

**Organo
Competente**

UNI/CT 251 "Impianti di riscaldamento - Progettazione, fabbisogni di energia e sicurezza (UNI/TS 11300-2 e 11300-4)"

Titolo Italiano

Dati di ingresso e metodi – Scelte italiane

Titolo Inglese

Input and method selection data sheet – Italian choices

Sommario IT

Il presente documento costituisce l'appendice nazionale della UNI EN 15316-4-5:2018. Esso definisce le scelte tra i metodi, i dati di input richiesti e i riferimenti ad altre norme per la sua applicazione a livello nazionale.

Sommario EN

This document represents the National Annex of UNI EN 15316-4-5:2018. It specifies the Italian choices between methods, the required input data and references to other standards for its application at national level.

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Annex NA (normative)

Input and method selection data sheet – Italian choices

NA.1 Introduction

This annex is part of a series of national annexes and replacement modules, designed to facilitate the application of the CEN set of standards for calculating the energy performance of buildings.

For legal purposes, demonstrating compliance with energy performance requirements and issuing energy performance certificates, the technical specifications of the UNI/TS 11300 series will continue to be used, in accordance with current legislation.

This document is intended for subsequent use in conjunction with the future revision of the current UNI/TS 11300-2 and UNI/TS 11300-3 technical specifications.

NOTE: The table numbering remains the same as in the original Annex B of the EN 15316-4-5 standard for ease of reference.

NA.2 References

The normative references identified by the module code are listed in Table NA.1.

Table NA.1 — Normative References

Code Reference	Number	Title
M1-7	EN ISO 52000-1	Energy performance of buildings — Overarching EPB assessment — Part 1: General framework and procedures (ISO 52000-1)
M3-6	EN 15316-3	Heating systems and water based cooling systems in buildings — Method for calculation of system energy requirements and system efficiencies — Part 3: Space distribution systems (DHW, heating and cooling)

NA.3 Conversion Factors for Energy Carriers

Table NA.2 — Conversion Factors for Heat Energy Carriers

	Heat Energy Carrier	$f_{p,ren}$	$f_{p,ren}$	$f_{p,tot}$	f_{co2} (g/kWh)
1	Heat produced by boilers using				
	Solid fossil fuels	1.7	0	1.7	530

2	Liquid fossil fuels	1.6	0	1.6	400
3	Gaseous fossil fuels	1.5	0	1.5	310
4	Solid biofuels	0.4	1.4	1.8	70
	Liquid biofuels	0.7	1.4	2.1	110
5	Gaseous biofuels	0.6	1.4	2.0	150
1	Heat from cogeneration using				
	Solid fossil fuels	0.8	0	0.8	500
2	Liquid fossil fuels	0.7	0	0.7	330
3	Gaseous fossil fuels	0.7	0	0.7	160
4	Solid biofuels	0	2.0	1.8	0
	Liquid biofuels	0	2.4	1.7	0
	Gaseous biofuels	0	2.4	1.4	0

5	Nuclear energy plants	0.6	0	0.6	120
	Waste Heat from b)				
	Industrial processes				
	Process-related component	0	0	0	0
	District heating component + process component	0.4	0	0.4	90
	Waste combustion				
	With cogeneration	0.1	0	0.1	25
	Without cogeneration	0.2	0	0.2	50
	a) The values are cautionary and include distribution losses.				

b) The values are conventional.					
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Table NA.3 — Conversion Factors for Specific Fuels

	Energy Carrier	$f_{p,nren}$	$f_{p,ren}$	$f_{p,tot}$	f_{CO_2} (g/kWh)
1	Carriers from multi-output systems				
	Waste	0.20	0.20	0.40	40
2	Waste fuels	0.20	0	0.20	40
3	Sewage sludge	0	0	0	0
4	Landfill gas	0	0	0	0
5	Gas from mines and coke ovens	0	0	0	0

For energy carriers not included in this table, reference should be made to **Table NA.16 and the instructions in the Italian national annex of standard UNI EN ISO 52000-1.**

Table NA.4 — Electrical Conversion Factors

	Energy Carrier	$f_{p,ren}$	$f_{p,ren}$	$f_{p,tot}$	f_{CO_2} (g/kWh)
1	Electricity exported to the grid from cogeneration	1.95	0.47	2.42	460
2	Electricity produced by photovoltaic, mini-wind, and mini-hydro	0.00	1.00	1.00	0.00

Table NA.5 — Default values for RER and WHR (see 7.1 and 7.2)

	Energy Carrier	RER_{mos}	WHR_{mos}
1	Waste heat from industrial processes		
	Process-related component	0	1

2	District heating component + process component	0	0.60
3	Waste combustion		
	Waste as fuel	0.40	1
4	Heat from waste combustion	0.50	1.00
5	Fuels		
	Waste fuel	0	0.80
6	Sewage sludge	0.90	1
7	Landfill gas	0.90	1
8	Gas from mines and coke ovens	0	1

NA.4 Distribution Systems

Table NA.6 — Requirements for combining distribution systems (see 6.2.3)

Energy Carrier	Can be combined	Conditions for combining
Thermal energy carriers at different temperatures and pressures	YES	The distributions must have a physical connection through a condenser, reboiler, exchanger, valve, etc.
Electrical energy at different voltages or different types (AC or DC)	YES	The networks must be interconnected
Gaseous fuels of different composition and pressure	YES	The networks must have a physical interconnection for gas exchange
Thermal and electrical energy carriers	NO	-----
Thermal and gaseous energy carriers	NO	-----
Electricity and gaseous energy carriers	NO	-----

Table NA.7 — Requirements for subdividing distribution systems (see 6.2.3)

Distribution Systems	Can be subdivided	Conditions for subdivision
District heating and district cooling	YES	Presence of meters at the boundary between subsystems
District electricity production	YES	Presence of meters at the boundary between subsystems
District gas production	YES	Presence of meters at the boundary between subsystems

Table NA.8 — Default values for distribution systems (see 6.2.3)

Distribution Systems		Value	Unit
District heating	Thermal losses of new networks	250	kWh per trench meter per year
	Thermal losses of existing networks	13	% of thermal energy input
	Electrical consumption of networks	1	% of thermal energy input
District cooling	Thermal losses	0	% of cooling energy input

District electricity production	Energy losses of the network	7.5	% of electrical energy input
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NA.5 Reference Values

Table NA.9 — Reference efficiency of cogeneration units (see 6.2.2.1.3)

Cogeneration Unit	$\eta_{\text{ref,tot}}^{\text{a}}$
Units with power losses	0.80
Units without power losses	0.75
a) Referred to the lower heating value	

Table NA.10 — Reference efficiencies of other systems (see 6.2.2.1.6.4, 6.2.2.1.6.5 and 6.2.2.1.6.6)

Fuel	$\eta_{\text{el,ref}}$	$\eta_{\text{T,ref}}$
All	0.413	0.9
a) Referred to the lower heating value		

NA.6 Choice of Calculation Method

Criteria for the choice of the calculation method for the conversion factors of cogenerated electrical and thermal energy:

- Cogeneration technology;
- Required conversion factors.

Table NA.11 — Calculation method for conversion factors (see 6.2.2.1.5 and 6.2.2.1.6)

	Conversion Factors for
	Heat
Units with power losses	Carnot (see 6.2.2.1.6.3)
Units without power losses	Carnot (see 6.2.2.1.6.3)

As of the publication date of this standard, the Ministerial Decree (DM) October 28, 2026 "Update to the decree of June 26, 2015, concerning the application of energy performance calculation methodologies and definition of minimum requirements and requirements for buildings" is published (it will be in force 180 days after publication). For the purposes referred to in Legislative Decree (D.Lgs) 192/05 and subsequent amendments and additions, the methodology to be used is the one indicated in the aforementioned DM, or its subsequent amendments and additions.

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