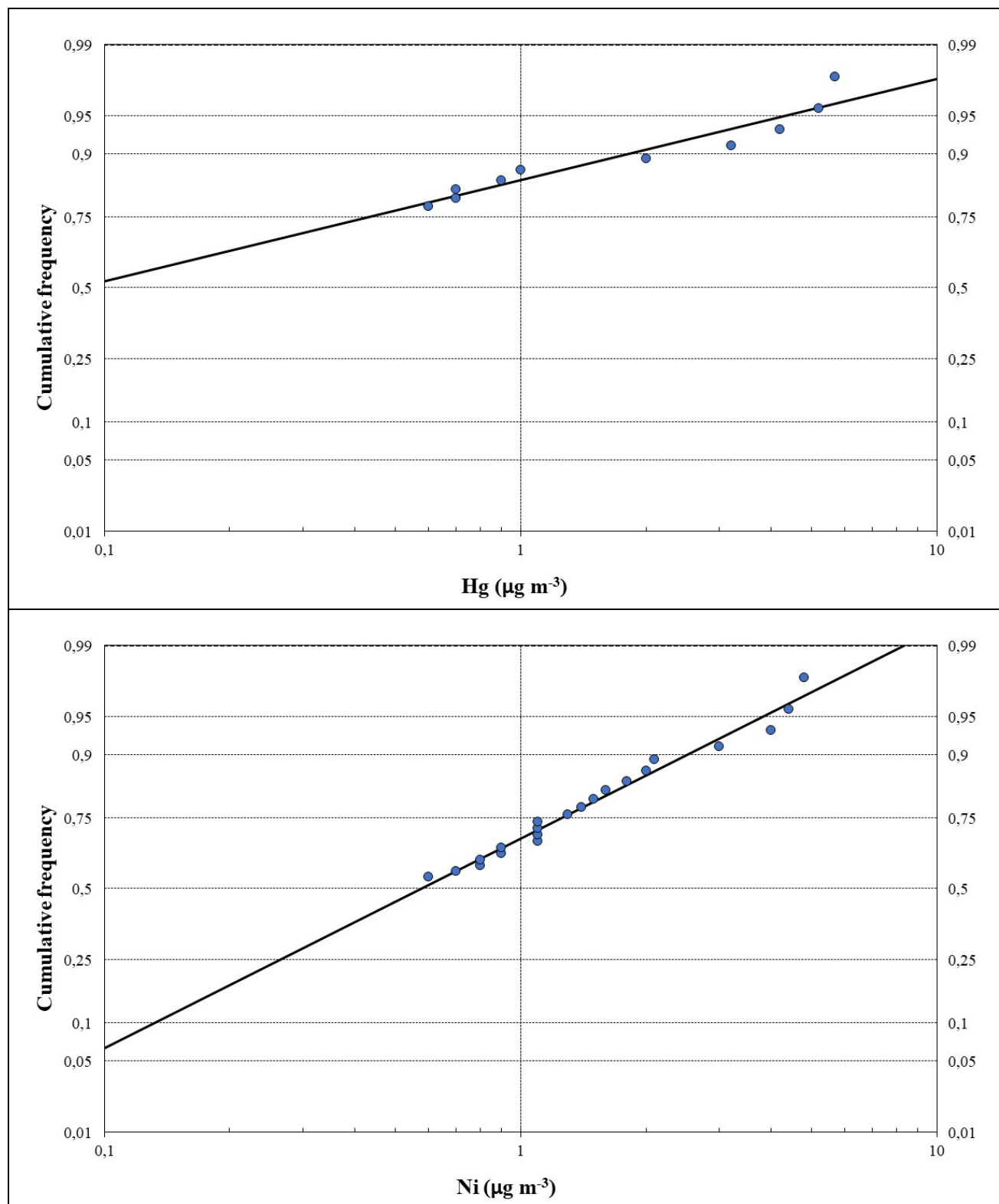
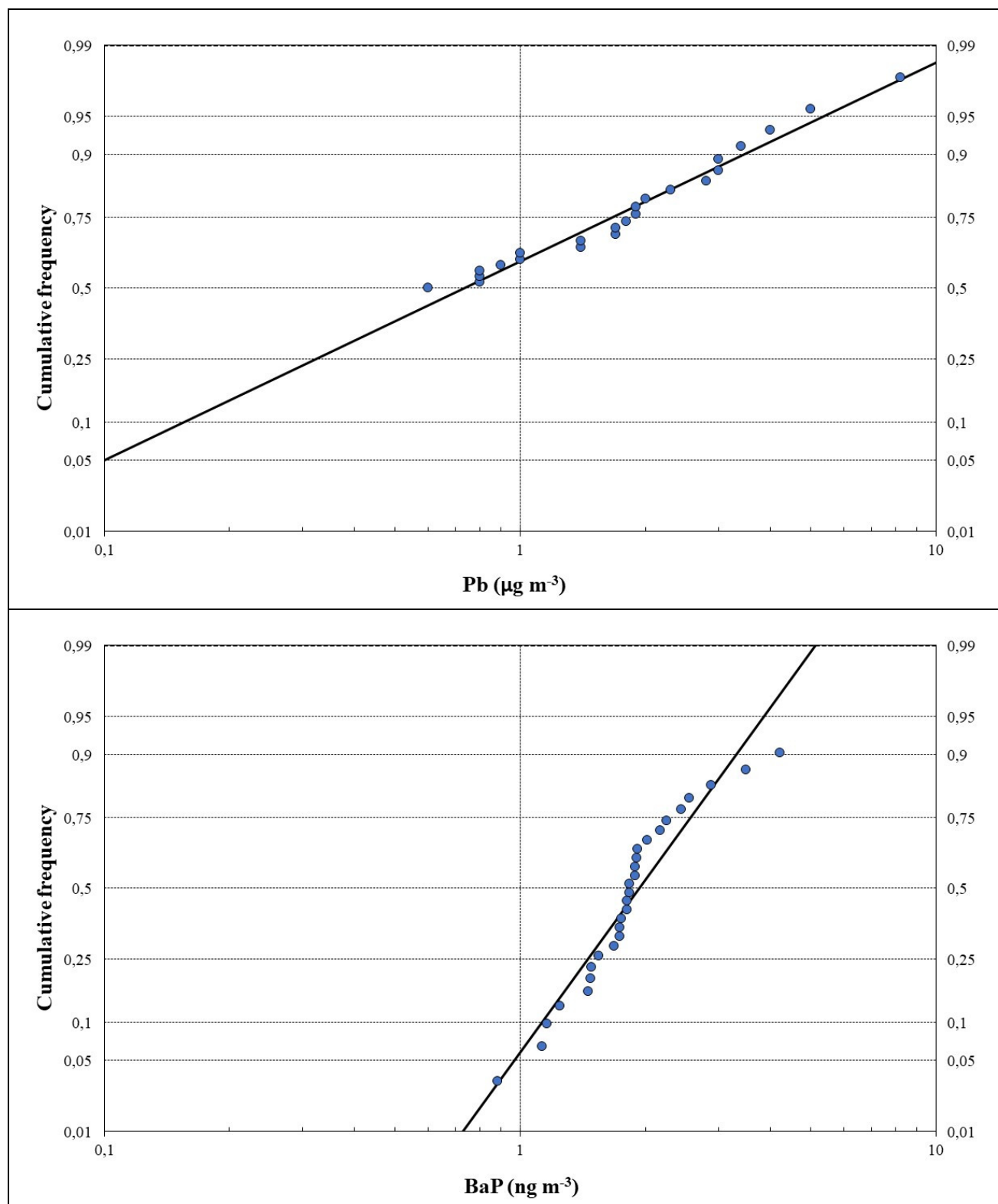


Supplementary Materials: Air Quality Impact Assessment of a Waste-to-Energy Plant: Modelling Results vs. Monitored Data

Giovanni Lonati ^{1,*}, Stefano Cernuschi ¹ and Paolo Giani ²





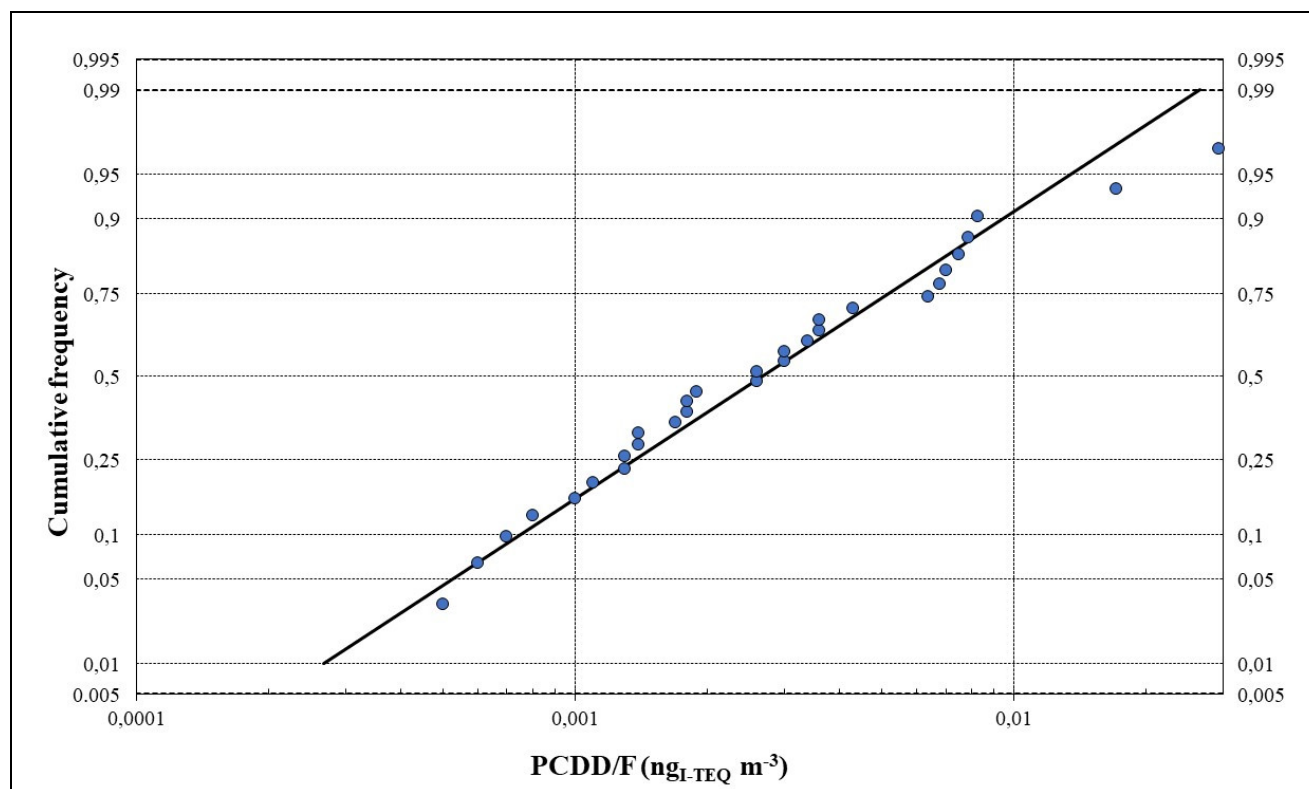
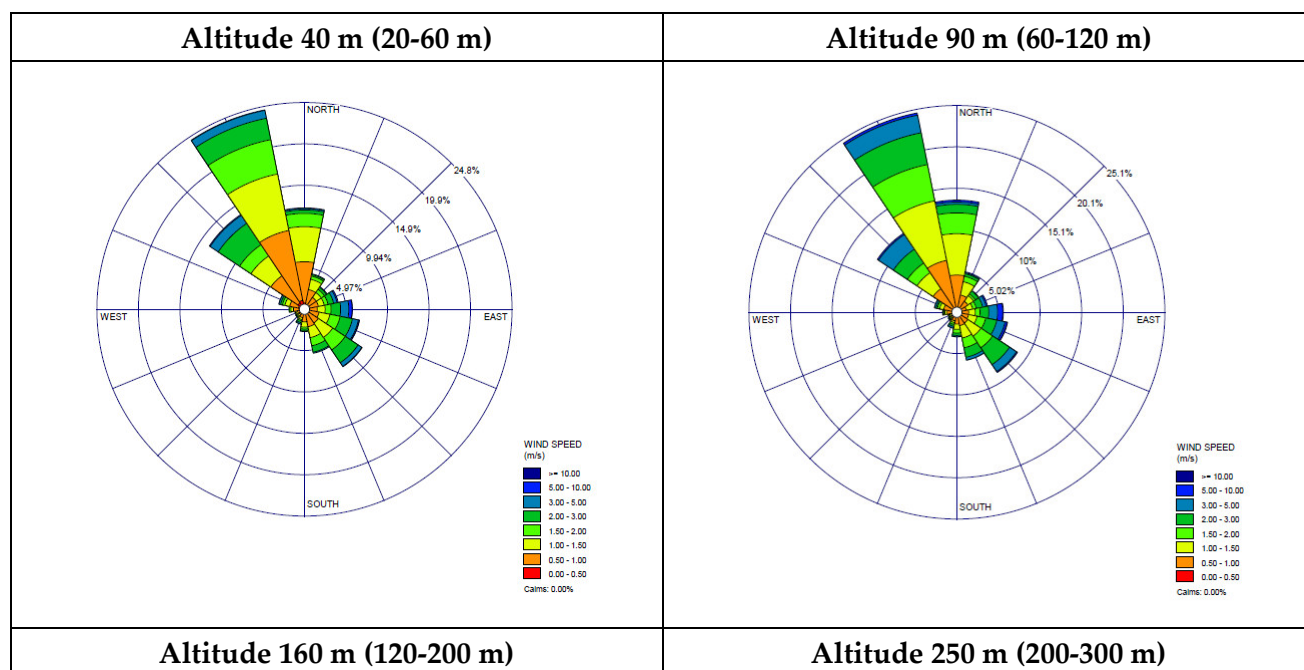


Figure S1. – Distributions of flue gas concentration of Hg, Ni, Pb, BaP, and PCDD/F (all concentrations referred to 0 °C, 101.3 kPa, dry basis, 11% O₂).



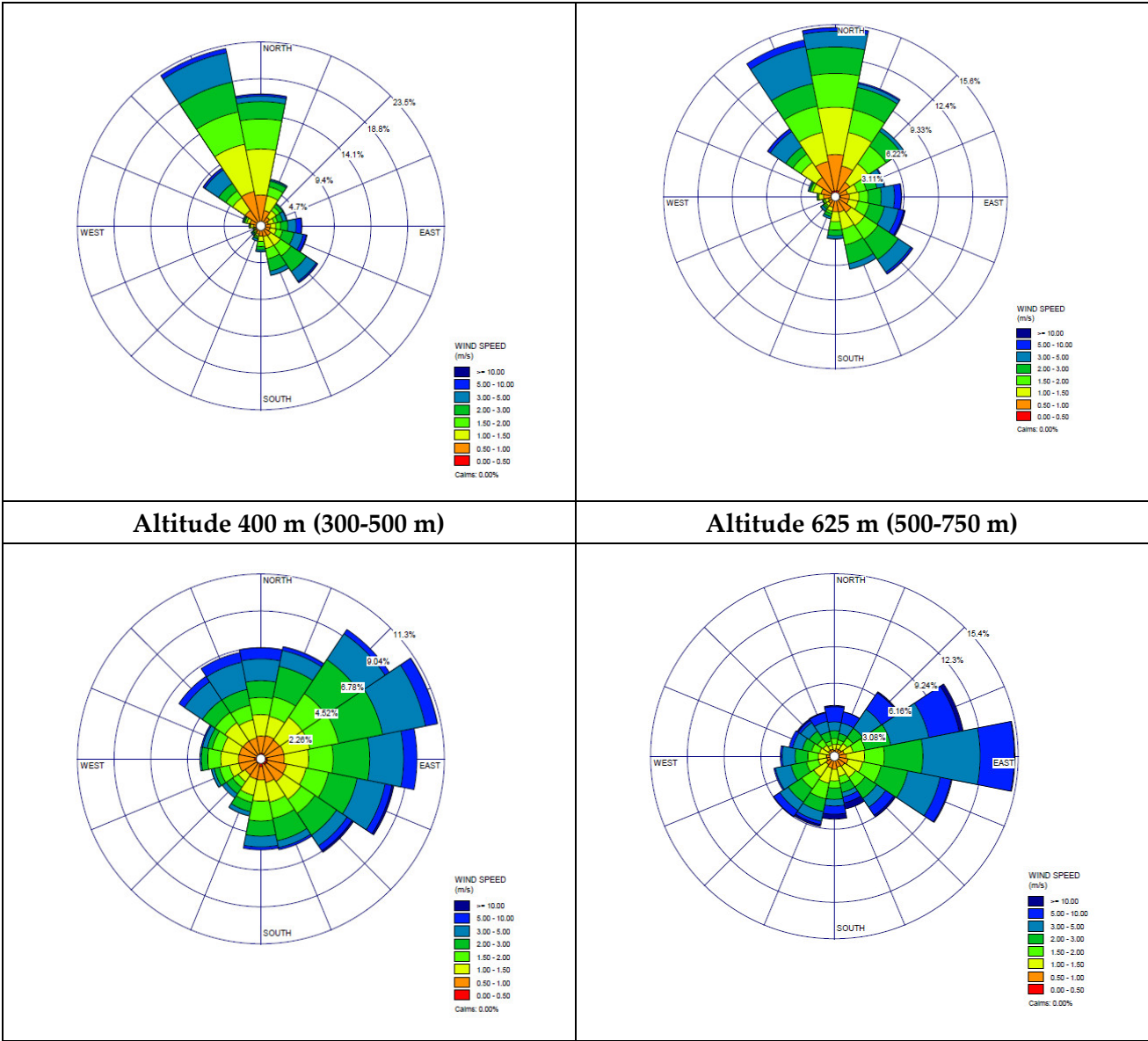


Figure S2. – Wind roses at different altitude above sea level at the plant location for the simulation reference period (01/05/2018-30/04/2019).

Cold season	Warm season
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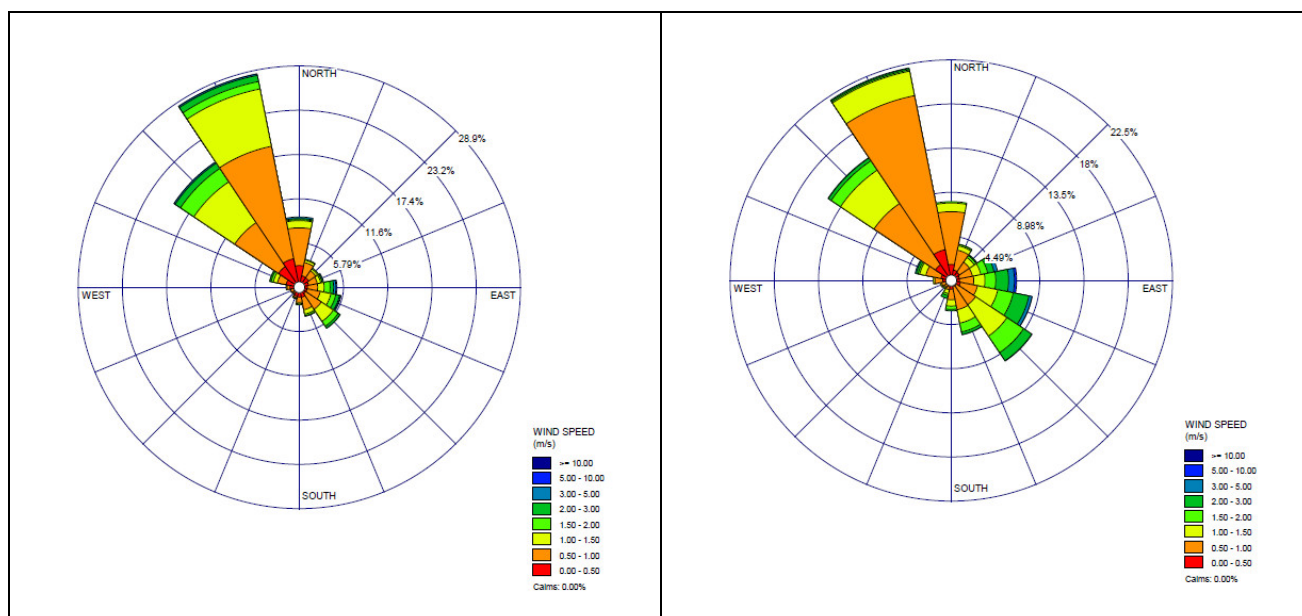


Figure S3. Cold (Oct. 2018-Mar. 2019) and warm season (May 2018-Sep. 2018 and Apr. 2019) ground-level wind roses at the plant location for the simulation reference period (01/05/2018-30/04/2019).

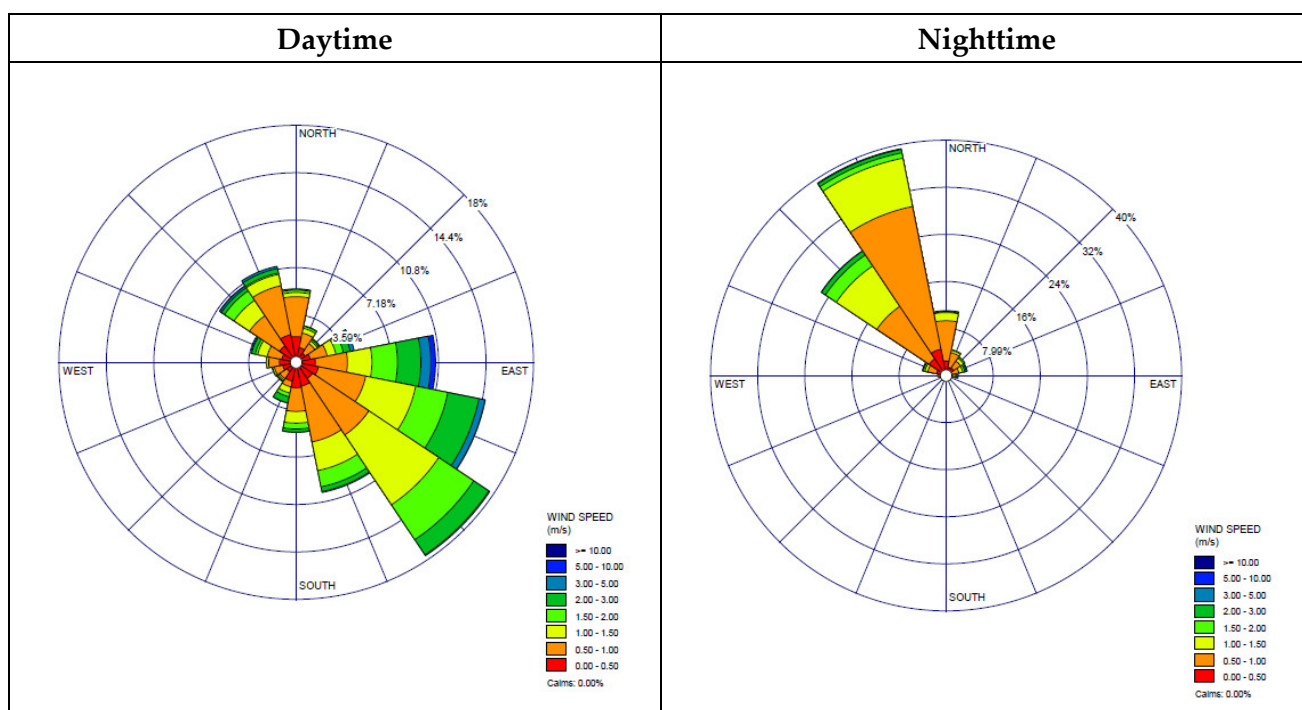


Figure S4. Daytime and nighttime ground-level wind roses at the plant location for the simulation reference period (01/05/2018-30/04/2019).

04/06/2018-11/06/2018

11/09/2018-18/09/2018

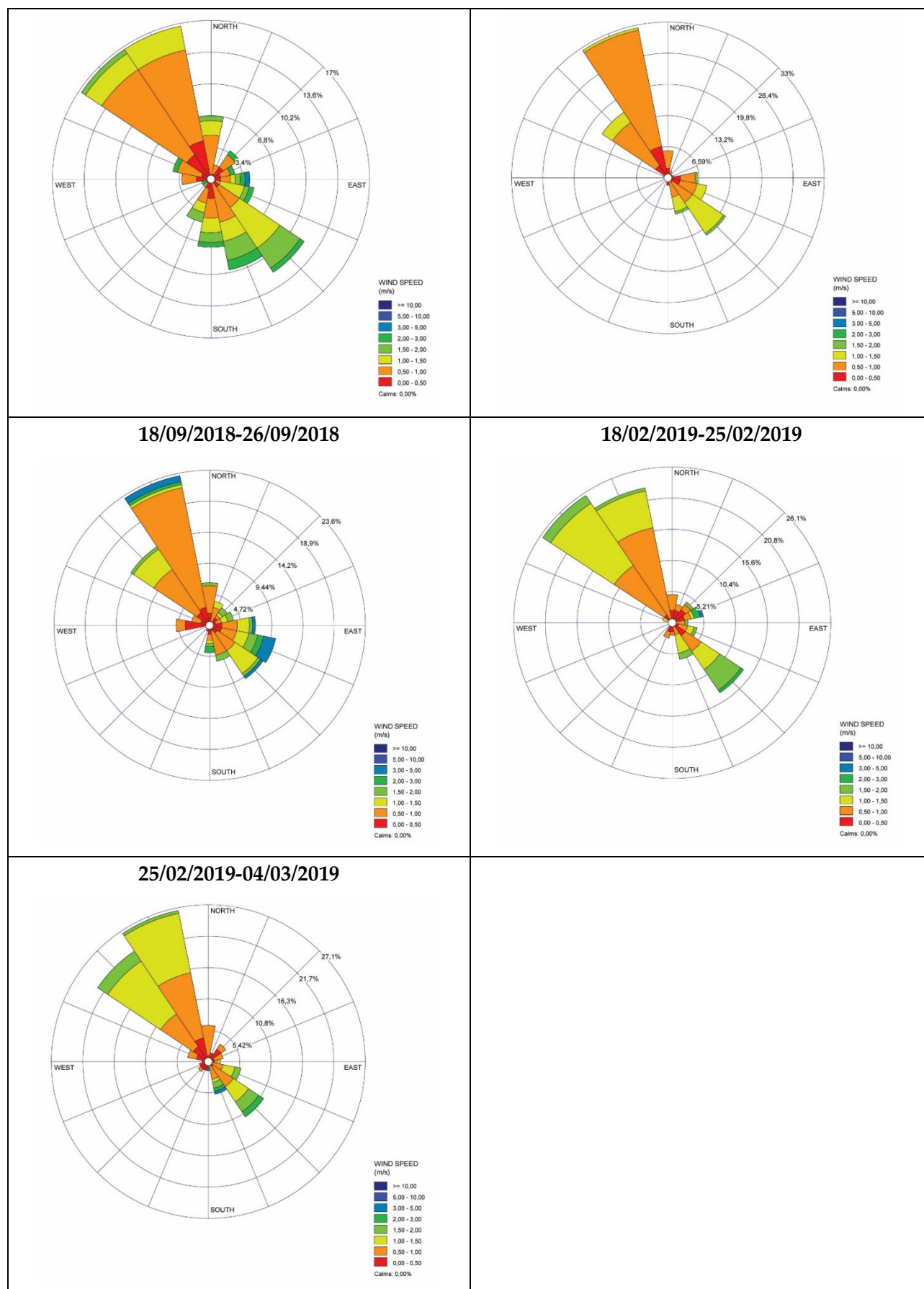


Figure S5. – Ground-level wind roses at the plant location for the monitoring campaign periods.

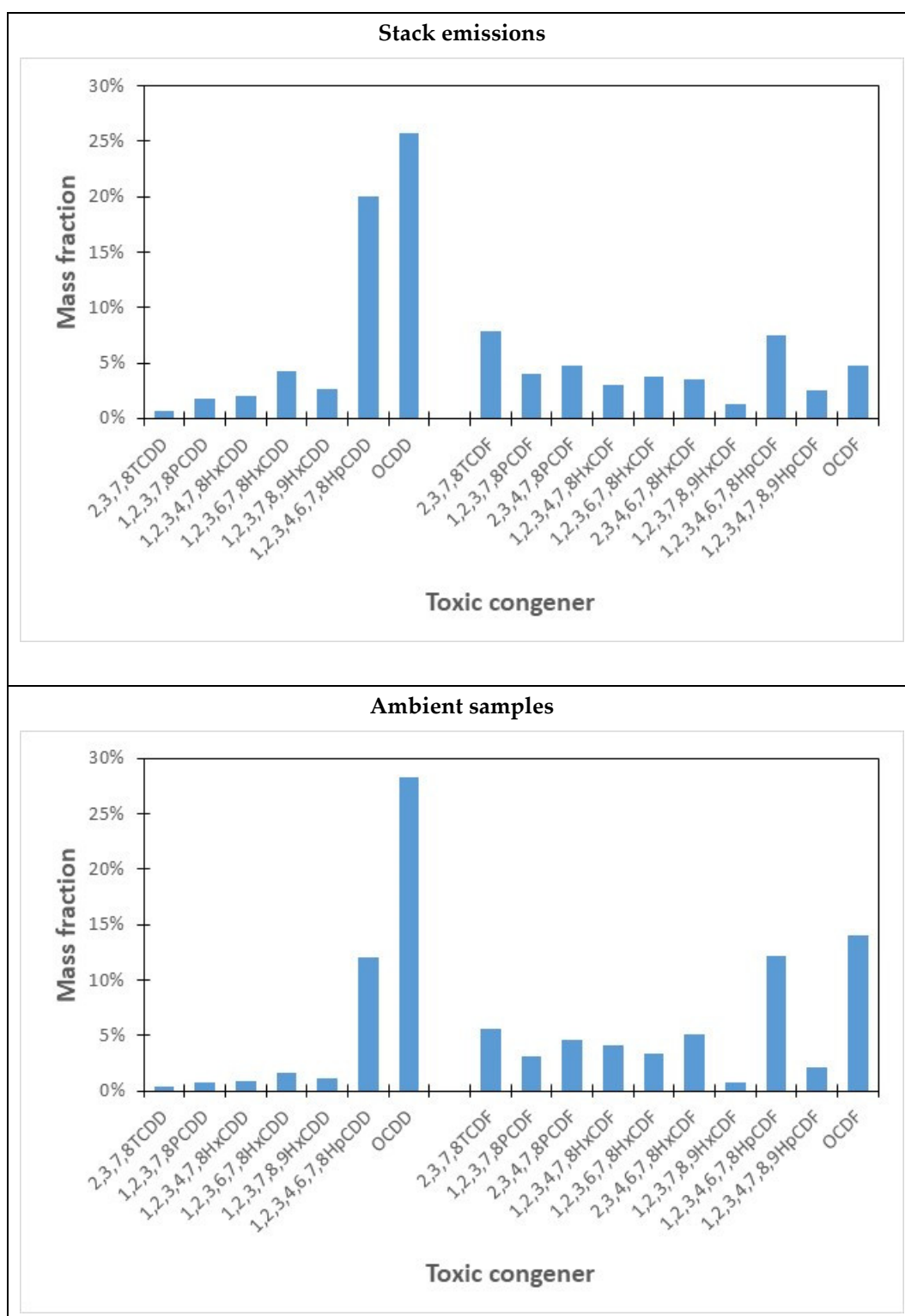


Figure S6. – Fingerprints (relative abundance by mass) of PCDD/F toxic congeners in the WtE plant's emission and in the ambient air samples.

Table S1. - Emission inventory data for the municipalities within the modelling domain (percentage contributions to annual emissions by sectors).

SNAP sector	NOx	PM10	As	Cd	Ni	Pb	B(a)P
Non-industrial combustion plants	17.8%	75.9%	5.3%	56.5%	6.5%	9.3%	96.89%
Combustion in manufacturing industry	29.6%	3.4%	9.7%	31.1%	70.0%	77.7%	1.55%
Production processes	1.1%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Extraction and distribution of fossil fuels and geothermal energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Solvent use and other products use	0.0%	4.8%	0.0%	0.2%	0.0%	0.0%	0.0%
Road transport	40.9%	8.0%	5.8%	2.9%	6.5%	8.3%	0.66%
Other mobile source and machinery	5.5%	0.9%	0.0%	0.1%	0.4%	0.0%	0.03%
Waste treatment and disposal	4.8%	0.2%	78.6%	2.5%	11.5%	0.8%	0.002%
Agriculture	0.1%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Other sources and sinks	0.2%	4.7%	0.6%	6.7%	5.2%	3.9%	0.86%