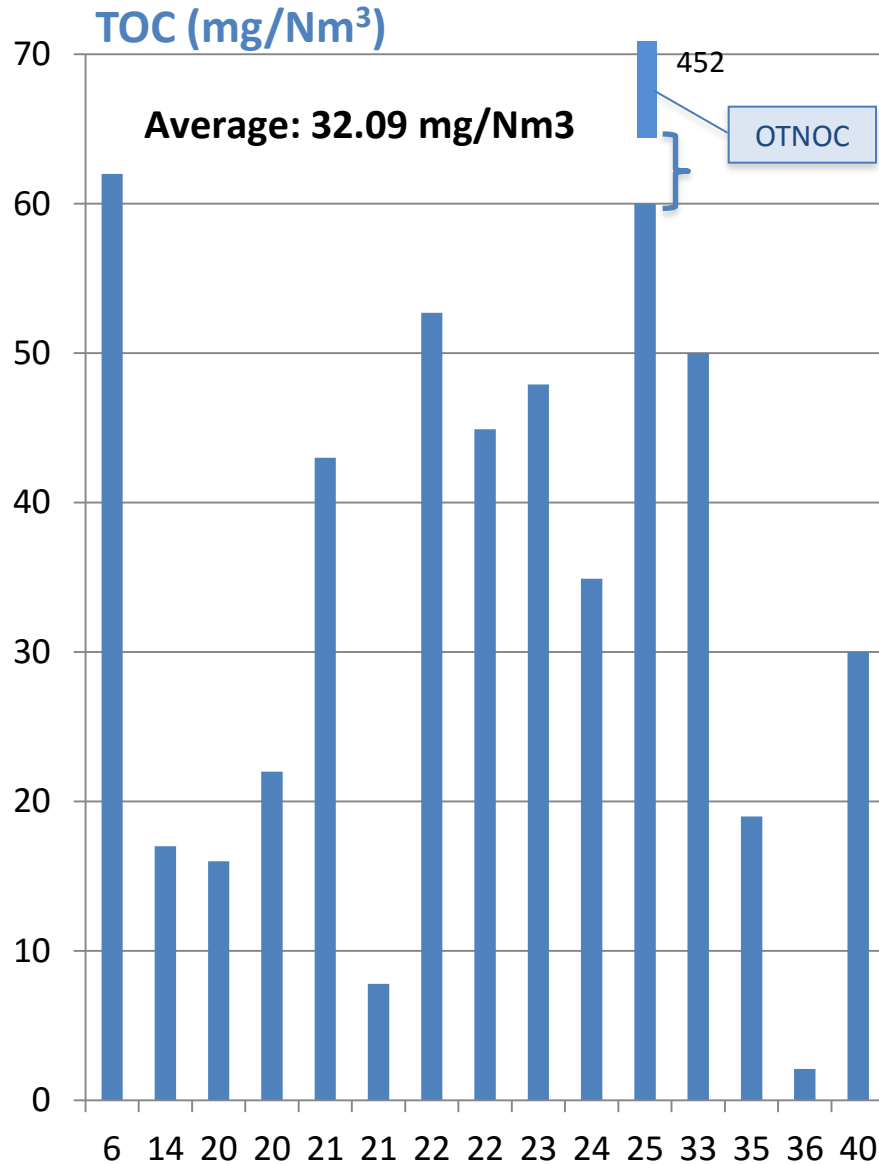
TOC (mg/Nm³)



VOC2 (mg/Nm³) - NMVOC (mg/Nm³)

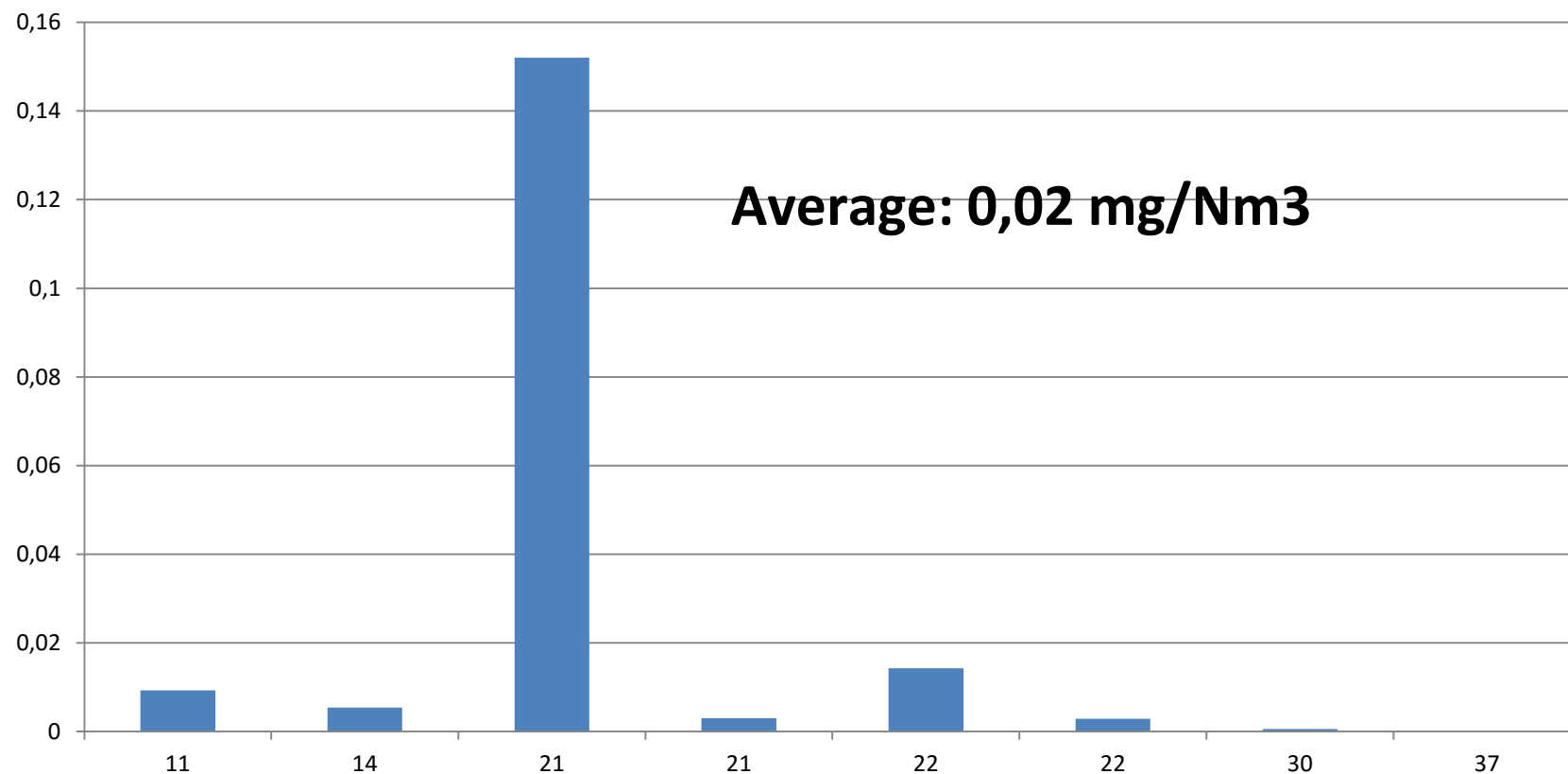


TOC (mg/Nm³), VOC2 (mg/Nm³) - NMVOC (mg/Nm³)



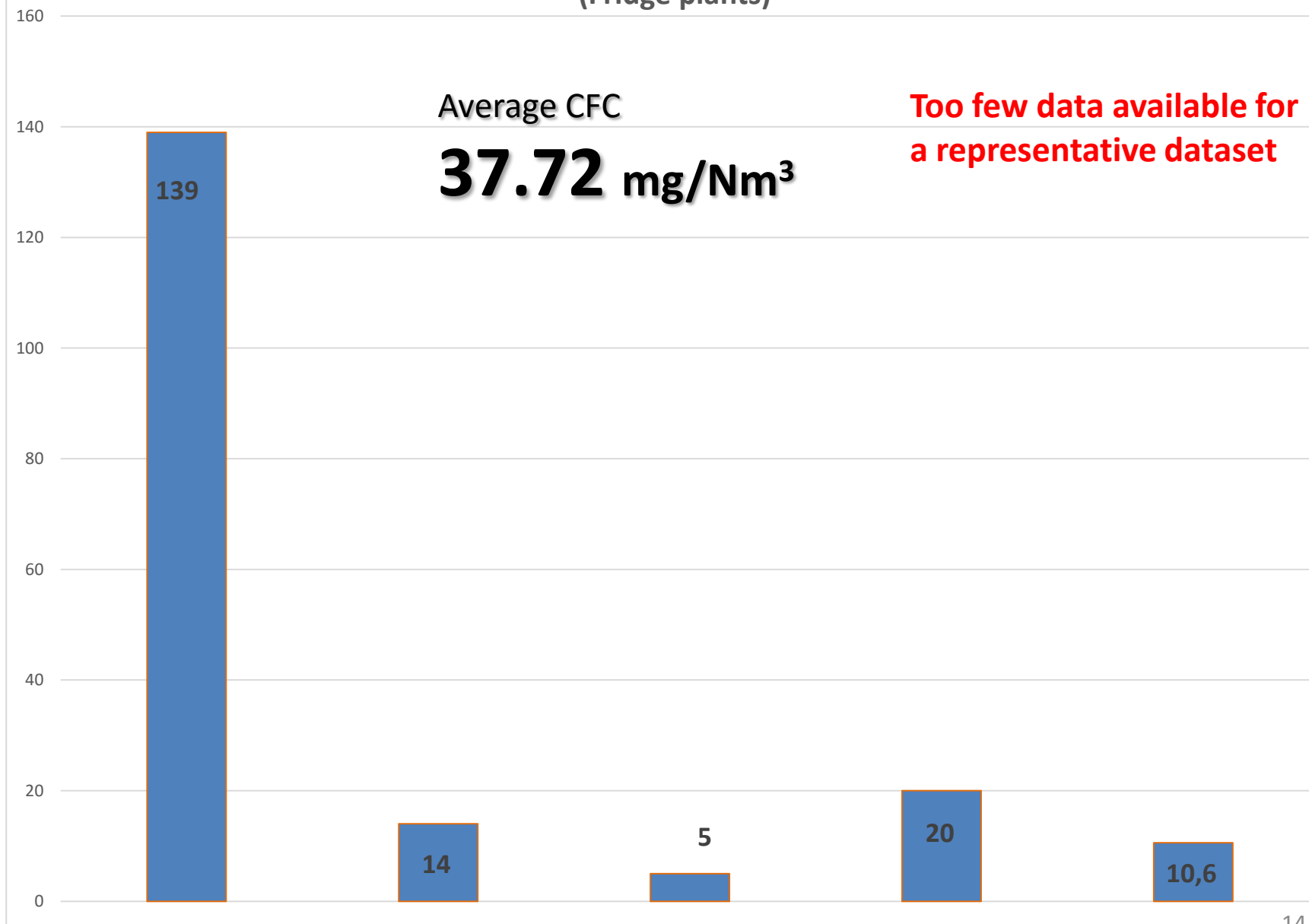
Very few data available
PCB have been prohibited
from use since 1987 , so only
traces can be found and
presence will decrease
continuously

Emissions to air - PCB (mg/Nm³)

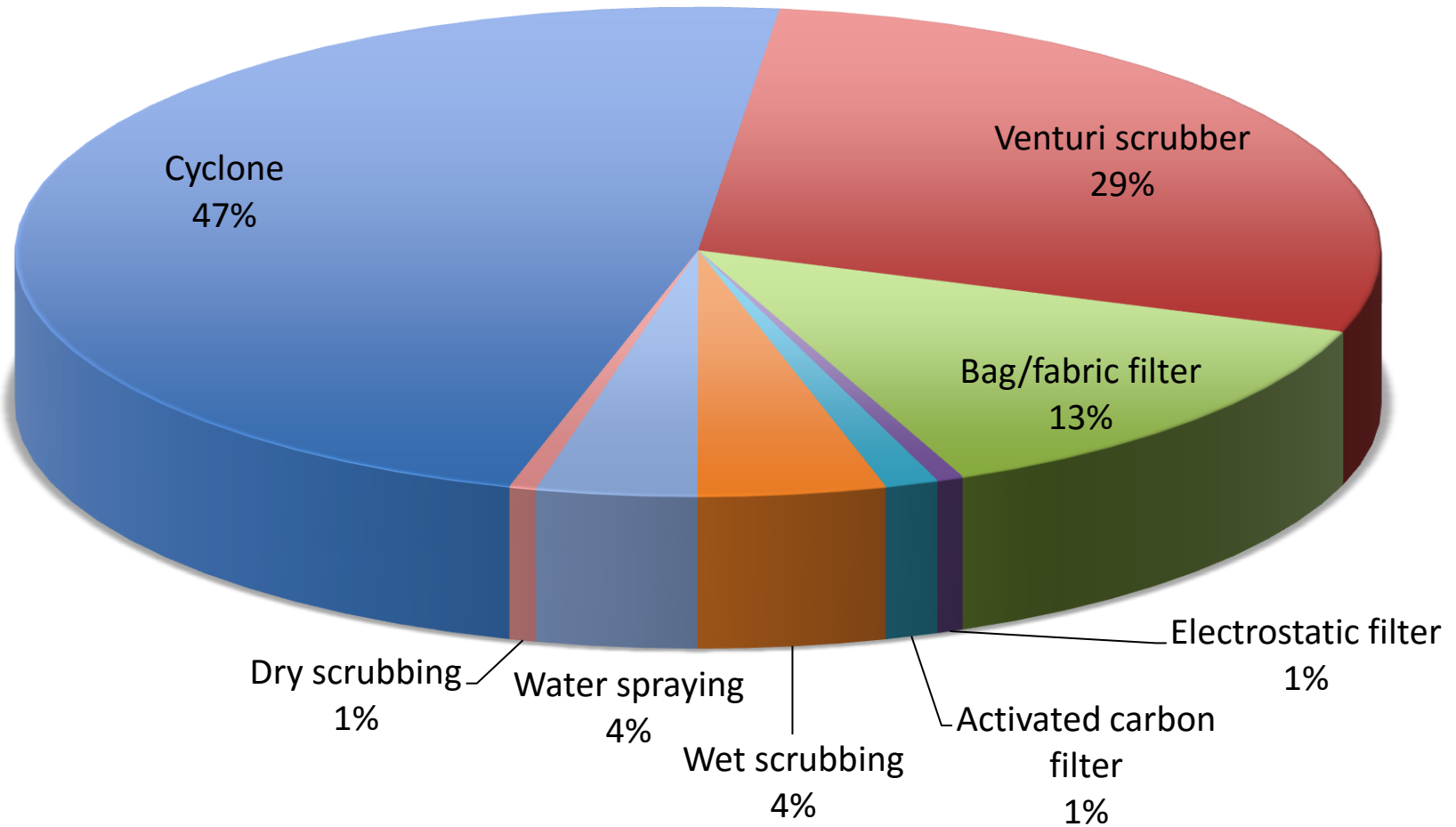


Emissions to air - CFC (mg/Nm³)

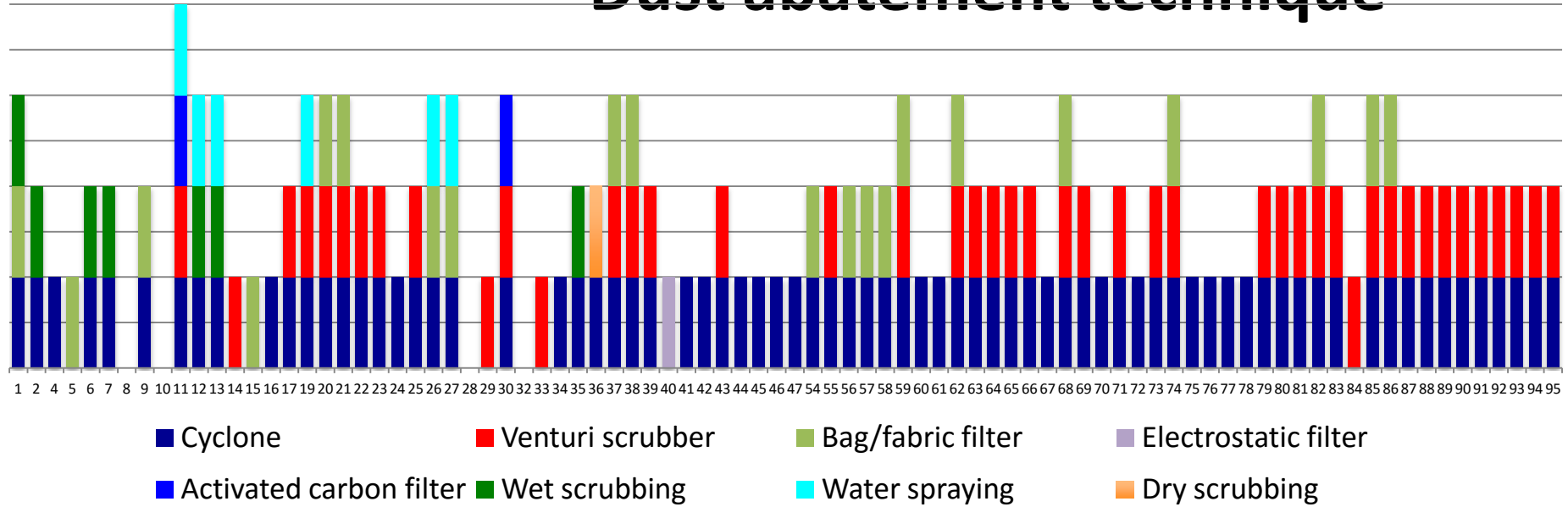
(Fridge plants)



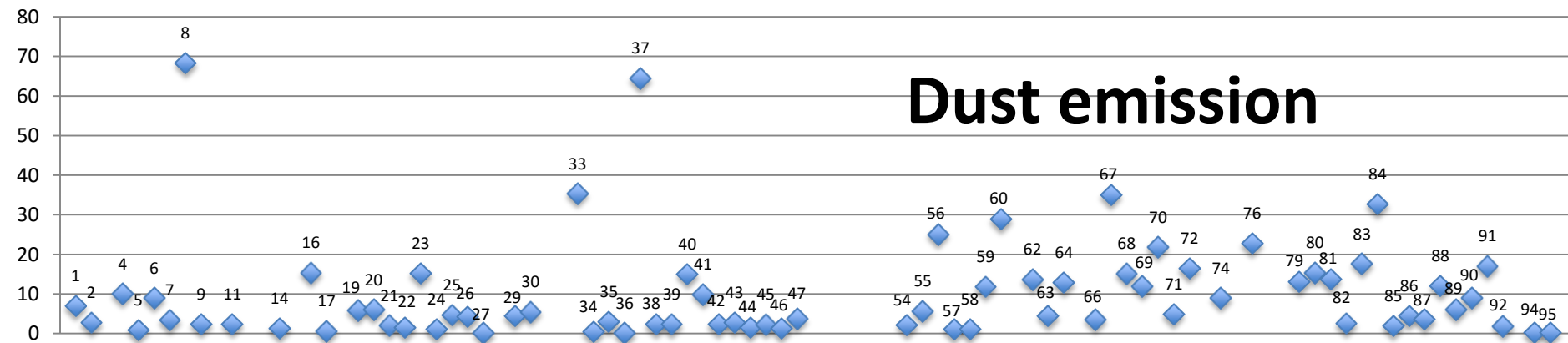
Dust abatement technique



Dust abatement technique

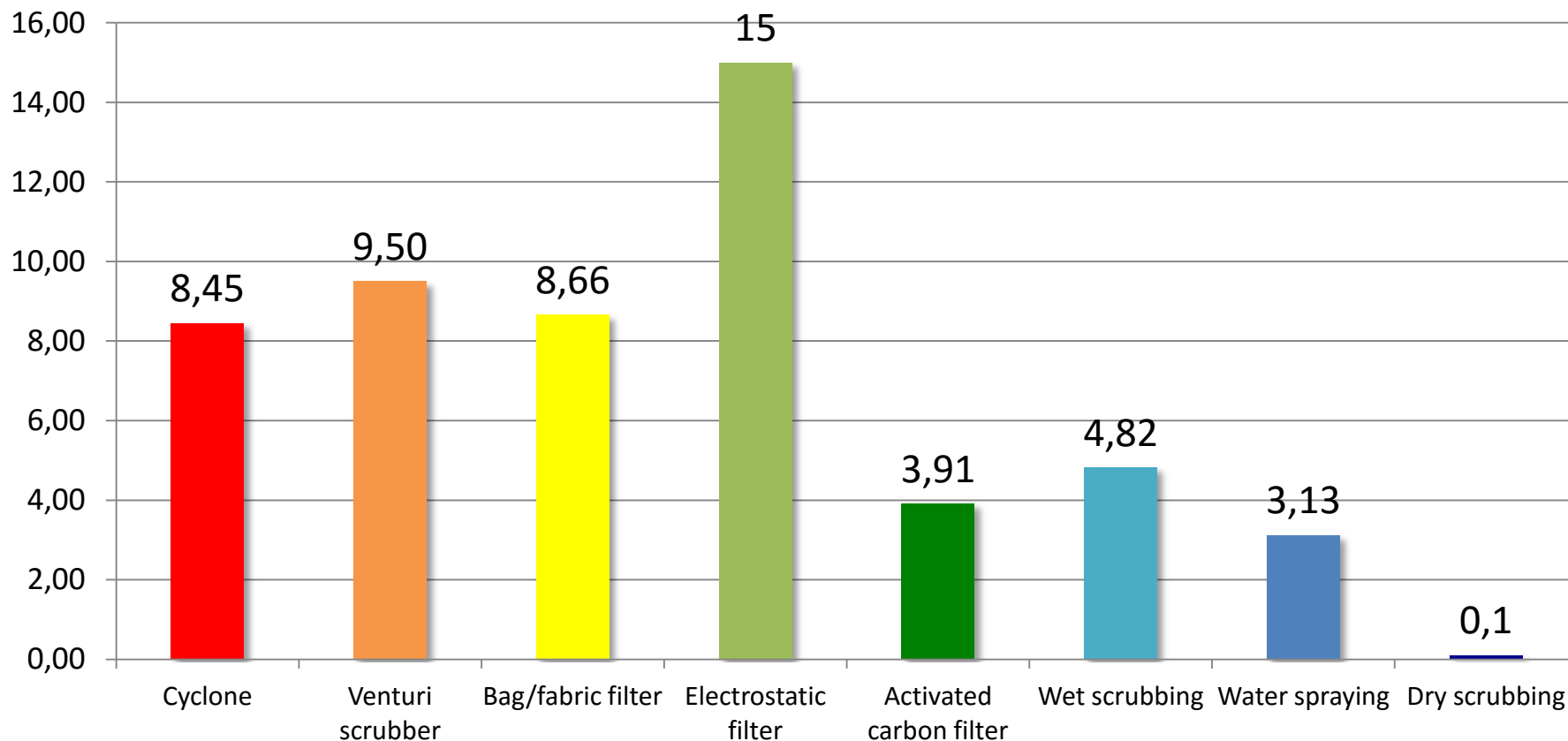


Dust emission



Dust abatement technique and dust emission

Average Dust (mg/Nm³)



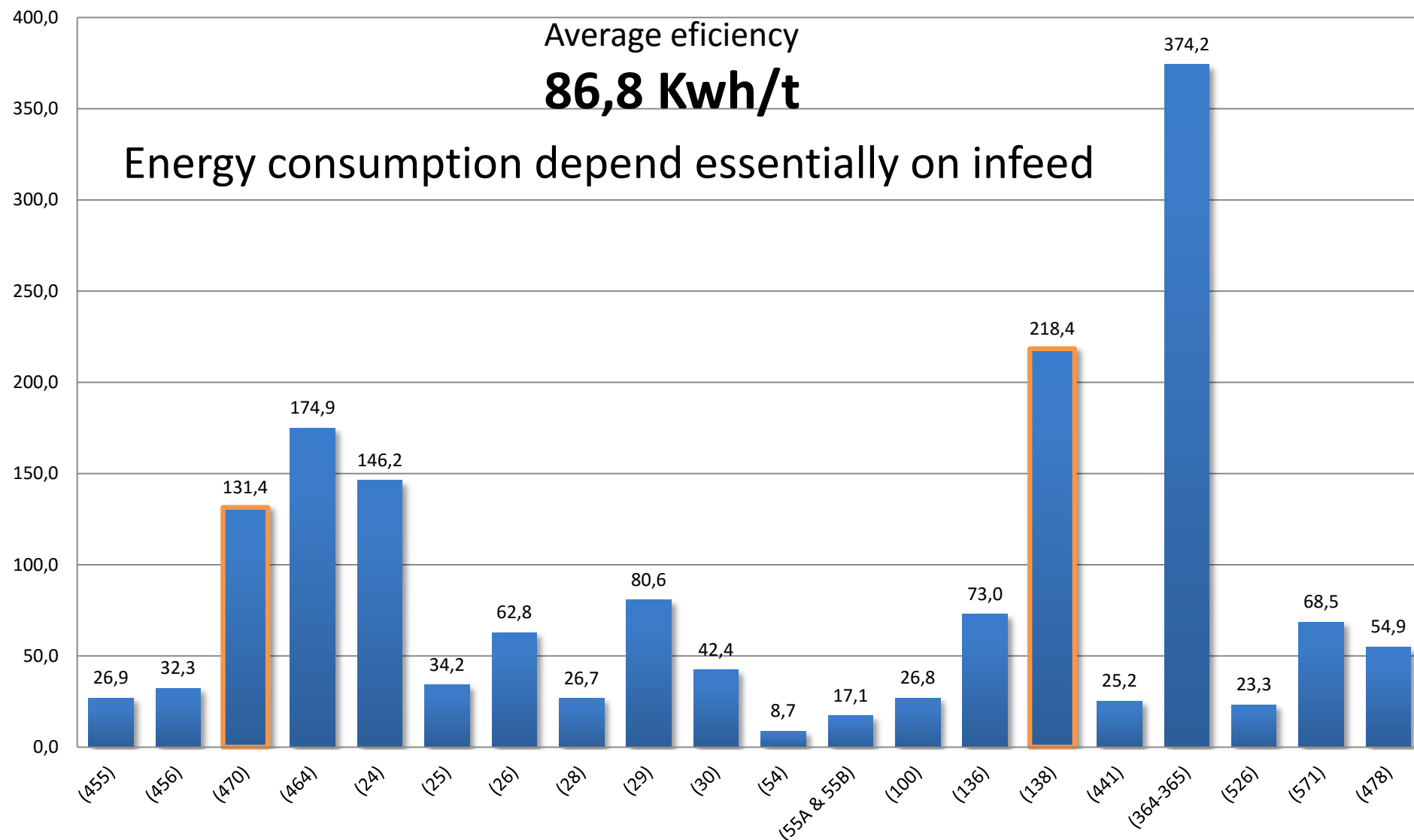
	Cyclone	Venturi scrubber	Bag/fabric filter	Electrostatic filter	Activated carbon filter	Wet scrubbing	Water spraying	Dry scrubbing
Average Dust (mg/Nm3)	8,45	9,50	8,66	15	3,91	4,82	3,13	0,1

Total Energy Consumption and Waste treated (Kwh/t)

Average efficiency

86,8 Kwh/t

Energy consumption depend essentially on infeed



Water

- Metal Waste Shredders have generally a very low water consumption (site consumption may be different)
- Quality of released water is first of all a question for the site that may go to :
 - natural surroundings, or
 - collective water treatment station
- Quantity of released water depends essentially on local climate conditions
- Storage of outputs is one of the main topics for released water quality

Water Emissions - pH level

