

## **Draft reporting template for reporting of inputs and outputs of Comprehensive Assessment under Article 14 and Annex VIII of the Directive 2018/2002/EU**

- The aim of this template is to facilitate reporting of The quantitative parameters and variables used in and resulting from The Comprehensive Assessment of the potential for efficient heating and cooling;
- This template is based on the Article 14 and Annex VIII of the Directive 2018/2002/EU as well as on Commission Recommendation of XXX on Commission Delegated Regulation (EU) [...] on the contents of comprehensive assessments of the potential for heating and cooling;
- This template is to be used as an additional reporting tool annexed to the main report on the Comprehensive Assessment of the potential for efficient heating and cooling in the territory of Member State and is not meant to be a substitute for such report;
- Member States are free to add additional information to this template;
- Year X represents the starting year of the Comprehensive Assessment;

**This document states the views of the Commission services, does not alter the legal effects of the Directive and is without prejudice to the binding interpretation of the revised EED as provided by the Court of Justice.**

**Part I: Overview of heating and cooling (1. Reporting current heating and cooling demand + 4. Reporting forecasted heating and cooling demand)**

		Year							
		Unit	2021	2025	2030	2035	2040	2045	2050
Heating demand, <b>final</b> energy	Residential sector	GWh/a	4452						
	Service sector	GWh/a	2871						
	Industrial sector	GWh/a	418						
	Other sectors	GWh/a							
Cooling demand, <b>final</b> energy	Residential sector	GWh/a	8	11	15	21	27	34	41
	Service sector	GWh/a	137	180	232	290	344	396	443
	Industrial sector	GWh/a	17	21	27	32	37	40	43
	Other sectors	GWh/a							
Heating demand, <b>useful</b> energy	Residential sector	GWh/a	3845	3634	3379	3118	2861	2711	2762
	Service sector	GWh/a	2452	2347	2222	2120	2005	1893	1799
	Industrial sector	GWh/a	357	329	300	272	244	202	168
	Other sectors	GWh/a							
Cooling demand, <b>useful</b> energy	Residential sector	GWh/a	24	32	45	62	80	101	123
	Service + industrial	GWh/a	463	604	777	964	1143	1310	1458
	Service sector	GWh/a	412	540	697	869	1033	1189	1328
	Industrial sector	GWh/a	51	64	80	95	110	121	130
	Other sectors	GWh/a							
Process heat demand; <b>usefull</b> energy	Industrial sector	GWh/a	3074	2976	2864	2762	2672	2593	2527
Process heat demand; <b>final</b> energy	Industrial sector	GWh/a	3836						

Notes: X represents the starting year of the analysis;  
 The column for year X should contain actual numbers of current heating and cooling demand;  
 Columns for years X+5,...,X+30 should contain forecasted values of useful energy demand;

**Part I: Overview of heating and cooling (2.(a) Reporting current heating and cooling supply)**

**YEAR X**

**Energy provided on-site**

			Unit	Value
Residential sector	Fossil fuel sources	Heat only boilers	GWh/a	4516
		Other technologies	GWh/a	
		HECHP	GWh/a	0
	Renewable energy sources	Heat only boilers	GWh/a	248
		HECHP	GWh/a	0,04
		Heat pumps	GWh/a	42
Other technologies		GWh/a	75	
Service sector	Fossil fuel sources	Heat only boilers	GWh/a	3039
		Other technologies	GWh/a	0
		HECHP	GWh/a	0
	Renewable energy sources	Heat only boilers	GWh/a	4
		HECHP	GWh/a	0
		Heat pumps	GWh/a	0
Other technologies		GWh/a	2	
Industrial sector	Fossil fuel sources	Heat only boilers	GWh/a	3643
		Other technologies	GWh/a	0
		HECHP	GWh/a	0
	Renewable energy sources	Heat only boilers	GWh/a	493
		HECHP	GWh/a	0
		Heat pumps	GWh/a	72
Other technologies		GWh/a	0	
Other sectors	Fossil fuel sources	Heat only boilers	GWh/a	0
		Other technologies	GWh/a	0
		HECHP	GWh/a	0
	Renewable energy sources	Heat only boilers	GWh/a	0
		HECHP	GWh/a	0
		Heat pumps	GWh/a	0
Other technologies		GWh/a		

**Energy provided off-site**

Residential sector	Fossil fuel sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0
		Other technologies	GWh/a	30
	Renewable energy sources	Waste heat	GWh/a	0
		HECHP	GWh/a	2
Other technologies		GWh/a	0,31	
Service sector	Fossil fuel sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0
		Other technologies	GWh/a	12
	Renewable energy sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0,04
		Other technologies	GWh/a	0,17
Industrial sector	Fossil fuel sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0
		Other technologies	GWh/a	108
	Renewable energy sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0
		Other technologies	GWh/a	0

Other sectors	Fossil fuel sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0
		Other technologies	GWh/a	0
	Renewable energy sources	Waste heat	GWh/a	0
		HECHP	GWh/a	0
		Other technologies	GWh/a	0

## Part I: Overview of heating and cooling (2.(b) Reporting identified available waste heat)

### YEAR X

	Threshold	Unit	Value
Thermal power generation installations	50 MW	GWh/a	0
CHP	20 MW	GWh/a	0
Waste incineration plants*	-	GWh/a	0
Renewable energy installations	20 MW	GWh/a	0
Industrial installations**	20 MW	GWh/a	878

Notes: The table shows the identified waste heat not used yet. In contrast, waste heat already used is not considered here.

\* In Luxembourg, there is one waste incineration plant in Leudelange (<https://www.eew-energyfromwaste.com/en/our-sites/leudelange/>), commissioned in 2010.

The plant already decouples 31 GWh/a of heat, so that there is no additional available waste heat seen which can be specified here.

\*\* In the report's authors' view, waste heat potentially usable from industrial installations cannot be quantified reliably without in-depth studies on site.

Therefore, industrial manufacturing companies were assessed on the basis of economic sector and size (see chapter 7.2.1 in the attached report) without quantifying the amount of available waste heat.

The given value has been taken over from Simon Pezzutto, Stefano Zambotti, Silvia Croce, Pietro Zambelli, Giulia Garegnani, Chiara Scaramuzzino, Ramón Pascual Pascuas, Alyona Zubaryeva, Franziska Haas, Dagmar Exner (EURAC), Andreas Mueller (e-think), Michael Hartner (TUW), Tobias Fleiter, Anna-Lena Klingler, Matthias Kuehnbach, Pia Manz, Simon Marwitz, Matthias Rehfeldt, Jan Steinbach, Eftim Popovski (Fraunhofer ISI) Reviewed by Lukas Kranzl, Sara Fritz (TUW):

Hotmaps Project, D2.3 WP2 Report – Open Data Set for the EU28, 2018 [www.hotmaps-project.eu](http://www.hotmaps-project.eu).

Hotmaps does not consider already used waste heat, so the actual available waste heat in industry may vary.

In addition, it is possible that there are further industries not considered by Pezzutto et al. (e.g. timber industry) with available, unused waste heat, not included here.

**Part I: Overview of heating and cooling (Reporting economic potential of efficient and renewable heating and cooling technologies identified during the CBA)**

**YEAR X+30**

	Unit	Value
Industrial waste heat	GWh/a	0
Industrial waste cold	GWh/a	0
Waste incineration	GWh/a	0
High efficiency CHP	GWh/a	87
Renewable energy sources		
<i>Geothermal</i>	GWh/a	0
<i>Biomass</i>	GWh/a	1 670
<i>Solar thermal</i>	GWh/a	596
<i>Other RES</i>	GWh/a	0
Heat pumps	GWh/a	963
Heat loss reduction in existing DHC networks	GWh/a	0

Notes: The table shows the share of final energy within the alternative scenario described in chapter 7.2.3 in the attached report. The alternative scenario is seen as economically most advantageous one during the CBA.

**Alternative (with sectors added)**

	Residential	Services	Industry	Other
	GWh/a	GWh/a	GWh/a	GWh/a
Industrial waste heat				
Industrial waste cold				
Waste incineration				
High efficiency CHP	24	9	55	
Renewable energy sources				
<i>Geothermal</i>				
<i>Biomass</i>	105	22	1 542	
<i>Solar thermal</i>	348	248	-	
<i>Other RES</i>				
Heat pumps	378	414	170	
Heat loss reduction in existing DHC networks				