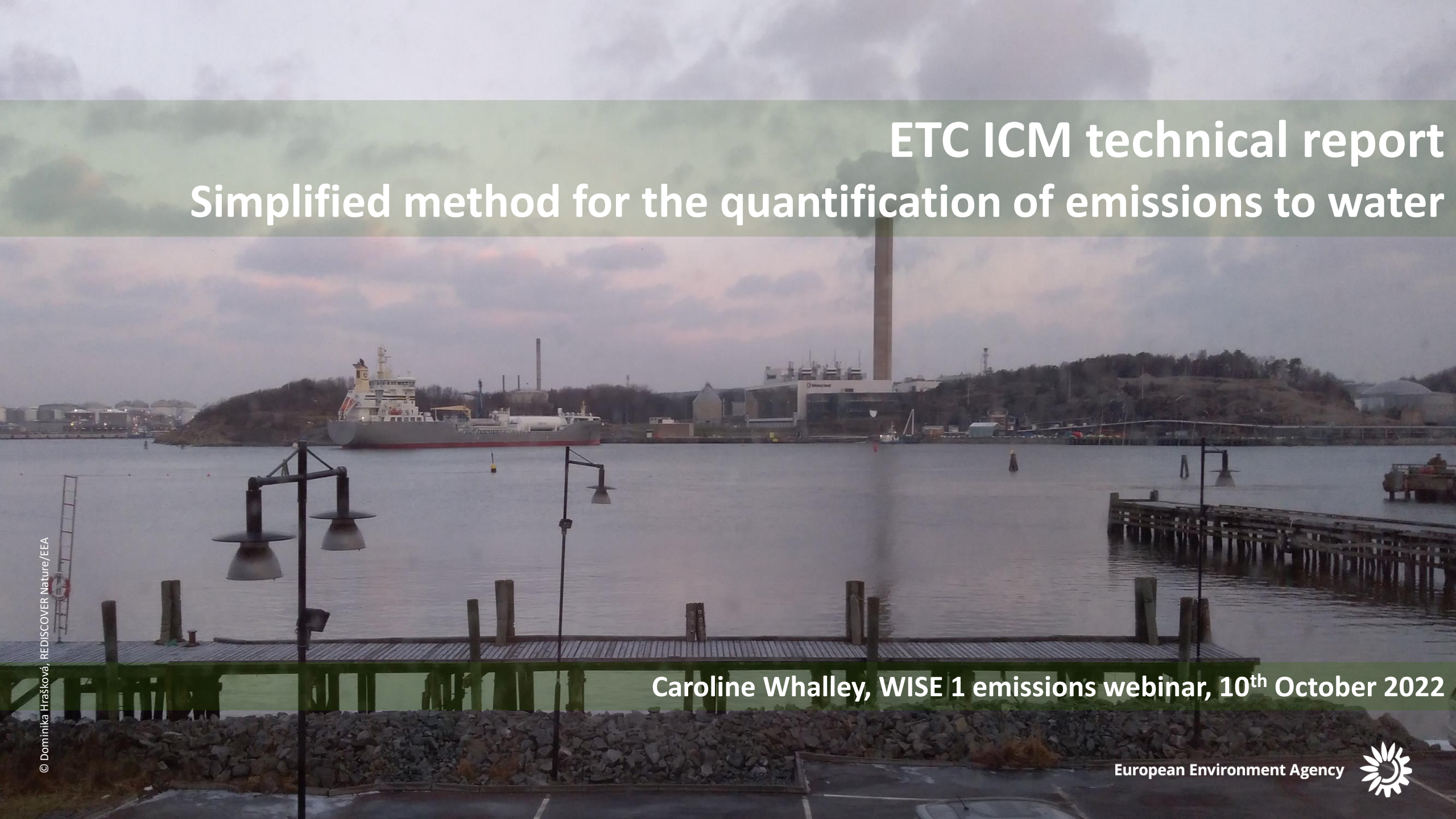
ETC ICM technical report

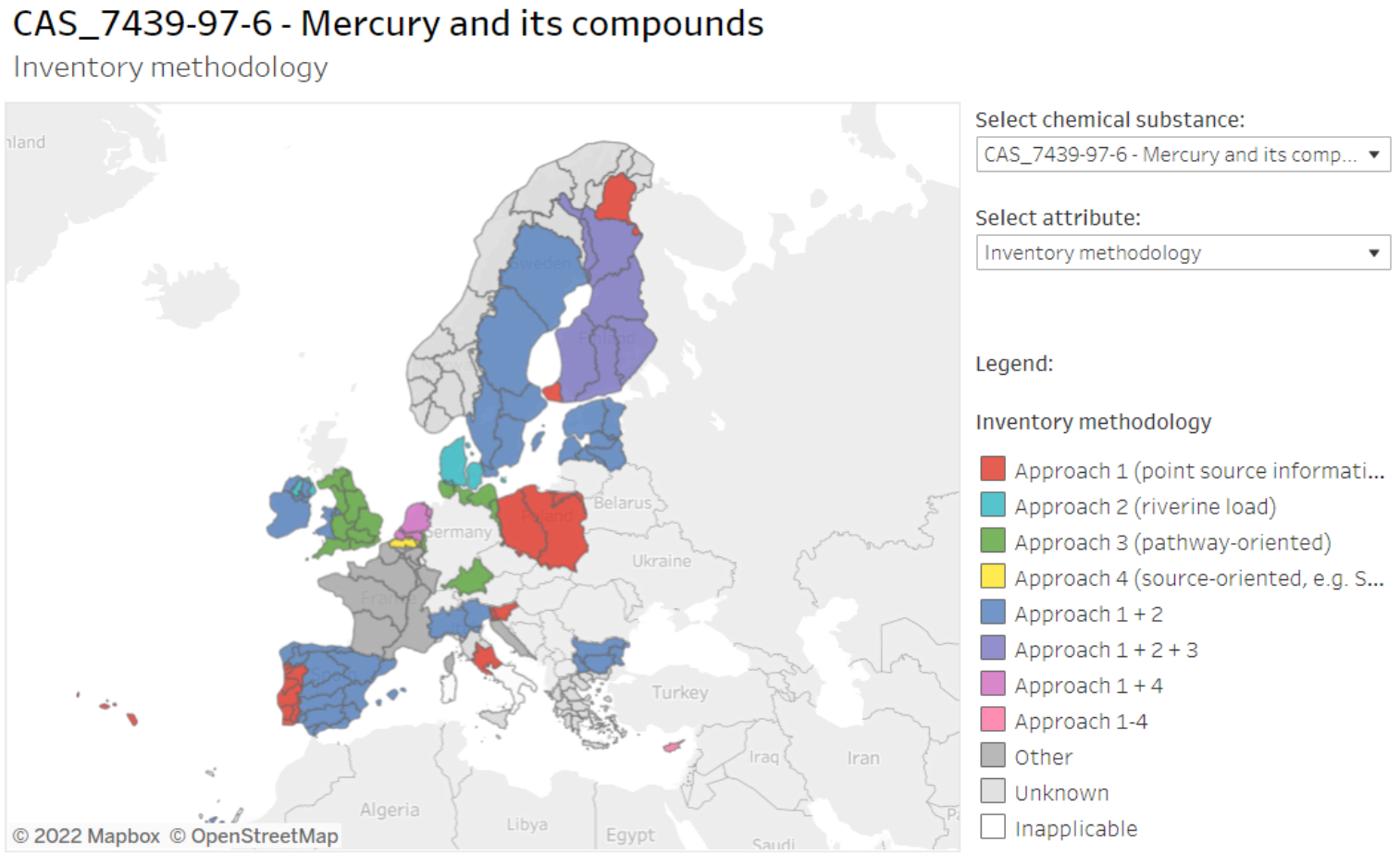
Simplified method for the quantification of emissions to water



Caroline Whalley, WISE 1 emissions webinar, 10th October 2022

European Environment Agency

Reporting of emissions to water - 2nd RBMPs



Notes:
1) The dashboard contains information processed from the data provided during the 2nd River Basin Management Plans reporting.
2) Some of the reported data was excluded due to inconsistencies, which possible resulted from the bypass of the automated data quality control in incomplete data deliveries ("Annex 0" envelopes).
3) The data integration process used information reported about Priority Substances causing failure to achieve Good Chemical status in order to access the relevance at RDB scale.
4) The information about the emissions reported under the WISE SoE Emissions dataflow (WISE-1) was not consolidated with the 2nd RBMP data.

- Much variability between MS approaches
- Difficulties in electronic reporting of emissions (improved for 3rd RBMPs)

→ Significant lack of confidence in comparability of the data

European Environment Agency

Draft dashboard on emissions methodology

Activity to improve reporting on emissions to water

Aim to support better and more comparable reporting in future.

WFD WG Chemicals work programme 2019-21 – subgroup to improve emissions reporting, led by EEA/ETC-ICM

Project made significant progress, but "not quite finished" with 13 pathways identified in technical guidance on Priority Substances Emission Inventory

Work aims to support countries where there is no better information available.

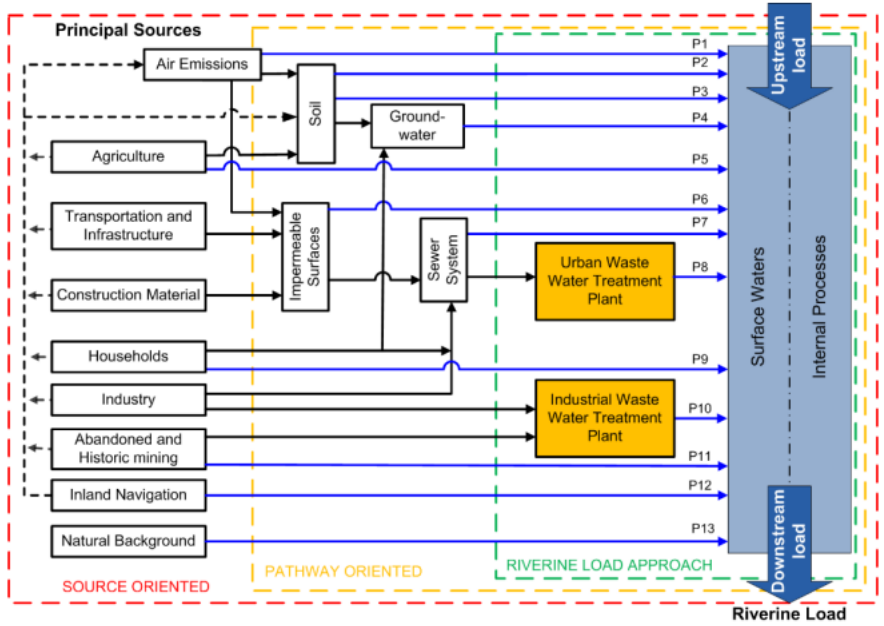
Factsheets complete. Send to WG Chemicals for review and approval	Factsheets nearly ready, we can finalise for WG Chemicals by end of September	Factsheets need significant effort before finalisation. Stop development now. Submit as "part done" to WG Chemicals.
1 – atmospheric deposition 8 – UWWT 9 – untreated household discharges 10 – industrial waste water 12 – inland navigation	6 – runoff from sealed areas 7 – SWO, CSO 11 – mining 13 - natural background	2-5 – soils: metals + pesticides

Sub-group conclusions 15 Sept 2021

European Environment Agency

Approach taken

Figure 2. 1 Relationship between the different surface water compartments and pathways (P1-P13).



P1 Atmospheric Deposition directly to surface water	P8 Urban Waste Water treated
P2 Erosion	P9 Individual - treated and untreated- household discharges
P3 Surface runoff from unsealed areas	P10 Industrial Waste Water treated
P4 Interflow, Tile Drainage and Groundwater	P11 Direct Discharges from Mining
P5 Direct discharges and drifting	P12 Direct Discharges from Navigation
P6 Surface Runoff from sealed Areas	P13 Natural Background
P7 Storm Water Outlets and Combined Sewer overflows + unconnected sewers	

Source: EC (2012)

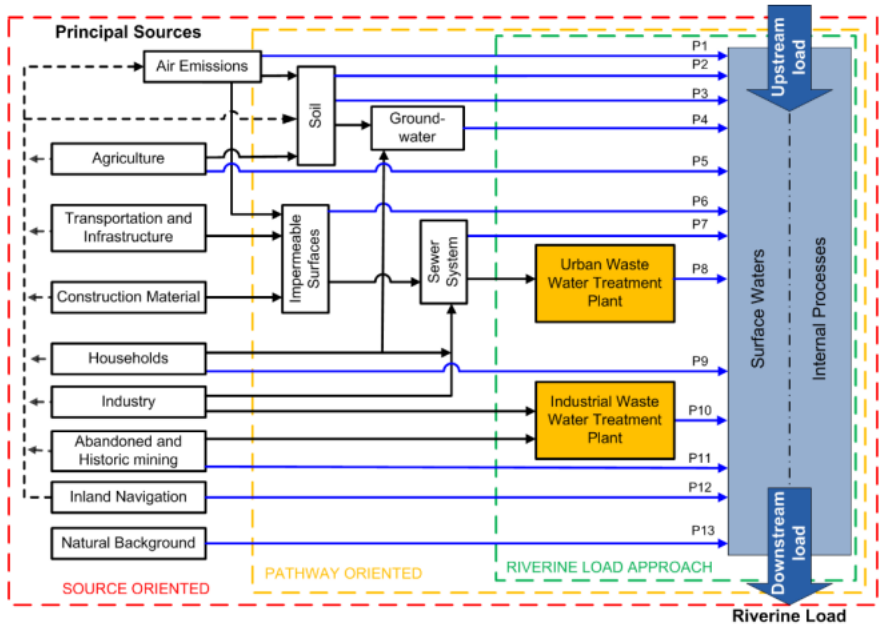
TGD 28, EC 2012

European Environment Agency

Approach taken

- Intention to assist countries with their calculations, in cases where they lack better information
- No requirement to use the approach
  supplements WFD CIS Technical Guidance Document
- Emission factors provided for a specific activity rate (and pathway) and pollutant, where possible.
- (Activity rate – eg no. of inhabitants; population equivalent; annual km driven by cars.)

Figure 2. 1 Relationship between the different surface water compartments and pathways (P1-P13).



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Example of calculation using factors

Emission (E) = Activity Rate (AR) x Emission Factor (EF)

Where:

Emission = emission of lead by UWWTPs in RBD (kg/year)
Activity Rate = annual effluent flow for all UWWTPs in RBD (m^3/year)
Emission Factor = concentration of lead in effluent (µg/l)

EF for lead = 0.73 µg/ (Table 7.4)
AR of 10^6 m^3/year
Calculate the emission of lead to surface water:

0.73 x 10-9 (µg to kg) x 10^6 x 10^3 (m^3 to l) = 0.73 kg/year.

Look up tables

Table 6. 6 Metal load (Cadmium, Nickel, Lead) entering septic tanks on a per capita basis on the country level (Comber 2021).

Country*	Cadmium concentration (mg/capita/day)		Nickel concentration (mg/capita/day)		Lead concentration (mg/capita/day)
	Based on calculated loads	Based on measured loads	Based on calculated loads	Based on measured loads	Based on measured loads
Albania	0.172	0.162	1.02	1.37	3.26
Austria	0.092	0.072	0.63	0.61	1.44
Belgium	0.078	0.055	0.53	0.47	1.11
Bosnia and Herzegovina	0.073	0.050	0.49	0.42	1.00
Bulgaria	0.081	0.060	0.56	0.51	1.20
Croatia	0.091	0.071	0.61	0.60	1.42
Cyprus	0.177	0.171	1.00	1.45	3.44
Czechia	0.074	0.051	0.56	0.43	1.02
Denmark	0.097	0.079	0.63	0.67	1.26
Estonia	0.076	0.054	0.51	0.46	1.09
Finland	0.127	0.069	0.76	0.59	1.39
France	0.108	0.086	0.67	0.73	1.73
Germany	0.083	0.073	0.58	0.62	1.47

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Look up tables

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Contents + detailed annexes

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PUBLICATION LATER THIS YEAR – Link to be circulated

Contents + detailed annexes

European Environment Agency

Thank you

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WISE SoE datacall opens today, 10th October!