

Brussels, **XXX**
[...](2017) **XXX** draft

COMMISSION DELEGATED REGULATION (EU) .../...

of **XXX**

supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of household refrigerating appliances and low noise refrigerating appliances

**repealing
Regulation (EU) No 1060/2010 with regard to energy labelling of household refrigerating appliances**

(Text with EEA relevance)

This draft has not been adopted or endorsed by the European Commission. Any views expressed are the preliminary views of the Commission services and may not in any circumstances be regarded as stating an official position of the Commission. The information transmitted is intended only for the Member State or entity to which it is addressed for discussions and may contain confidential and/or privileged material.

EXPLANATORY MEMORANDUM

1. CONTEXT OF THE DELEGATED ACT

Legal framework

The Energy labelling Regulation (EU) 2017/1369 establishes a framework for setting energy labelling regulations for energy-related products at EU level. It is a key EU policy instrument for informing consumers about the energy efficiency and other environmental performance aspects of energy-related products placed on the internal market.

The energy labelling measures applicable to household refrigerating appliances are:

- Commission Regulation (EU) No 1060/2010¹ of 28 September 2010 with regard to energy labelling requirements for household refrigeration appliances;
- as amended by Commission Delegated Regulation (EU) No 518/2014² of 5 March 2014 with regard to labelling of energy-related products on the internet - OJ L 147, 17/05/2014 – p 1-28 and corrigendum OJ L 244, 19.9.2015.

The revision the Energy labelling measure for household refrigerating appliances follows Article 7 of Commission Delegated Regulation (EU) No. 1060/2010. In particular, this review should assess verification tolerances and the possibilities for removing or reducing the values of the correction factors.

Furthermore, according to article 5 of Regulation (EU) 2017/1369 on Energy Labelling (EL)³, a new delegated act for energy labelling of household refrigerating appliances must be adopted at the latest 2 November 2018.

Moreover, there are new policies that force the revision to look beyond the strict scope mentioned in the review articles of the existing implementing and delegated acts for household refrigerating appliances: A renewed effort in carbon emission abatement through the Paris climate agreement⁴, the Commission's Circular Economy⁵, the Better Regulation policy aiming at more efficient and effective legislation^{6 7}, the diesel-gate scandal stressing the need to deeper scrutinise legislation further on the possibilities for circumvention, etc.⁸

General context

In 2014, the Commission conducted an 'Omnibus' review⁹ of several product groups that indicated that there is still a large untapped saving potential for household refrigerating appliances making the regulations eligible for a revision. This was confirmed by the review study, concluded in March 2016¹⁰.

A full impact assessment, including possible alternative scenarios that might come up at the Consultation Forum, will be performed at a later stage. For the moment, the proposal is in line

¹ [OJ L 314 of 30.11.2010, p 17-46](#)

² OJ L 147, 17.5.2014, p. 1–28

³ OJ L 198, 28.7.2017, p. 1–23.

⁴ http://ec.europa.eu/clima/policies/international/negotiations/future/index_en.htm

⁵ Closing the loop - An EU action plan for the Circular Economy". COM(2015) 614 final, Brussels, 2.12.2015

⁶ https://ec.europa.eu/info/law/law-making-process/overview-law-making-process/evaluating-and-improving-existing-laws/reducing-burdens-and-simplifying-law/refit-platform_en

⁷ http://ec.europa.eu/smart-regulation/better_regulation/key_docs_en.htm#_br

⁸ <http://www.europarl.europa.eu/committees/en/emis/home.html>

⁹ 'Omnibus' Review Study on Cold Appliances, Washing Machines, Dishwashers, Washer-Driers, Lighting, Set-top Boxes and Pumps, consortium of VHK, VITO, Viegand Maagøe, Wuppertal Institut für Klima, Umwelt, Energie for the European Commission, DG ENER-C3, Brussels/Delft, April 2014.

¹⁰ VHK and Armines, Preparatory Review Study Household Refrigeration Appliances, for the European Commission, Brussels/Delft, 4 March 2016.

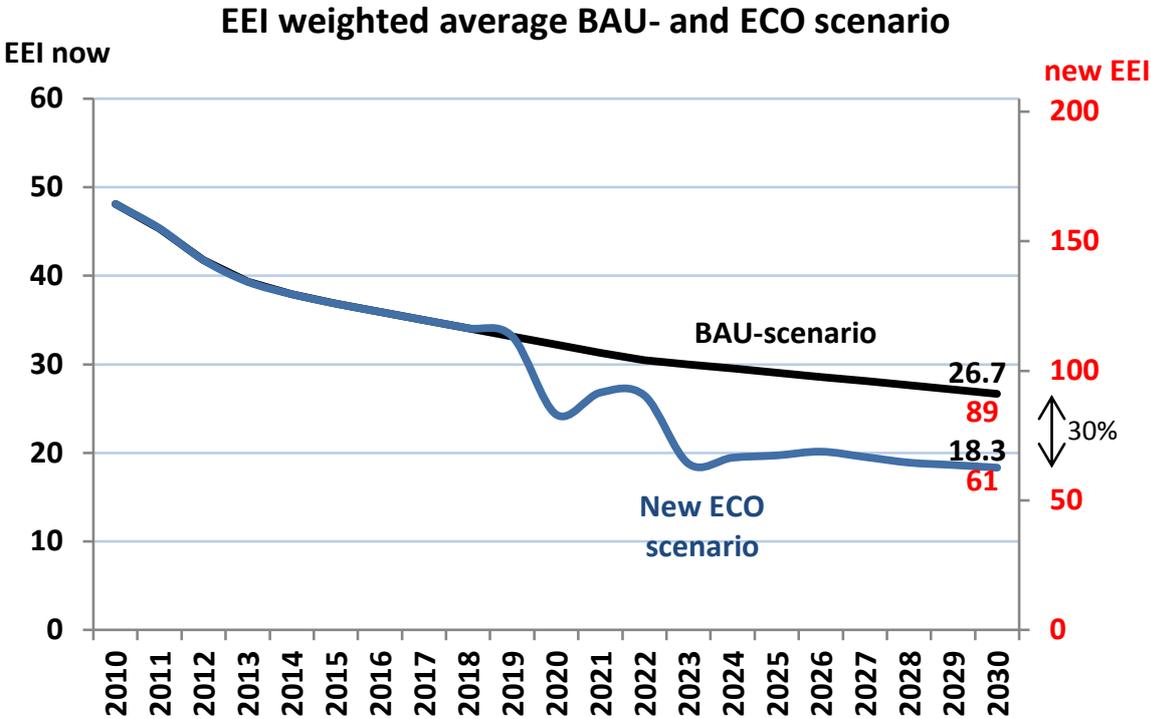
with the preliminary scenario analysis in the review study showing the following savings in 2030, in addition to the savings that can be expected under a Business-as-Usual (BAU) scenario. Savings LLCC 2030 vs. BAU 2030:

- 10 TWh/a electricity
- 3.2 Mt CO2 eq. /a in greenhouse gas emissions
- 1-1.2 billion Euro net consumer expenditure/a

The total absolute savings over the period 2015 until 2030, with the implementation of the new measures, amount to 38 TWh electricity per year and 18 Mt CO2 eq. GHG per year.

The figure below revisits the projections in the preparatory study using the latest industry data and projections as outlined in Figure 2 and Table 1.

Figure 1
Projections of savings following projections in Table 1.



Note that the slight bump in the 2021-2022 is a result of following the calculation model to the letter. In reality a smoother transition is expected.

At technical level, there is the introduction of a new global IEC test standard for refrigerators and freezers that can make a significant contribution in achieving many of the above-mentioned policy objectives¹¹. It is faster, more effective and more efficient for both industry and market surveillances authorities, but it does require a new set-up of Ecodesign and Energy Labelling regulations as well as the harmonised standards behind them.

¹¹ IEC 62552:2015, Household refrigeration appliances – Characteristics and test methods, Parts 1, 2 and 3.

The metrics used in the existing Ecodesign and Energy Labelling regulations for household refrigerating appliances were developed 25 years ago. Since then there has been considerable technological progress, which is no longer reflected in today's metrics for efficiency levels that are >60% lower than 25 years ago. Furthermore, the appliance-based approach is complex in the legislation and unnecessarily rigid.

The current regulation includes correction factors for climate-class (1.1 for sub-tropical ST and 1.2 for tropical T), no frost (1.2), built-in appliances (1.2) and the bonus for the chill compartment (50 kWh at EEI=100). Some of these factors are used as (legal) loopholes and are obscuring the real electricity consumption and efficiency for the end-consumer.

Preliminary findings show that there are considerable benefits in proposing a revision of the current regulation, both in terms of optimising regulatory aspects as in realising additional energy-, CO₂ emission- and monetary savings. As such, a revised regulation would be more effective by supporting global test standards, addressing the outdated metrics and updating the correction factors. The proposed review would also improve the efficiency of the legislation: verifiable exemptions and allowances are needed, and clear and more ambitious efficiency targets are possible.

2. CONSULTATIONS PRIOR TO THE ADOPTION OF THE ACT

Consultation of interested parties

The review process started in 2013 with the Omnibus review study covering multiple product groups amongst which were household refrigerating appliances. The Omnibus review involved bilateral stakeholder consultation and was published in April 2014, i.e. one month before it was discussed in a subsequent Consultation Forum (CF). At the CF it was decided to go ahead with a preparatory review study for the product group. This preparatory study took place from January 2015 until March 2016 (publication date). Stakeholders were informed and consulted through a project website www.ecodesign-fridges.eu, currently still on-line, bilateral meetings and expert interviews as well as two stakeholder meetings at the Commission's premises with over 40-50 participants each. The process was then interrupted for over a year due to uncertainties regarding the new Energy Labelling Regulation and the proposed working plan. During that time the complementary research on the role of household refrigeration, published in March 2017, was performed. In the late spring of 2017 bilateral consultations with experts from industry, NGOs and Member States resumed, involving amongst others input to early drafts of the proposal.

The draft WD and Explanatory Memorandum will be sent out to stakeholder one month before the upcoming Consultation Forum of 6 December.

Impact Assessment

An impact assessment is being prepared to support the preparation of this initiative and to inform the Commission's decision.

The following figure and table shows an initial estimation of the impact of the proposed regulation on household refrigerating appliances, excluding wine storage appliances. It is based on the number of models that are available with a certain EEI and is not coupled to sales data.

The number of models (in %) in a certain energy efficiency class over the period 2010-2030 are shown in Table 1. The figures from 2010 until 2016 are based on actual data and figures from 2017 until 2030 are based on projections.

Table 1

Energy label class distribution and EEI of household refrigerating appliances EU 2010-2030

		% of models										
Year		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
EEI according to 643/2009 & 1060/2010	EEI ≤ 22	A+++	0.0%	0.9%	3.1%	6.4%	8.6%	9.9%	13.2%	16.5%	19.8%	23.1%
	22 < EEI < 33	A++	9.9%	15.1%	26.3%	33.3%	41.3%	45.2%	47.0%	48.8%	50.6%	52.4%
	44 < EEI < 55	A+	50.0%	56.3%	60.1%	58.0%	48.3%	44.9%	39.8%	34.7%	29.6%	24.5%
	55 < EEI < 75	A	36.2%	26.9%	9.6%	1.6%	1.0%					
	EEI ≥ 75	<A	3.9%	0.8%	0.9%	0.7%	0.8%					
EEI according to this proposal	EEI ≤ 41	A										
	41 < EEI ≤ 51	B										
	51 < EEI ≤ 64	C						0.4%	0.5%	0.6%	0.7%	
	61 < EEI ≤ 80	D						12.8%	16.0%	19.2%	22.4%	
	80 < EEI ≤ 100	E						5.3%	5.5%	5.7%	10.0%	
	100 < EEI ≤ 125	F						42.0%	44.0%	45.0%	42.0%	
	EEI > 130	G						40.0%	35.0%	30.0%	25.0%	
Average EEI according to 643/2009 & 1060/2010			48.1	45.3	41.8	39.3	37.9	36.9	35.9	35.0	34.1	33.2
Average EEI according to this proposal									117	116	113	110

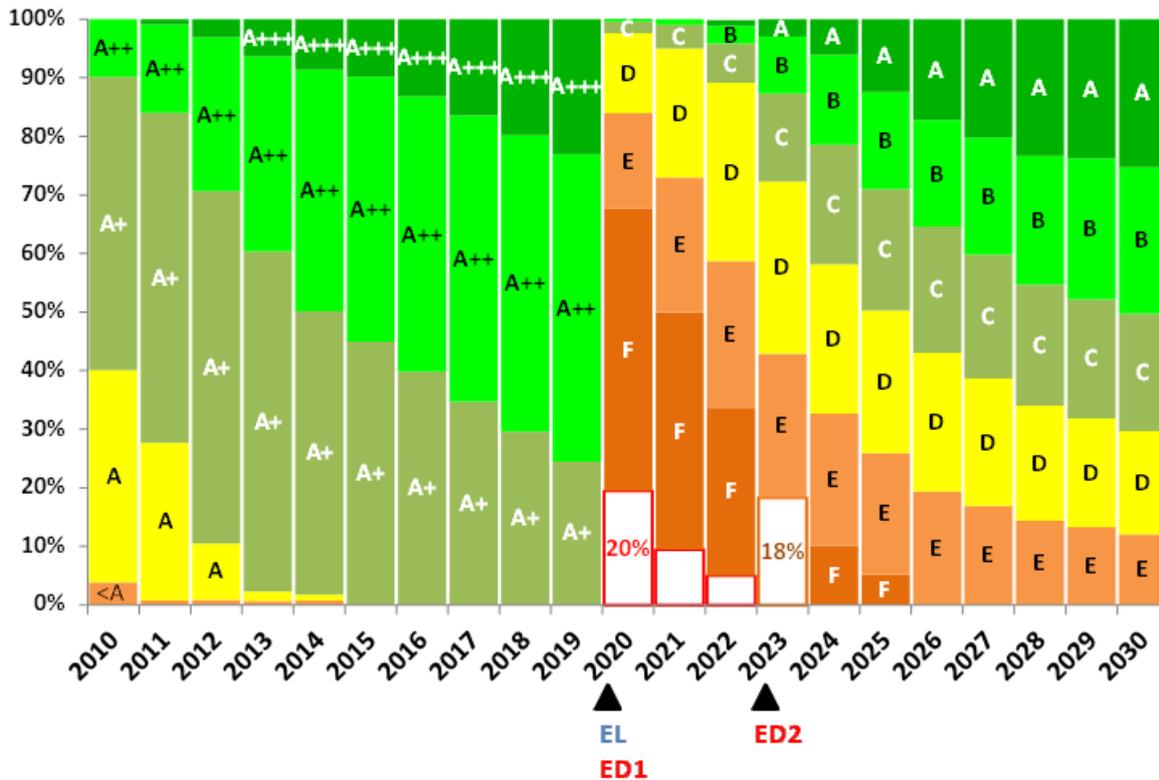
		% of models											
EEI		class	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
EEI according to 643/2009 & 1060/2010	EEI < 22	A+++											
	22 < EEI < 33	A++											
	44 < EEI < 55	A+											
	55 < EEI < 75	A											
	EEI ≥ 75	<A											
EEI according to this regulation	EEI ≤ 41	A			1.0%	2.0%	6.1%	12.4%	17.2%	20.2%	23.4%	23.8%	25.3%
	41 < EEI ≤ 51	B	0.4%	1.0%	3.0%	9.7%	15.3%	16.6%	18.3%	20.0%	22.0%	24.0%	25.0%
	51 < EEI ≤ 64	C	2.0%	4.0%	6.8%	15.0%	20.4%	20.7%	21.5%	21.2%	20.6%	20.4%	20.1%
	61 < EEI ≤ 80	D	23.0%	27.0%	30.4%	32.0%	25.5%	24.4%	23.7%	21.7%	19.6%	18.6%	17.6%
	80 < EEI ≤ 100	E	15.0%	18.0%	25.0%	23.0%	22.4%	20.7%	19.4%	16.9%	14.4%	13.2%	12.1%
	100 < EEI ≤ 125	F	40.0%	40.4%	28.7%	18.3%	10.2%	5.2%					
	EEI > 130	G	19.5%	10.0%	5.0%								
Average EEI according to 643/2009 & 1060/2010			24.4	26.8	26.5	18.8	19.5	19.7	20.1	19.5	18.9	18.6	18.3
Average EEI according to this proposal			81	89	88	63	65	66	67	65	63	62	61

Following to this Table, a maximum EEI of 125 in 2020, would ban 20% of the models from the market in 2020; a maximum EEI of 100 in 2023, would ban 18% of the models from the market in 2023.

This is represented graphically in Figure 2.

EU Energy labelling & no. of models available

(total ca. 13 500 refrigeration models available, period 2010-2030)



3. LEGAL ELEMENTS OF THE DELEGATED ACT

Summary of the proposed action

1. Definition of the scope and updated definitions

The scope of the measures is standard electric (230V) household refrigerating appliances with a volume up to 1500 l, placed in the homes of EU citizens and based on compressor technology.

The current review tries to find solutions for the following ambiguities in the scope:

- whether refrigerating appliances intended for non-household use that are equivalent to refrigerating appliances intended for household use are in the scope of the Regulation or not. This leads to the potential placing on the market of inefficient products by allowing them to be indicated as intended for use in a non-household environment thus escaping the minimum efficiency requirements;
- Whether refrigerating appliances using technologies other than those making use of a compressor (such as absorption, thermo-electric and possibly future innovations such as magnetic cooling or thermo-acoustics) and as a result have lower energy performances, but which have unique functional characteristics in terms of e.g. low noise or mobility. Current requirements could ban some of these products with unique functionalities from the European market.
- Possible overlap with related existing or planned Energy labelling regulations that were not considered when Regulation (EC) 643/2009 was adopted.

The review proposal tries to limit these ambiguities as much as possible, defining first the large functional and technology-neutral categories and expanding on what is in the scope and what is not.

In the scope are refrigerating appliances intended for household use and refrigerating appliances equivalent to those intended for household use, used in non-household environments; and low noise refrigerating appliances that have added functionality and thus different Ecodesign limits. Nonetheless, the same energy label and scale will be used, as to inform consumers about their lower energy performance.

The low-noise appliances, currently using absorption and thermo-electric ('Peltier') technology, include most mini-bars in hotel (bed) rooms. They are defined as refrigerating appliances up to a volume of 60 litres and a noise level of no more than 20 dB(A). The performance will be that of a single cellar (+12°C) or pantry (+17°C) compartment.

Distinguishing features of products in the scope include mass-produced, thermally insulated cabinets with a fully integrated and factory-sealed cooling circuit, including one or more cold generators. In other words, custom-made cabinets or cabinets with remote condensing unit or cooled by remote process chillers are excluded.

Out of the scope are commercial refrigerating, professional refrigerating and mobile refrigerating appliances.

Commercial refrigerating appliances, for which a draft Working Document was presented to the Consultation Forum, are characterised by refrigerated display of products for sale ('merchandise'). The display function means transparent doors or open access for one or more sides of the appliance. For instance, wine storage appliances or hotel mini-bars with a display functionality can thus rightfully claim to be 'commercial' and thus out of the scope of the 'household' requirements. This avoids loopholes, e.g. where wine storage appliances with a glass door in restaurants show large similarities with vertical display cabinets in the retail sector. It keeps the display functionality in the market place where it really matters, i.e. in the commercial sector.

Regulation (EU) 2015/1095 on professional refrigerating appliances, defines 'professional' as a rest group (non-household and non-commercial).

'Mobile' appliances are designed for use in means of transport (cars, mobile homes, boats, etc.), where there may be no access to the main electric grid and thus have to use battery-power of the transport vehicle (12 V) or a gas/kerosene tank. They are more resistant to mechanical vibration and shocks as well as operation in a tilted position.

2. Measurements and calculations

The metrics of the Ecodesign and Energy Labelling regulations for household refrigerating appliances is in need for a number of compelling reasons regarding globalisation, technological progress and transparency.

Globalisation

Over the last years experts the global refrigeration industry have been working to create a global standard for household refrigerating appliances. This global standard, IEC 62552:2015, was published in 2015 and will be used in MEPS (Minimum Energy efficiency Performance Standards, like the minimum efficiency requirements in Ecodesign) and Energy Labelling in Australia, Japan, China and –in due time—also North America. It aims not only to be universally applicable, using local variables but always in a globally harmonised context, but also to improve the efficiency (faster, lower costs), accuracy (more sophisticated defrost testing) and reliability (fighting loopholes, precise indications of relevant testing) of

refrigerating appliance testing. Using this standard, adapted to the EU situation, in Ecodesign and Energy Labelling is thus crucial for global competitiveness but also for better market surveillance and lowering the administrative burden for industry. Most of the definitions in the proposed regulation stem from this new global standard. As regards quantitative test- and calculation methods the annotated version gives the details. Most important changes are:

- Energy testing at two ambient temperature conditions, 16 and 32 degrees, taking the average (24 °C) as a reference. This gives a better impression of real-life performance instead of design-optimisation for the current single ambient temperature testing at 25 °C. The new 24 °C reference was found to be yield results closest to the current practice.
- Fresh food compartment temperature is now +4 °C, instead of +5 °C, because it is better for food preservation. This leads to an increase in energy consumption for fresh food compartments (+11.9%).
- Freezer temperature (-18oC for 3- and 4 star) is established by measuring the air temperature, i.e. longer measured inside test-packages. This is faster, but will lead to a decrease (-6%) in energy consumption for these compartments due to the temperature difference inside and outside the packages. For an upright freezer the increase will be -1.8% with auto-defrost and -4.7% without auto-defrost. For a chest freezer the decrease will be -6%.
- Combining the above two points for a typical refrigerator-freezer the increase in energy consumption will 12.7% for a single thermostat design ('Type I') and 3.6% with auto-defrost or 1.6% without auto-defrost for a combi with two thermostats ('Type II').
- The standard sets target temperature for testing chill compartments is no longer 0 °C but at 2 °C. Note that, because the N and M factors are more favourable for chill than for fresh food compartments, this opens the possibility of loopholes and thus in the regulation and/or harmonised standard the chill compartment will have to comply with very strict performance requirements.
- Testing is no longer based on fixed 24 hour period (or more), but testing continues until well-defined steady state conditions are achieved.
- The energy consumption for defrosting (including recovery to set temperature) is measured separately, and will be added ex-post to steady state energy consumption as appropriate. It is no longer integrated in the 24 h test, thus also allowing more accurate monitoring. Testing now accommodates several types of defrosting control mechanisms.
- Test institutes involved in compliance testing are explicitly obliged to investigate anomalies that might be caused by attempts to circumvention and report circumvention to the market surveillance authorities. This stipulation is important in the light of the fact that, following widespread privatisation of test institutes in the EU over the last decades, almost all test institutes also work for the industry.

Technological progress

The metrics in the current (and preceding) regulations for Ecodesign and Energy Labelling of household refrigerating appliances were developed 25 years ago, using parameters (the N, M and correction factors) that were derived from an analysis of the trends in a commercial database from the early 1990s. Since then there has been considerable technological progress, which is not (no longer) reflected in today's metrics for efficiency levels that are >60% lower

than 25 years ago. For instance, the reference line for refrigerators is almost flat, whereas –at the same index—the requirements for fridge/freezer combis are more lenient than for freezers. Furthermore, the appliance-based approach is complex in the legislation and unnecessarily rigid. In order to correct for these issues a more balanced and more flexible metric is proposed, mainly based on physics rather than only commercial trends. The proposed approach is primarily compartment-based, allowing maximum freedom of design. The 10 different appliance categories have been eliminated; what remains of the current appliance categorisation is a variable ‘combi-factor’ at a default value of 1.15 if more than one compartment type is used and a variable value between 1.3 and 1.56 for fridge freezers.

Transparency

For many years, NGOs and Member States have asked for the elimination or at least drastic reduction of the correction factors for climate-class (1.1 for sub-tropical ST and 1.2 for tropical T), no frost (1.2), built-in appliances (1.2) and the bonus for the chill compartment (50 kWh at EEI=100). Some of these factors are used as (legal) loopholes, e.g. leading to Sweden reportedly having more ‘tropical’ refrigerators than countries like Spain, and are anyway clouding the real electricity consumption and efficiency for the end-consumer. In this proposal the climate-class factor has been completely eliminated and the other correction-factors have been more than halved: 1.1 for no-frost, 1.1 (freezer) or 1.04 (fresh food) for built-in. The compensation for chill factors, which for the most common compartment sizes is anyway much lower than today, has been incorporated in the N and M factors.

Having said that, a new correction factor of 0.9 (negative impact) has been introduced for freezers to take more into account the effect of introducing and freezing the warm load in real-life. For refrigerators and combis this effect, and the effect of door-openings, this is implicitly compensated by testing at a 24 °C ambient temperature, instead of at the real-life temperature of 20 °C. Also freezers are tested at 24 °C ambient temperature, but according to a recent study by Stiftung Warentest, at the currently high efficiency levels of the freezers this is no longer enough to compensate for the real impact. This will especially be the case for freezers used in professional environments (also in the scope of this regulation) and households in rural areas.

Furthermore, a small multi-door correction has been introduced for appliances with 3, 4 or more external doors with correction factors 1.02, 1.035, 1.05 respectively. Multi-door appliances have inherently more heat losses, in the door gasket area, than single or double door appliances of the same size. As a result the energy efficiency rating for the Energy Label is lower and there is no incentive for industry to go down that route. Currently, only about 15% of models offer the possibility to store food (also) at a different temperature than 4 °C. And of these 15% which offer a combi with also a chill compartment (0 °C) probably most are actually sub-compartments that share the external door with the fresh food compartment. Although in a controlled test environment such sub-compartments may pass the performance test, in real life such a chill sub-compartment solution is complex in terms of avoiding heat exchange with the fresh food compartment and in terms of accurate temperature control. This is also true for cellar compartments (8-14 °C, reference 12 °C), which are hardly used in the current market. Chill and cellar compartments represent important storage conditions for much perishable foodstuff, leading to an extension of shelf-life with a factor 2 or 3 with respect to storage at fresh-food conditions (see Circular Economy paragraph hereafter). Furthermore, the higher-than-fresh-food temperature of a cellar compartment offers additional saving options by not only displacing part of the fresh food compartment volume but also through possible use for cold air recovery from e.g. defrosting.

The most controversial correction factor in the proposal is the one for glass doors in wine storage compartments. Wine storage compartments with closed insulated doors can be handled just as normal refrigerators, but a glass door means a significant increase in energy consumption. For Energy Labelling, where wine storage compartments are already in the scope, this poses no problems: The appliance would simply be in the lowest class ('G'). But now the review clause requires that wine storage compartments are also included in Ecodesign measures. And in any overall Ecodesign limit that makes sense for all other appliances, the wine storage compartments/-appliances would be banned from the market. In the current proposal, glass door refrigerating appliances are out of the scope, they will be taken up in the Ecodesign measure for commercial refrigerating cabinets which is intended to be published at the same time. There was a proposal for a value of 1.2 for the wine storage glass door correction factor. But industry thinks it is too little and green NGOs think there should be no glass door correction factor at all. Member States and consumer associations have so far not expressed themselves clearly on the issue and thus the Consultation Forum will be crucial in determining the way forward.

Conversion

It is impossible to make a simple calculation to convert the current metrics to the newly proposed metrics. But, as a significant part of the previous analysis --e.g. on the LLCC and others-- starts from the current Energy Efficiency Index (EEI) it is important for policy makers to get an understanding of the implications in terms of the newly proposed EEI.

For that purpose a stochastic conversion was made on the basis of the models in the most recent (2016) CECED database. The table below shows how the rounded current EEI values (first column) in that database translate into the average, minimum, maximum and standard deviation values according to the new index. This is done for the three main categories in the data-base: refrigerators (Cat. 1), refrigerator-freezer combis (Cat. 7) and the upright freezers (Cat. 8).

Table 2

Conversion from current to newly proposed EEI

(source: analysis based on 2016 CECED database)

Category--> EEI now	1. Fridge				7. Combi				8. Upright freezer				Model count (total 12493)														
	Avg	Min	Max	Stdev	Avg	Min	Max	Stdev	Avg	Min	Max	Stdev	1	7	8												
42 A+	140	<i>130</i>	<i>150</i>	<i>1.8%</i>	143	<i>123</i>	<i>177</i>	<i>7.2%</i>	130	<i>92</i>	<i>147</i>	<i>7.5%</i>	642	3243	589												
41	141	<i>133</i>	<i>143</i>		135	<i>133</i>	<i>159</i>		117	<i>100</i>	<i>125</i>		20	116	10												
40	132	<i>132</i>	<i>132</i>		134	<i>120</i>	<i>143</i>		123	<i>111</i>	<i>123</i>		2	144	1												
39		<i>128</i>			129	<i>117</i>	<i>144</i>		<i>119</i>				0	52	0												
38		<i>125</i>			130	<i>119</i>	<i>133</i>		116	<i>82</i>	<i>107</i>		0	51	2												
37		<i>121</i>			134	<i>131</i>	<i>138</i>		<i>113</i>				0	38	0												
36		<i>117</i>			129	<i>128</i>	<i>130</i>		<i>111</i>				0	16	0												
35		<i>113</i>			120	<i>111</i>	<i>128</i>		<i>109</i>				0	34	0												
34 A++	110	<i>110</i>	<i>110</i>		120	<i>120</i>	<i>120</i>		<i>108</i>				1	14	0												
33	109	<i>105</i>	<i>115</i>	<i>1.6%</i>	113	<i>89</i>	<i>139</i>	<i>7.0%</i>	107	<i>75</i>	<i>118</i>	<i>7.0%</i>	848	4564	311												
32	108	<i>106</i>	<i>109</i>		113	<i>95</i>	<i>138</i>		100	<i>86</i>	<i>105</i>		9	58	6												
31		<i>104</i>			111	<i>92</i>	<i>114</i>		82	<i>74</i>	<i>82</i>		0	17	1												
30		<i>100</i>			95	<i>92</i>	<i>113</i>		<i>98</i>				0	35	0												
29	95	<i>95</i>	<i>95</i>		107	<i>107</i>	<i>107</i>		<i>94</i>				1	1	0												
28		<i>92</i>			<i>104</i>				<i>91</i>				0	0	0												
27		<i>89</i>			<i>100</i>				<i>88</i>				0	0	0												
26		<i>85</i>			<i>96</i>				<i>84</i>				0	0	0												
25		<i>81</i>			<i>92</i>				<i>81</i>				0	0	0												
24		<i>79</i>			<i>88</i>				<i>79</i>				0	0	0												
23		<i>75</i>			76	<i>74</i>	<i>76</i>		<i>77</i>				0	5	0												
22 A+++	72	<i>72</i>	<i>77</i>	<i>1.5%</i>	74	<i>65</i>	<i>92</i>	<i>7.8%</i>	73	<i>56</i>	<i>78</i>	<i>5.9%</i>	106	1454	54												
21		<i>69</i>			71	<i>69</i>	<i>75</i>		66				0	18	0												
20		<i>65</i>			65	<i>61</i>	<i>71</i>		58	<i>52</i>	<i>58</i>		0	8	1												
19		<i>61</i>			64	<i>60</i>	<i>68</i>		<i>54</i>				0	2	0												
18		57	<i>57</i>	<i>57</i>	56	<i>55</i>	<i>58</i>		<i>51</i>				1	18	0												
17		<i>54</i>			<i>52</i>				<i>48</i>				0	0	0												
weighted average													total														
New EEI	119	<i>113</i>	<i>126</i>	<i>1.6%</i>	118	<i>98</i>	<i>144</i>	<i>7.2%</i>	107	<i>84.3</i>	<i>133</i>	<i>7.3%</i>	1630	9888	975												
EEI now (2016)	35.9													34.5													37.8

Average values in small italic font are interpolations estimated from available values.

3. Energy labelling requirements

We propose a progressive, rather than a fixed class width. Taking into account the Stage 2 Ecodesign limit at the class limit between E and F (EEI=100), a BAT level between B and C of around EEI=48 to 54, we come to a progression of 20%. This means that every higher labelling class means that the appliances will become 20% more efficient.

Table 2. Proposed lower class limits for EU Energy Label (implementation April 2020)

A	B	C	D	E	F	G
≤41	≤51	≤64	≤80	≤100	≤125	>125

For wine storage appliances (current category COLD2)

As of the introduction of the label in April 2020 the G-class for standard appliances will be phased out at implementation. However, the G-class will still be populated with low-noise and wine storage appliances. In April 2023 the F-class will be phased out for standard appliances.

The graphs at the end of this memorandum illustrate the classification against a backdrop of the distribution in the 2016 CECED database.

DRAFT

COMMISSION DELEGATED REGULATION (EU) .../...

of XXX

supplementing Regulation (EU) 2017/1369 of the European Parliament and of the Council with regard to energy labelling of household refrigerating appliances and low noise refrigerating appliances

**repealing
Regulation (EU) No 1060/2010 with regard to energy labelling of household refrigerating appliances**

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to 2017/1369 of the European Parliament and of the Council of 28 July 2017 setting a framework for energy labelling¹² repealing Directive 2010/30/EU, and in particular Articles 11 and 16 thereof,

Whereas:

- (1) Regulation 2017/1369 empowers the Commission to adopt delegated acts as regards the labelling or rescaling of the labelling of product groups representing significant potential for energy savings and, where relevant, other resources.
- (2) Provisions on the energy labelling of household refrigerating appliances were established by Commission Delegated Regulation (EU) No. 1060/2010 of 28 September 2010 supplementing Directive 2010/30/EU¹³.
- (3) Household refrigerating appliances are among the product groups mentioned in Article 11(5)(b) of Regulation (EU) 2017/1369 for which the Commission should adopt a delegated act introducing an A to G rescaled label.
- (4) Regulation (EU) 1060/2010 contains a review clause in Article 7 requiring the Commission to review the regulation in light of technological progress.
- (5) The Commission has reviewed Regulation (EU) 1060/2010 and analysed technical, environmental and economic aspects of household refrigerating appliances as well as real-life user behaviour. The review was undertaken in close cooperation with stakeholders and interested parties from the Union and third countries. The results of the review were made public and presented to the Consultation Forum established by Article 14 of Regulation (EU) 2017/1369.

¹² OJ L 198, 28.07.2017, p. 1.

¹³ OJ L 314, 30.11.2010, p. 17

- (6) The review concluded that there was a need for the introduction of revised energy labelling requirements for household refrigerating appliances and low noise refrigerating appliances.
- (7) The environmental aspect of refrigerating appliances and low noise refrigerating appliances, identified as significant for the purposes of this Regulation, is energy consumption in the use phase.
- (8) The electricity used by household refrigerating appliances accounts for a significant share of total household electricity demand in the Union. In addition to the energy efficiency improvements already achieved, the scope for further reducing the energy consumption of household refrigerating appliances is substantial.
- (9) There is an opportunity for energy savings for products in the market of low noise refrigerating appliances. Those appliances should therefore be included in the scope of this Regulation.
- (10) Low-noise refrigerating appliances represent a unique functionality as regards low noise, but consume significantly more energy than other refrigerating appliances. In order for end-users to make an informed decision, information on airborne acoustical noise emissions of household refrigerating appliances should be included on the label.
- (11) Some refrigerating appliances used in non-household environments are equivalent to refrigerating appliances and should therefore be in scope of this Regulation. As an example, a professional chest freezer which is equivalent to a household chest freezer and is intended for professional use shall be in the scope of the regulation.
- (12) The combined effect of the provisions set out in this Regulation and Commission Regulation 643/2009 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for household refrigerating appliances¹⁴, could amount to additional annual electricity savings of 10 TWh by 2030, compared to the situation if no measures were taken.
- (13) The measures provided for in this Regulation were discussed by the Consultation Forum and the Member States' experts in accordance with Article 14 and 18 Article 18 of Regulation (EU) 2017/1369.
- (14) Commission Delegated Regulation (EU) No. 1060/2010 should be repealed and new provisions should be laid down by this Regulation.

HAS ADOPTED THIS REGULATION:

Article 1

Subject matter and scope

1. This Regulation establishes requirements for the labelling of, and the provision of supplementary product information on:
 - (a) electric mains-operated household refrigerating appliances with a volume between 10 and 1500 litres;
 - (b) electric mains-operated low-noise refrigerating appliances with a volume between 10 and 60 litres.

¹⁴ OJ L 191, 23.07.2009, p 53

2. This Regulation shall not apply to:
 - (a) products covered by Commission Regulation (EU) 2015/1095 with regard to ecodesign requirements for professional refrigerated storage cabinets, blast cabinets, condensing units and process chillers;
 - (b) commercial refrigerating appliances;
 - (c) mobile refrigerating appliances.

Article 2

Definitions

In addition to the definitions set out in Article 2 of Regulation (EU) 2017/1369 and the definitions set out in Annex I of this Regulation, the following definitions shall apply for the purposes of this Regulation:

1. 'household refrigerating appliance' means a refrigerating appliance, integrating the condenser and cold generator in one package with a factory-sealed cooling circuit used in household environments. This also includes equivalent refrigerating appliances used in non-household environments such as professional chest freezers;
2. 'refrigerating appliance' means an insulated cabinet with one or more compartments that are controlled at specific temperatures below the ambient temperature;
3. 'low noise refrigerating appliance' is a refrigerating appliance, with noise power emission lower than 20 dB(A);
4. 'mains' or 'electric mains' means the electricity supply from the grid of 230 ($\pm 10\%$) Volt of alternating current at 50 Hz;
5. 'volume' means the volume of the space within the inside liner of the refrigerating appliance;
6. 'commercial refrigerating appliances' means refrigerating appliances used in non-household environments with a display- and/or payment-function to facilitate the selection and purchase of the refrigerated items. This category includes wine storage appliances and low noise refrigerating appliances with display-function;
7. 'mobile refrigerating appliances' means refrigerating appliances used in vehicles and/or any other means of ~~transportation~~ [transportation](#) where there is no access to the mains electricity grid, that can operate reliably and safely when exposed to mechanical vibrations and a tilted position as well as use extra low-voltage electricity (<120V DC) and/or fossil fuel as the energy source for the refrigeration functionality;
8. 'wine storage appliance' means a dedicated appliance for the storage of wine, with precision temperature control as defined Annex IV, Table 3, and equipped with anti-vibration technology;
9. 'energy efficiency index' (EEI) means an index number for the relative energy efficiency performance of a refrigeration appliance expressed in %, as calculated in Annex IV.B;
10. 'annual energy consumption' (AE) means the average daily energy consumption multiplied with 365 (days per year) expressed in kWh, as calculated in Annex IV.B;

11. 'compartment' means an enclosed space within a refrigerating appliance, which is directly accessible through one or more external doors and which may itself be divided into sub-compartments having a different operating temperature range from the compartment within which it is located. For the purpose of this regulation, unless specified otherwise, 'compartment' refers to both compartments and/or sub-compartments;
12. 'frozen compartments' means the group of compartment types with a target temperature equal to or below 0°C, as set out in Annex IV, Table 3;
13. 'chill compartment' is a compartment type with performance requirements with a target temperature equal to 2°C, as set out in Annex IV, Table 3;
14. 'unfrozen compartments' means the group of compartment types with a target temperature equal to or above 4°C, as set out in Annex IV, Table 3;
15. 'cold generator' means the part of a refrigerating appliance that generates a temperature difference allowing heat to be extracted from inside the cabinet and transferred to the ambient air;
16. 'equivalent refrigerating appliance' means a model placed on the market with the same total and compartment volumes, same technical, efficiency and performance characteristics, and same compartment types as a household refrigerating appliance model placed on the market under a different commercial code number by the same manufacturer;
17. 'display-function' means a functionality of a refrigerating appliance to see its content, either by one or more transparent doors or by open access to at least one side of the appliance;
18. 'payment-function' means a functionality allowing customers to pay for and acquire merchandise that is stored inside the refrigerating appliance;
19. 'external door' is the part of a cabinet that can be opened, moved or removed to at least be able to insert the load from the exterior to the interior and extract the load from the interior to the exterior of the cabinet;
20. 'compartment type' means the declared compartment type in accordance with the parameters as set out in Annex IV, Table 3;
21. 'target temperature' (T_c) means the reference temperature inside a compartment c during testing as set out in Annex IV, Table 3, and relates to the maximum temperature for testing energy consumption and is the average over time and over a set of sensors;
22. 'compartment volume' means the volume of the space within the inside liner of the compartment;
23. 'c' means the index number suffix for a compartment type in an appliance.

Article 3

Obligations of the suppliers

~~From 01 April 2020~~ In addition to the obligations of suppliers laid down in Regulation (EU) 2017/1369

1. ~~From 01 April 2020~~, suppliers shall ensure that:

- (a) each household refrigerating appliance, except for wine storage appliances, is supplied with a printed label in the format as set out in point 1.1 of Annex II;
 - (b) each wine storage appliance and each low noise refrigerating appliance is supplied with a printed label in the format as set out in point 1.2 of Annex II;
 - (c) the parameters of the product information sheet, as set out in Annex V, are entered into the product database;
 - (d) if requested by the dealer, the product information sheet shall be made available in printed form;
 - (e) the content of the technical documentation uploaded into the product database shall be according to Annex VI;
 - (f) any visual advertisement for a specific model of household refrigerating appliance or low noise refrigerating appliance, including on the internet, contains the energy efficiency class and the range of efficiency classes available on the label, in accordance with Annex X;
 - (g) any technical promotional material concerning a specific model of household refrigerating appliance or low noise refrigerating appliance, including on the internet, which describes its specific technical parameters includes the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex X;
 - (h) an electronic label in the format and containing the information as set out in point 1.1 of Annex II for each household refrigerating appliance, except for wine storage appliances, and point 1.2 of Annex II for each wine storage appliance and each low noise appliance shall be made available to dealers on request;
 - (i) an electronic product information sheet as set out in Annex V shall be made available to dealers for each household refrigerating appliance or low noise refrigerating appliance;
 - (j) products are not placed on the market products that have been designed so that a model's performance is automatically altered in test conditions with the objective of reaching a more favourable level for any of the parameters specified in the relevant delegated act or included in the documentation provided with the product.
2. From 01 April 2023, suppliers shall ensure that:
- (a) each household refrigerating appliance, except for wine storage appliances, is supplied with a printed label and an electronic label shall be made available in the format as set out in point 2 of Annex II. Article 4.
 - (b) an electronic label in the format and containing the information as set out in point 2 of Annex II for each household refrigerating appliance, except for wine storage appliances, shall be made available to dealers;

3. The energy efficiency class shall be based on the Energy Efficiency Index in accordance with Annex II.

Obligations of dealers

In addition to the obligations of dealers laid down in Regulation (EU) 2017/1369, dealers shall ensure that:

- (a) each household refrigerating appliance and each low noise refrigerating appliance, at the point of sale, bears the label provided by suppliers in accordance with Article 3(a) displayed on the outside of the front or top of the household refrigerating appliance or low noise refrigerating appliance, in such a way as to be clearly visible;
- (b) the label and product information sheet are provided in case of distance selling in accordance with Annexes VII and VIII;
- (c) any visual advertisement for a specific model of household refrigerating appliance or low noise refrigerating appliance contains the energy efficiency class and the range of efficiency classes available on the label in accordance with Annex X;
- (d) any technical promotional material concerning a specific model of household refrigerating appliance or low noise refrigerating appliance, including on the internet, which describes its specific technical parameters includes the energy efficiency class of that model and the range of efficiency classes available on the label, in accordance with Annex X.

Article 5

Measurement methods

The information to be provided pursuant to Articles 3 and 4 shall be obtained by reliable, accurate and reproducible measurement and calculation methods, which take into account the recognised state-of-the-art measurement and calculation methods, as set out in Annex IV.

Article 6

Verification procedure for market surveillance purposes

Member States shall apply the procedure laid down in Annex IX when assessing the conformity of the declared energy efficiency class, the annual energy consumption, the sum of the volumes of the frozen compartments, the sum of the volumes of the chill compartments and the sum of the volumes of the unfrozen compartments and the airborne acoustic noise emissions.

Article 7

Revision

The Commission shall review this Regulation in the light of technological progress and present the results of this review to the Consultation Forum no later than five years after its entry into force. The review shall in particular assess the possibility to introduce requirements on circular economy.

In addition, the Commission shall review the label to rescale it when the requirements in Article 11 of Regulation (EU) 2017/1369 are met.

Article 8

Repeal

Commission Delegated Regulation (EU) No. 1060/2010 is repealed as from 31 March 2020.

Article 9

Entry into force and application

1. This Regulation shall enter into force on the 20th day following its publication in the official Journal of the European Union.
2. It shall apply from 01 April 2020.
3. The obligation in Article 3(1)(a) and (b) shall apply 4 months before 01 April 2020.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels,

For the Commission
Jean-Claude JUNCKER
The President