April 2015

Joint Industry Position Paper

Draft Regulation - Review Commission Regulation (EU) No. 327/2011 (fans)

EXECUTIVE SUMMARY

CECED, DIGITALEUROPE, EPEE, JBCE and JRAIA, welcome the review of Regulation No. 327/2011. However, we would like to raise additional concerns with regards to several points presented in the draft Regulation that was published in advance of the Consultation Forum meeting on 30 April.

In line with the previous EPEE and joint industry position papers (from October & November 2014 and February 2015) on the review of the fan regulation and spare parts, the comments below will specifically address the following additional points:

1. Double regulation is counter-productive
2. Spare parts need to be completely exempted
3. Threshold for forward curved fans should not be lowered
4. The definition of best efficiency point is acceptable
5. Some information requirements are obsolete

1. Double regulation is counter-productive

CECED, DIGITALEUROPE, EPEE, JBCE and JRAIA remain seriously concerned about the development of double regulation which puts at risk the principle of technology neutrality which has so far been one of the key pillars of success of Ecodesign and one of the main reasons why industry has lend its support to this framework since its introduction. **Technology neutrality leaves the necessary freedom to manufacturers to innovate and to develop the most efficient solutions while ensuring cost-effectiveness which is crucial for the purchasing decisions of professional customers and consumers.**

In addition, a lot of resources have been spent on upgrading and re-designing of existing products to ensure they are compliant with the various Ecodesign and F-gas Regulation and hence they are missing for the development of further product innovations that are required due to new requirements on components. The complexity of re-design options can also be found in Annex I below.

Regulating components to be incorporated into already regulated products, represents a serious challenge to the entire concept of Ecodesign. **Clearly, the small *potential* gain in energy efficiency by prescribing the use of highly efficient components is not worth due to the significant associated risks, such as:**

- The additional complication of market surveillance and enforcement, which has in any case already been identified as the 'weak link' of the Ecodesign and Energy Labelling Framework.
- The disproportionate burden for SMEs which may not be able to cope with these additional important constraints;
- The significant cost increase which will push **professional customers and consumers** to buy less costly and hence less efficient products, putting at risk the achievable gains in energy consumption;

In addition to these risks, **we emphasize that the small gain in energy efficiency cannot even be guaranteed whilst** the energy consumption of major components (e.g. compressors, fans, motors etc.) is already accounted for in the calculation of the energy efficiency of the system (e.g. air conditioner, refrigeration product etc.).

Examples clearly show that overall product efficiency is complex, depending on a number of factors and technical features. Product designers are constantly faced with enormous pressure to choose the most efficient combination of design options to reach the overall product MEPS at the LLCC, so that the end price of the product remains competitive and affordable to the consumer.

Example 1: A condensing unit with a non-compliant fan achieves an overall efficiency increase by 11% in SEPR, compared to the same condensing unit using a compliant fan. The non-compliant fan has a higher air flow and in terms of efficiency is optimised for the real pressure drop across the condenser, resulting in less work of the compressor (lower condensing temperature) and therefore overall higher efficiency. Indeed, the compressor consumes about 90% of the total power and the fan only about 10%. On the contrary, an improvement of 10% of the refrigerant cycle for example, which includes inter alia an optimization of heat exchanger and compressor efficiency, leads to close to 10% of improvement in the entire unit, i.e. almost 10 times more than the fan. This demonstrates that only the most reasonable fan-condenser assembly with a proper match of the compressor results in higher performance.
(see Annex 2).

Example 2: In the case of an air conditioner/heat pump the situation is similar, and, even with 10% efficiency improvement of the fan's efficiency, only 1% efficiency improvement in the air conditioner/heat pump can be achieved (please see Annex 3 below) as the power consumption of fans is relatively low compared to that of other components in the final product

Given the European Commission's strong political will for **'better regulation'** and the success and benefits of the Ecodesign approach, which is based on technical neutrality, **EPEE calls upon the European Commission and Member States to avoid double regulation.**

Components (such as fans, motors, etc.) which are already or will soon be indirectly regulated by integrated equipment measures need to be excluded from the scope of specific Ecodesign requirements.

In this context, we appreciate the proposal of the Commission to exclude fans integrated in some appliances already covered by ecodesign requirements, such as hobs, vacuum cleaners, dryers and washer-dryers.

2. Spare parts to be exempted according to 'repair as produced' principle

We call again upon the European Commission to apply the **'repair as produced principle'** (as applied in the RoHS1 and ELV2 Directives) instead of limiting the exemption to a fixed number of years.

One possible solution to address the concerns of creating loopholes is clearly indicating what the spare parts will be used for. This would differentiate spare parts from other fans.
The availability of spare parts brings significant environmental benefits, as it guarantees longer product lifetimes and prevents waste generation, which is one of the core elements of the EU's resource efficiency policy and the EU waste hierarchy. It is also crucial that spare parts are available for maintenance, repair, refurbishment and remanufacturing so that such activities remain cost-effective, viable and overall sustainable.

To substantiate the above points, consider for instance the example given in Annex IV. Here, the average ratio of (number of spare parts per year)/(total number running in the market) is 0.15% and assuming an efficiency improvement with compliant spare parts of 10%, the result would still only be 0.015% reduction of the power consumption.

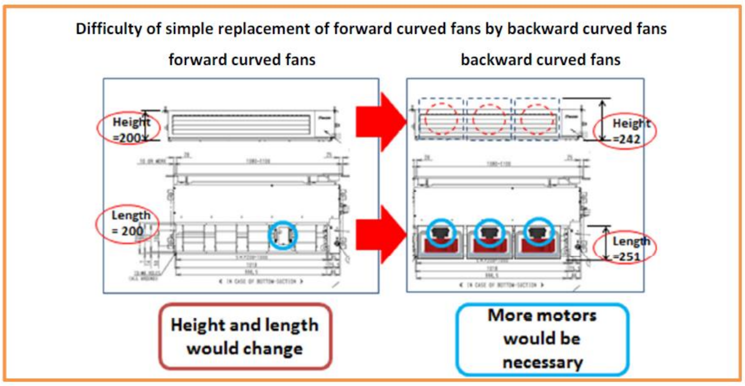
3. Threshold for forward curved fans should not be lowered

Forward curved fans cannot simply be replaced by backward curved fans as this would impact the size of the units resulting in a ban of certain product and technology types (e.g. slim duct units) and in an increase of the noise. As a result, customers would be deprived of currently available technical solutions such as concealed products.

We therefore agree with the suggested approach to keep forward curved fans and radial fans limits up to 5 kW and that all centrifugal fans above 5 kW have the same minimum requirements.

The value of 5 kW should not be lowered to guarantee technical neutrality as centrifugal fans are essential components delivering a higher amount of air flow than the same sized backward curved fans. As a consequence, there would be a significant impact requiring cost-intensive re-designing if these forward curved fans were to be simply replaced by backward-curved fans as is illustrated below.

[1] Recital 12 of Directive 2002/95/EC, later taken over in Recital 20 of Directive 2011/65/EU: As product reuse, refurbishment and extension of lifetime are beneficial, spare parts need to be available.
[2] Recital 2 of COM Decision 2005/438/EC amending Annex II to Directive 2000/53/EC: As product reuse, refurbishment and extension of lifetime are beneficial, spare parts need to be available for the repair of vehicles which were already put on the market on 1 July 2003.



4. The definition of best efficiency point is acceptable

The current interpretation shall therefore be maintained: We support to maintain the current definition of the best efficiency point. Any changes would require a comprehensive impact assessment to understand the consequences and avoid burden for industry and users.

5. Some information requirements are obsolete

We would like to ask the European Commission to re-consider some of the information requirements, particularly point six described in Annex III on the need for manufacturers to indicate the total weight per fan of the permanent magnets used in the motor.

We believe that this information requirement would be of no added value as they are already fulfilled by complying with other existing legislation, such as WEEE (Art. 15) and hence communicated appropriately to future recyclers.

About CECED:

CECED represents the household appliance manufacturing industry in Europe. Its member companies are mainly based in Europe. Direct Members are Arçelik, Ariston Thermo Group, BSH Bosch und Siemens Hausgeräte GmbH, Candy Group, Daikin Europe, De'Longhi, AB Electrolux, Gorenje, Indesit Company, LG Electronics Europe, Liebherr Hausgeräte, Miele & Cie. GmbH & Co., Philips, Samsung, Groupe SEB, Vestel, Vorwerk and Whirlpool Europe.

CECED's member Associations cover the following countries: Austria, the Baltic countries, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

About DIGITALEUROPE:

DIGITALEUROPE represents the digital technology industry in Europe. Our members include some of the world's largest IT, telecoms and consumer electronics companies and national associations from every part of Europe. DIGITALEUROPE wants European businesses and citizens to benefit fully from digital technologies and for Europe to grow, attract and sustain the world's best digital technology companies.

DIGITALEUROPE ensures industry participation in the development and implementation of EU policies. DIGITALEUROPE's members include 58 corporate members and 36 national trade associations from across Europe. Our website provides further information on our recent news and activities: www.digitaleurope.org

About EPEE:

The European Partnership for Energy and the Environment (EPEE) represents the refrigeration, air-conditioning and heat pump industry in Europe. Founded in the year 2000, EPEE's membership is composed of 40 member companies, national and international associations.

EPEE member companies realize a turnover of over 30 billion Euros, employ more than 200,000 people in Europe and also create indirect employment through a vast network of small and medium-sized enterprises such as contractors who install, service and maintain equipment.

EPEE member companies have manufacturing sites and research and development facilities across the EU, which innovate for the global market.

As an expert association, EPEE is supporting safe, environmentally and economically viable technologies with the objective of promoting a better understanding of the sector in the EU and contributing to the development of effective European policies. Please see our website (www.epeeglobal.org) for further information.

About JBCE:

Created in 1999, the Japan Business Council in Europe (JBCE) is a leading European organisation representing the interests of almost 70 multinational companies of Japanese parentage active in Europe. Our members operate across a wide range of sectors, including information and communication technology, electronics, chemicals, automotive, machinery, wholesale trade, precision instruments, pharmaceutical, railway, textiles and glass products. Together, our member companies represented in 2013 global sales of 1.4 trillion euros.

Building a new era of cooperation between the European Union (EU) and Japan is the core of our activities. www.jbce.org

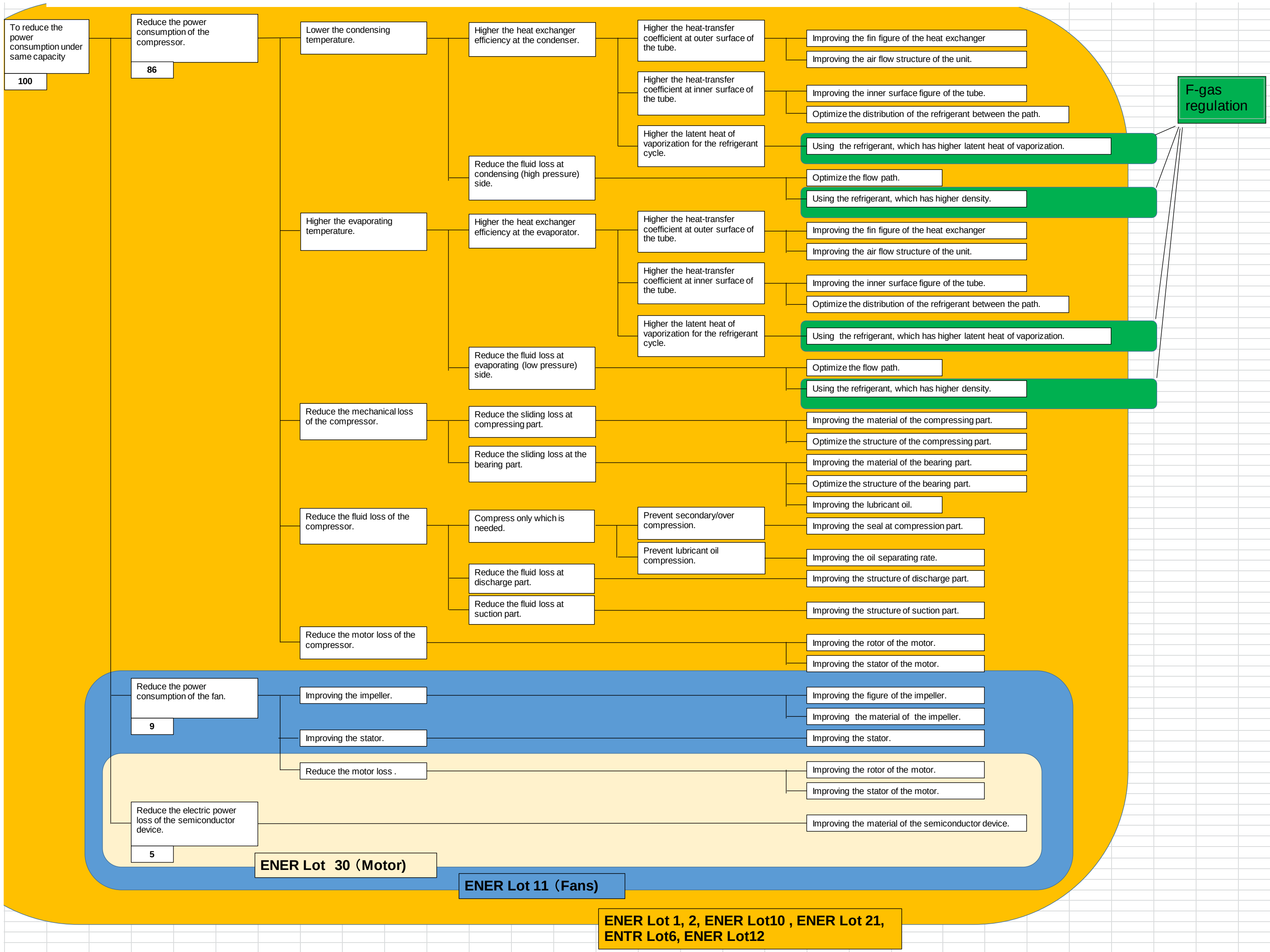
About JRAIA:

JRAIA, the Japan Refrigeration and Air Conditioning Industry Association, was originally established in February 1949 as the Japan Refrigerating Machine Manufactures Association which was thereafter reorganized in February 1969 to become an incorporated association and renamed as it is at present.

JRAIA is the trade association representing over 100 manufacturers of refrigeration and air-conditioning equipment in Japan. We, the members of JRAIA, have so far been dedicated to offering quality products to the markets of EU. JRAIA aims to promote and improve production, distribution and consumption of refrigeration and air conditioning equipment and their applied products, as well as auxiliary devices and components, automatic controls and accessories and thereby contribute to the steady development of HVAC&R industry and the improvement in people’s standard of living.

For more information, please see our website www.jraia.or.jp

Annex 1: "Double regulation" and design options paradox



Annex 2: Calculation of SEPR for Condensing Unit with compliant fan (1) and with non-compliant fan (2):

	j	Tj (°C)	hj	partload%	refrigeration demand	COPPL	Ph*Tj	PH*Tj/COPDC
	1	-19	0,1	60%	5,35	3,33	0	0
	2	-18	0,4	60%	5,35	3,33	2	1
	3	-17	0,6	60%	5,35	3,33	3	1
	4	-16	1,1	60%	5,35	3,33	6	2
	5	-15	1,7	60%	5,35	3,33	9	3
	6	-14	3,0	60%	5,35	3,33	16	5
	7	-13	3,8	60%	5,35	3,33	20	6
	8	-12	5,7	60%	5,35	3,33	30	9
	9	-11	8,9	60%	5,35	3,33	48	14
	10	-10	11,8	60%	5,35	3,33	63	19
	11	-9	17,3	60%	5,35	3,33	93	28
	12	-8	20,0	60%	5,35	3,33	107	32
	13	-7	28,7	60%	5,35	3,33	154	46
	14	-6	39,7	60%	5,35	3,33	213	64
	15	-5	56,6	60%	5,35	3,33	303	91
	16	-4	76,4	60%	5,35	3,33	409	123
	17	-3	106,1	60%	5,35	3,33	568	171
	18	-2	153,2	60%	5,35	3,33	820	247
	19	-1	203,4	60%	5,35	3,33	1.089	327
	20	0	248,0	60%	5,35	3,33	1.327	399
	21	1	282,0	60%	5,35	3,33	1.509	454
	22	2	275,9	60%	5,35	3,33	1.477	444
	23	3	300,6	60%	5,35	3,33	1.609	484
	24	4	310,8	60%	5,35	3,33	1.663	500
D	25	5	336,5	60%	5,35	3,33	1.801	541
	26	6	350,5	61%	5,48	3,25	1.922	592
	27	7	363,5	63%	5,62	3,17	2.041	645
	28	8	368,9	64%	5,75	3,09	2.121	687
	29	9	371,6	66%	5,88	3,01	2.185	727
	30	10	377,3	67%	6,01	2,93	2.269	775
	31	11	376,5	69%	6,14	2,85	2.314	813
	32	12	386,4	70%	6,28	2,77	2.426	877
	33	13	389,8	72%	6,41	2,69	2.499	930
	34	14	384,4	73%	6,54	2,61	2.515	965
C	35	15	370,5	75%	6,67	2,53	2.472	979
	36	16	345,0	76%	6,81	2,46	2.348	953
	37	17	328,0	78%	6,94	2,40	2.276	948
	38	18	305,4	79%	7,07	2,34	2.159	923
	39	19	261,9	81%	7,20	2,28	1.886	828
	40	20	223,9	82%	7,33	2,22	1.642	741
	41	21	196,3	84%	7,47	2,15	1.466	681
	42	22	163,0	85%	7,60	2,09	1.239	592
	43	23	141,8	87%	7,73	2,03	1.096	540
	44	24	121,9	88%	7,86	1,97	959	487
B	45	25	104,5	90%	7,99	1,91	835	438
	46	26	85,8	91%	8,13	1,86	697	376
	47	27	71,5	93%	8,26	1,81	591	327
	48	28	56,6	94%	8,39	1,76	475	270
	49	29	43,3	96%	8,52	1,71	369	216
	50	30	31,0	97%	8,66	1,66	269	162
	51	31	20,2	99%	8,79	1,61	178	110
A	52	32	11,9	100%	8,92	1,56	106	68
	53	33	8,2	100%	8,92	1,56	73	47
	54	34	3,8	100%	8,92	1,56	34	22
	55	35	2,1	100%	8,92	1,56	19	12
	56	36	1,2	100%	8,92	1,56	11	7
	57	37	0,5	100%	8,92	1,56	5	3
	58	38	0,4	100%	8,92	1,56	4	2
						total	54.836	20.753
							SEPR	2,64

	j	Tj (°C)	hj	partload%	refrigeration demand	COPPL	Ph*Tj	PH*Tj/COPDC
	1	-19	0,1	60%	5,75	3,66	0	0
	2	-18	0,4	60%	5,75	3,66	2	1
	3	-17	0,6	60%	5,75	3,66	4	1
	4	-16	1,1	60%	5,75	3,66	6	2
	5	-15	1,7	60%	5,75	3,66	10	3
	6	-14	3,0	60%	5,75	3,66	17	5
	7	-13	3,8	60%	5,75	3,66	22	6
	8	-12	5,7	60%	5,75	3,66	33	9
	9	-11	8,9	60%	5,75	3,66	51	14
	10	-10	11,8	60%	5,75	3,66	68	19
	11	-9	17,3	60%	5,75	3,66	99	27
	12	-8	20,0	60%	5,75	3,66	115	31
	13	-7	28,7	60%	5,75	3,66	165	45
	14	-6	39,7	60%	5,75	3,66	228	62
	15	-5	56,6	60%	5,75	3,66	326	89
	16	-4	76,4	60%	5,75	3,66	439	120
	17	-3	106,1	60%	5,75	3,66	610	167
	18	-2	153,2	60%	5,75	3,66	882	241
	19	-1	203,4	60%	5,75	3,66	1.170	320
	20	0	248,0	60%	5,75	3,66	1.427	390
	21	1	282,0	60%	5,75	3,66	1.623	443
	22	2	275,9	60%	5,75	3,66	1.588	434
	23	3	300,6	60%	5,75	3,66	1.730	473
	24	4	310,8	60%	5,75	3,66	1.788	489
D	25	5	336,5	60%	5,75	3,66	1.936	529
	26	6	350,5	61%	5,90	3,57	2.066	578
	27	7	363,5	63%	6,04	3,49	2.195	629
	28	8	368,9	64%	6,18	3,40	2.280	670
	29	9	371,6	66%	6,32	3,32	2.350	709
	30	10	377,3	67%	6,46	3,23	2.439	755
	31	11	376,5	69%	6,61	3,14	2.488	791
	32	12	386,4	70%	6,75	3,06	2.608	853
	33	13	389,8	72%	6,89	2,97	2.686	904
	34	14	384,4	73%	7,03	2,89	2.704	937
C	35	15	370,5	75%	7,17	2,80	2.658	949
	36	16	345,0	76%	7,32	2,73	2.524	924
	37	17	328,0	78%	7,46	2,67	2.447	918
	38	18	305,4	79%	7,60	2,60	2.321	893
	39	19	261,9	81%	7,74	2,53	2.028	801
	40	20	223,9	82%	7,89	2,46	1.765	717
	41	21	196,3	84%	8,03	2,40	1.576	658
	42	22	163,0	85%	8,17	2,33	1.332	572
	43	23	141,8	87%	8,31	2,26	1.178	521
	44	24	121,9	88%	8,45	2,19	1.031	470
B	45	25	104,5	90%	8,60	2,13	898	422
	46	26	85,8	91%	8,74	2,07	749	361
	47	27	71,5	93%	8,88	2,02	635	315
	48	28	56,6	94%	9,02	1,97	510	260
	49	29	43,3	96%	9,16	1,91	397	208
	50	30	31,0	97%	9,31	1,86	289	155
	51	31	20,2	99%	9,45	1,80	191	106
A	52	32	11,9	100%	9,59	1,75	114	65
	53	33	8,2	100%	9,59	1,75	78	45
	54	34	3,8	100%	9,59	1,75	37	21
	55	35	2,1	100%	9,59	1,75	20	11
	56	36	1,2	100%	9,59	1,75	12	7
	57	37	0,5	100%	9,59	1,75	5	3
	58	38	0,4	100%	9,59	1,75	4	2
						total	58.954	20.149
							SEPR	**2,93**

ANNEX 3: Example air conditioner/heat pump and different efficiency improvement scenarios

	Baseline	5% point efficiency improvement with compressor	2% point efficiency improvement with semi-conductor devices	10% point efficiency improvement with fans
Power consumption of compressor	86	82	86	86
Power consumption of fans	9	9	9	8
Electric power loss of the semi-conductor devices	5	5	3	5
Total power consumption	100	96	98	99

ANNEX 4: Fans spare parts – Situation on the market

Equipment amount

Year	Year X	Year X+1	Year X+2	Year X+3	Year X+4	Year X+5	Year X+6	Year X+7	Year X+8	Year X+9	Year X+10	Year X+11	Year X+12
Amount placed on the market	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	Stop delivering				

♦The remaining ratio in the market, after 5years 95%, after 10 years 90%.

	Year X	Year X+1	Year X+2	Year X+3	Year X+4	Year X+5	Year X+6	Year X+7	Year X+8	Year X+9	Year X+10	Year X+11	Year X+12
number running in the market	10,000	10,000	10,000	10,000	10,000	9,500	9,500	9,500	9,500	9,500	9,000	9,000	9,000
		10,000	10,000	10,000	10,000	10,000	9,500	9,500	9,500	9,500	9,500	9,000	9,000
			10,000	10,000	10,000	10,000	10,000	9,500	9,500	9,500	9,500	9,500	9,000
				10,000	10,000	10,000	10,000	10,000	9,500	9,500	9,500	9,500	9,500
					10,000	10,000	10,000	10,000	10,000	9,500	9,500	9,500	9,500
						10,000	10,000	10,000	10,000	10,000	9,500	9,500	9,500
							10,000	10,000	10,000	10,000	10,000	9,500	9,500
								10,000	10,000	10,000	10,000	10,000	9,500
Total number running in the market	10,000	20,000	30,000	40,000	50,000	59,500	69,000	78,500	78,000	77,500	76,500	75,500	74,500

Spare parts

average ratio of (number of the spare parts per year)/(total number running in the market): 0.15%

	Year X	Year X+1	Year X+2	Year X+3	Year X+4	Year X+5	Year X+6	Year X+7	Year X+8	Year X+9	Year X+10	Year X+11	Year X+12
Amount of spare parts placed to the market	15	30	45	60	75	89	104	118	117	116	115	113	112

Annual power consumption

per unit : kWh/year 1000

	Year X	Year X+1	Year X+2	Year X+3	Year X+4	Year X+5	Year X+6	Year X+7	Year X+8	Year X+9	Year X+10	Year X+11	Year X+12
Total annual power consumption kWh	10,000,000	20,000,000	30,000,000	40,000,000	50,000,000	59,500,000	69,000,000	78,500,000	78,000,000	77,500,000	76,500,000	75,500,000	74,500,000

if the spare motor or fan has increased the efficiency with: 10.00%

	Year X	Year X+1	Year X+2	Year X+3	Year X+4	Year X+5	Year X+6	Year X+7	Year X+8	Year X+9	Year X+10	Year X+11	Year X+12
Amount of power consumption reduced by higher efficiency spare motor and impeller kWh	1,500	3,000	4,500	6,000	7,500	8,925	10,350	11,775	11,700	11,625	11,475	11,325	11,175
effective ratio of delivering higher efficiency spare motor and impeller	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%	0.015%