SCHEDULES

SCHEDULE 4

Measurement methods and calculations for refrigerating appliances with a direct sales function

2.—(1) The EEI is determined as follows.

(2) For all refrigerating appliances with a direct sales function, the EEI, expressed in per cent and rounded to the first decimal place, is the ratio of the AE (in kWh/a) and the reference SAE (in kWh/a) and is calculated as—

EEI = AE/SAE.

(3) For the purposes of sub-paragraph (2) the AE, expressed in kWh/a and rounded to two decimal places, is calculated as follows—

$AE = 365 \times E_{daily}$;

where E_{daily} is the energy consumption of the refrigerating appliance with a direct sales function over 24 hours, expressed in kWh/24h and rounded to three decimal places.

(4) For the purposes of sub-paragraph (2) the SAE, expressed in kWh/a and rounded to two decimal places, is calculated as follows—

(a) for refrigerating appliances with a direct sales function where all compartments have the same temperature class, and for refrigerated vending machines, the SAE is calculated as—

$SAE = 365 \times P \times (M + N \times Y) \times C$;

(b) for all other refrigerating appliances with a direct sales function, the SAE is calculated as—

$$SAE = 365 \times P \times \sum_{c=1}^{n} (M + N \times Y_c) \times C_c$$

(5) For the purposes of sub-paragraph (4)—

(a) c is the index number for a compartment type ranging from 1 to n, with n being the total number of compartment types;

(b) the values of M and N are as set out in Table 6;

(c) the values of C (the temperature coefficient) are set out in Table 7; for any appliance not listed in Table 7, the value of C is 1;

(d) coefficient Y is calculated as follows—

(i) for beverage coolers, Y_c is the equivalent volume of the compartments of the beverage cooler with target temperature Tc, (Veq_c), calculated as follows—

$Y_c = Veq_c = GrossVolume_c \times ((25 - Tc)/20) \times CC$;

where—

Tc is the average compartment temperature and CC is the climate class factor;

the values for Tc are as set out in Table 8;

the values for CC are as set out in Table 9;

(ii) for ice-cream freezers, Y_c is the equivalent volume of the compartments of the ice-cream freezer with target temperature Tc, (Veq_c), calculated as follows—

$Y_c = Veq_c = NetVolume_c \times ((12 - Tc)/30) \times CC$; where—

Tc is the average compartment temperature and CC is the climate class factor;

the values for Tc are as set out in Table 10;

the values for CC are as set out in Table 11;

(iii) for refrigerated vending machines, Y is the net volume of the refrigerated vending machine, which is the sum of the volumes of all compartments within which the products directly available for vending are contained and the volume through which the products pass during the dispensing process, expressed in litres (L) and rounded to the nearest integer;

(iv) for all other refrigerating appliances with direct sales function, Y_c is the sum of the TDA of all compartments of the same temperature class of the refrigerating appliance with a direct sales function, expressed in square meters (m^2), and rounded to two decimal places;

(e) the values of P are set out in Table 12.

Table 6

M and N values

Category	*Value for M*	*Value for N*
Beverage coolers	2.1	0.006
Ice-cream freezers	2.0	0.009
Refrigerated vending machines	4.1	0.004
Gelato-scooping cabinets	25.0	30.4
Vertical and combined supermarket refrigerator cabinets	9.1	9.1
Horizontal supermarket refrigerator cabinets	3.7	3.5
Vertical and combined supermarket freezer cabinets	7.5	19.3
Horizontal supermarket freezer cabinets	4.0	10.3
Roll-in cabinets (until 31 August 2023)	9.2	11.6
Roll-in cabinets (from 1 September 2023)	9.1	9.1

Table 7

Temperature conditions and corresponding coefficient (C) values

Part 1 – supermarket and gelato cabinets

Category	*Temperature class*	*Highest temperature of warmest M-package (°C)*	*Lowest temperature of coldest M-package (°C)*	*Highest minimum temperature of all M-packages (°C)*	*Value for C*
Vertical and combined supermarket refrigerator cabinets	M2	≤ +7	≥ -1	N/A	1.00
	H1 and H2	≤ +10	≥ -1	N/A	0.82
	M1	≤ +5	≥ -1	N/A	1.15
Horizontal supermarket refrigerator cabinets	M2	≤ +7	≥ -1	N/A	1.00
	H1 and H2	≤ +10	≥ -1	N/A	0.92
	M1	≤ +5	≥ -1	N/A	1.08
Vertical and combined supermarket freezer cabinets	L1	≤ -15	N/A	≤ -18	1.00
	L2	≤ -12	N/A	≤ -18	0.9
	L3	≤ -12	N/A	≤ -15	0.9
Horizontal supermarket freezer cabinets	L1	≤ -15	N/A	≤ -18	1.00
	L2	≤ -12	N/A	≤ -18	0.92
	L3	≤ -12	N/A	≤ -15	0.92
Vertical and combined refrigerator supermarket cabinets	M0	≤ + 4	≥ - 1	N/A	1.30
Horizontal refrigerator supermarket cabinets	M0	≤ + 4	≥ - 1	N/A	1.13
Gelato-scooping cabinets	G1	-10	-14	N/A	1.00
	G2	-10	-16	N/A	1.00
	G3	-10	-18	N/A	1.00
	L1	-15	N/A	-18	1.00
	L2	-12	N/A	-18	1.00
	L3	-12	N/A	-15	1.00
	S (special classification)				1.00

Temperature conditions and corresponding coefficient (C) values

Part 2 – Refrigerated vending machines

Temperature class	*Maximum measured product temperature (T_v) (°C)*	*Value for C*
Category 1	7	$1+(12-T_v)/25$
Category 2	12	

Temperature class	*Maximum measured product temperature (T_v) (°C)*	*Value for C*
Category 3	3	
Category 4	$(T_{v1}+T_{v2})/2$	
Category 6	$(T_{v1}+T_{v2})/2$	

(6) For the purposes of Table 7—

(a) "N/A" means "not applicable";

(b) for multi-temperature vending machines, T_V is the average of T_{V1} (the maximum measured product temperature in the warmest compartment) and T_{V2} (the maximum measured product temperature in the coldest compartment), rounded to one decimal;

(c) the categories of temperature class in Part 2 are—

category 1: refrigerated closed fronted can and bottle machines where the products are held in stacks;

category 2: refrigerated glass fronted can and bottle, confectionery & snack machines;

category 3: refrigerated glass fronted machines entirely for perishable foodstuffs;

category 4: refrigerated multi-temperature glass fronted machines;

category 6: combination machines consisting of different categories of machine in the same housing and powered by one chiller.

Table 8

Temperature classes and corresponding average compartment temperatures (Tc) for beverage coolers

Temperature class	*Tc (°C)*
K1	+3.5
K2	+2.5
K3	-1.0
K4	+5.0

Table 9

Operating conditions and corresponding CC values for beverage coolers

Warmest ambient temperature (°C)	*Ambient relative humidity (per cent)*	*CC*
+25	60	1.00
+32	65	1.05
+40	75	1.10

Table 10

Temperature classes and corresponding average compartment temperatures (Tc) for ice-cream freezers

Temperature class	*Temperature class*	*Tc (°C)*
Warmest M-package temperature colder or equal to in all tests (except lid opening test) (°C)	Warmest M-package maximum temperature rise allowed during the lid opening test (°C)	
-18	2	-18.0
-7	2	-7.0

Table 11

Operating conditions and corresponding CC values for ice-cream freezers

	Minimum ambient temperature (°C)	*Minimum ambient relative humidity (per cent)*	*Maximum ambient temperature (°C)*	*Maximum ambient relative humidity (per cent)*	*CC*
Ice-cream freezer with transparent lid	16	80	30	55	1.00
			35	75	1.10
			40	40	1.20
Ice-cream freezer with non-transparent lid	16	80	30	55	1.00
			35	75	1.04
			40	40	1.10

Table 12

P values

Cabinet type	*P*
Integral supermarket cabinets	1.10
Other refrigerating appliances with a direct sales function	1.00