Water Data

Data about production and domestic water use is collected in the Water section of FEM separated by facility type.

Domestic water use is either reported as a part of production use, in the case that a facility cannot separate the water usage, or separately.

You can determine whether a facility is reporting water values split between domestic and production or combined by looking at the ref_id `wattrackdomprodsep` an answer of No means the facility is reporting combined (row 3 in the table below) and `Yes` means separated (rows 1 and 2 in the table below). Because a facility will never report using both methods they may safely be summed without risk of double counting.

Raw water use is reported in the follow ref_ids:

Scope	Usage	Unit of Measure
Domestic	wattrackdom[1]quant	wattrackdom[1]unit
Production	wattrack[1]prod[2]quant	wattrack[1]prod[2]unit
Domestic & Production	wattrack[1]all[2]quant	wattrack[1]all[2]unit

Where the wildcards [1] and [2] represent the water source and facility type which may be any of the following values:

Index	Kind	Reference	Value
1	Water Source	watsourcesurface	Surface Water
1	Water Source	watsourceground	Groundwater
1	Water Source	watsourcemunicipalblue	Municipal Blue Water
1	Water Source	watsourcemunicipalunk	Municipal Water (Origin Unknown)
1	Water Source	watsourcesea	Brackish surface water/seawater

Index	Kind	Reference	Value
1	Water Source	watsourcecond	Condensate from External Steam Source
1	Water Source	watsourcerain	Rainwater
1	Water Source	watsourcemunicipalgrey	Municipal Grey Water
1	Water Source	watsourcerecycle	Recycled Water
1	Water Source	watsourcereuse	Reuse Water
1	Water Source	watsourcewaste	Treated Wastewater from External Source
1	Water Source	watsourcewasteinternal	Untreated Wastewater from External Sources (treated internally)
1	Water Source	watsourcesurface	Surface Water
1	Water Source	watsourceground	Groundwater
1	Water Source	watsourcemunicipalblue	Municipal Blue Water
1	Water Source	watsourcemunicipalunk	Municipal Water (Origin Unknown)
1	Water Source	watsourcesea	Brackish surface water/seawater
1	Water Source	watsourcecond	Condensate from External Steam Source
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1	Water Source	watsourcemunicipalgrey	Municipal Grey Water

Index	Kind	Reference	Value
1	Water Source	watsourcerecycle	Recycled Water
1	Water Source	watsourcereuse	Reuse Water
1	Water Source	watsourcewaste	Treated Wastewater from External Source
1	Water Source	watsourcewasteinternal	Untreated Wastewater from External Sources (treated internally)
2	Facility Type	finalProductAssembly	Finished Product Assembler
2	Facility Type	printingProductDyeingAndLaundering	Finished Product Processing (Product Printing, Product Painting, Product Dyeing, Product Laundering and Product Finishing, Embroidery & Embellishments)
2	Facility Type	hardComponentTrimProduction	Component / Sub-Assembly Manufacturing (incl Packaging) (e.g. Label, Zipper, Snap, Button, Elastic Buggie, cardboard, etc)

Index	Kind	Reference	Value
2	Facility Type	materialProduction	Material Production (Raw and intermediate materials are transformed into their final state before assembly) (e.g. Fabric dye-house, Fabric manufacturer, Yarn Dyeing, PCB manufacturer, etc)
2	Facility Type	rawMaterialProcessing	Raw Material Processing (Raw Materials are processed into intermediate material products) (e.g. Yarn Spinning).
2	Facility Type	rawMaterialCollection	Raw Material Collection & Bulk Refining (Materials are collected/extracted/farmed and refined to bulk commodity state) (eg. Cotton Farming and Ginning, processing of bottles, fabric scrap, etc.. into new recycled material)

So the raw value for usage of surface in Raw Material Collection & Bulk Refining for production would be found in either the ref_id `wattrackwatsourcesurfaceprodrawMaterialCollectionquant` or `wattrackwatsourcesurfaceallrawMaterialCollectionquant` the former if `ensourcetracksepdomprod` is Yes the latter if it is no and then combined with domestic water use but never both.

Water Aggregates

`[1]total`

Total liters of water across all facility types, and domestic usage from the water source represented by the wild card `[1]`

`domestic_total_water_l`

Total water use from domestic usage across all sources.

`watsourcewithdrawal`

Total liters of water across all facility types, and domestic usage from the water sources:

```
watsourceground
watsourcemunicipalblue
watsourcemunicipalunk
```

`watsourcerecycled`

Total liters of water across all facility types, and domestic usage from the water sources:

```
watsourcemunicipalgrey
watsourcecond
watsourcerecycle
watsourcereuse
watsourcewaste
watsourcewasteinternal
```

`watsourcetotaltotal`

Total water use across all sources, facility types, and domestic use.

`[2]_water_l`

Total liters of water used across all sources for the facility type represented by the wild card `[2]`

`[2]_water_l`

Total liters of water used across all sources for the facility type represented by the wild card `[2]`. Includes domestic usage added evenly across each facility type.

`[2]_normalized_water_l`

Total liters of water used per unit produced across all sources for the facility type represented by the wild card `[2]`. Includes domestic and vehicle usage added evenly across each facility type. The unit total and unit of measure can be found in `sipfacilityannualprodvolquant[2]` and `sipfacilityannualprodvolunits[2]` respectively.

Waste Data

Data about waste generation is collected in the Waste section of FEM separated by hazardous and non-hazardous waste type. Unlike energy and water it is not reported by facility type.

Raw waste generation is reported in the follow ref_ids:

Scope	Usage	Unit of Measure
Hazardous	wstsourceh[1]quant	wstsourceh[1]unit
Non Hazardous	wstsourcenh[1]quant	wstsourcenh[1]unit

Where the wildcard [1] represents the waste source which may be any of the following values:

Index	Kind	Reference	Value
1	Non-Hazardous Waste Stream	textile	Textile Waste
1	Non-Hazardous Waste Stream	leather	Leather Waste
1	Non-Hazardous Waste Stream	rubber	Rubber Waste
1	Non-Hazardous Waste Stream	metal	Metal
1	Non-Hazardous Waste Stream	plastic	Plastic
1	Non-Hazardous Waste Stream	paper	Paper
1	Non-Hazardous Waste Stream	cans	Cans
1	Non-Hazardous Waste Stream	wood	Wood
1	Non-Hazardous Waste Stream	food	Food Waste

Index	Kind	Reference	Value
1	Non-Hazardous Waste Stream	glass	Glass
1	Non-Hazardous Waste Stream	cartons	Cartons
1	Non-Hazardous Waste Stream	foams	Foams (EVA, etc.)
1	Non-Hazardous Waste Stream	wastewaterTreatmentSludge	Pre-water Treatment Sludge (Non-Hazardous)
1	Non-Hazardous Waste Stream	general	General or unspecified waste
1	Non-Hazardous Waste Stream	slagnh	Slag (Non-Hazardous)
1	Non-Hazardous Waste Stream	other	Other
1	Hazardous Waste Stream	prodchemdrum	Empty chemical drums and containers (without proper cleaning)
1	Hazardous Waste Stream	prodfilmprint	Film and Printing Frame
1	Hazardous Waste Stream	prodsludge	Pre-water Treatment Sludge (Hazardous)
1	Hazardous Waste Stream	prodchem	Expired/unused/used chemicals (waste oil, solvents, reactants, etc.)
1	Hazardous Waste Stream	prodcompgas	Compressed gas cylinders (refrigerants, etc.)
1	Hazardous Waste Stream	prodcontammat	Contaminated materials
1	Hazardous Waste Stream	dombatteries	Batteries
1	Hazardous Waste Stream	domflolight	Fluorescent light bulb
1	Hazardous Waste Stream	dominkcart	Ink cartridges
1	Hazardous Waste Stream	domoilgrease	Waste oil and grease (from cooking)

Index	Kind	Reference	Value
1	Hazardous Waste Stream	productionoil	Waste oil and grease (from production, maintenance, etc. - not cooking)
1	Hazardous Waste Stream	metalsludge	Metal Sludge
1	Hazardous Waste Stream	emptyother	Empty containers (cleaning, sanitizing, pesticides, etc.)
1	Hazardous Waste Stream	domelectronic	Electronic Waste
1	Hazardous Waste Stream	domcoalcomb	Coal combustion residuals (fly ash and bottom ash/coal slag)
1	Hazardous Waste Stream	slag	Slag (Hazardous)
1	Hazardous Waste Stream	other	Other

Waste Aggregates

Waste totals are converted to kilograms from the reported units and aggregations are provided in the following calculations:

`wstsourcetotalnonhaz`

Total kilograms of non hazardous waste.

`wstsourcetotalhaz`

Total kilograms of hazardous waste.

`wstsourcetotal`

Total kilograms of all waste, both hazardous and non hazardous.