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**PRODUCTION OF DOMESTIC REFRIGERATORS, FREEZERS AND HERMETIC
COMPRESSORS**

(Submitted by the Government of China as per Decision 27/16)

PRODUCTION OF DOMESTIC REFRIGERATORS, FREEZERS AND HERMETIC COMPRESSORS

In the People's Republic of China, ozone depleting substances are consumed in the household refrigeration sector for:

- a) Charging of new appliances with CFC-12;
- b) Refilling/topping up of appliances with CFC-12 after repair work; and
- c) Insulation foam blowing using CFC-11.

The main enterprises producing domestic refrigerators and freezers as well as the hermetic compressor manufacturing companies are listed in the following three tables with the production figures for 1995 to 1997.

Table 1. *Production of domestic refrigerators in factories in 1995-1997*

No.	Name of enterprise	Trade name	Production		
			1995	1996	1997
1	Guangdong Kelong	Rongsheng	1,221,900	1,812,164	2,488,816
2	Haier Consortium	Haier	1,000,400	1,687,787	2,066,813
3	Shanghai Shangling Ltd.	Shangling	852,500	704,837	398,329
4	Hefei Meiling Consortium	Meiling	753,500	830,082	850,568
5	China Yangzi Electric Co.	Yangzi	750,200	290,969	n.a.
6	Xinfei Electrical Appliance Ltd.	Xinfei	718,400	1,127,990	1,077,614
7	Changling (Consortium) Ltd.	Changling	626,200	559,057	479,925
8	Wanbao Electrical Appliance	Wanbao	568,800	473,990	461,639
9	Hangzhou Xiling Consortium	Xiling	505,200	348,878	254,015
10	Shanghai Shuanglu Ltd.	Shuanglu	365,500	182,734	n.a.
11	China Xuegui Industrial Ltd.	Hualing	349,800	410,265	444,114
12	Zhejiang Huari Consortium	Huari	340,100	402,396	325,667
13	Huayi Jingdezhen	Huayi	n.a.	212,697	326,820
14	Suzhou Xiangxuehai	Sanxing	n.a.	208,116	459,148
15	Guoying Xinlian	Bole	n.a.	80,806	155,605

			<i>Production</i>		
16	Nanchang Zerowatt	Zerowatt	n.a.	76,000	327,463
17	Yingkou Yingleng	Liaohe	n.a.	74,095	64,855
18	Gansu Changfeng Baoan	Changling	n.a.	58,579	61,953
19	Jilin Jinor	Jinor	n.a.	48,751	n.a.
20	Qingdao Aucma	Aucma	n.a.	44,053	91,472
21	Shanghai Yuandong	Yuandong	n.a.	40,580	n.a.
22	Changsha Zhongyi	Zhongyi	n.a.	37,247	76,061
23	Shenyang	Ridian	n.a.	18,873	4,085
24	Kunmin	Lanhua	n.a.	16,836	7,849
25	Jiangsu Xiaotian'e	Songxia	n.a.	n.a.	188,470
26	Shanghai Xiapu		n.a.	n.a.	30,126
	Total		8,052,500	9,732,942	10,424,808

Source: Household Electric Appliance Journal, China National Council for Light Industry, 15 March 1996.
Statistical Bureau of the National Council for Light Industries, 1998

Table 2. *Production of freezer in factories in 1995 – 1997:*

<i>No.</i>	<i>Name of enterprise</i>	<i>Trade name</i>	<i>Production</i>		
			<i>1995</i>	<i>1996</i>	<i>1997</i>
1	Aucma Electr. Appliance Co.	Aucma	656,400	756,007	698,677
2	Zhejiang Xingxing Co.	Xingxing	332,600	459,848	539,980
3	Haier Consortium	Haier	331,500	344,886	461,499
4	Changshu Baixue	Baixue	289,700	426,997	393,017
5	Suzhou Xiangxuehai Co.	Xiangxuehai	238,900	36,653	43,243
6	Henan Province Freezer	Lengxiong	179,800		n.a.
7	Hangzhou Household Electric Appliance Co.	Huamei	176,200	185,401	n.a.
8	Hangzhou Xiling Consortium	Xiling	171,300	114,096	83,707
9	Jiangsu Banshen	Banshen	n.a.	301,217	457,924

10	Shangdong Hongxiong	Hongxiong	n.a.	226,284	226,142
11	Changsha Zhongyi		n.a.	126,607	164,498
12	Nanchang Zerowatt	Zerowatt	n.a.	120,000	234,073
13	Henan Bingxiong	Bingxiong	n.a.	106,150	343,678
14	Henan Xinfei	Xinfei	n.a.	100,751	51,736
15	Guangzhou Debao	Danhua	n.a.	43,822	36,805
16	Jingsha Yinhe		n.a.	27,000	n.a.
17	Shanghai Shanglu	Shasong Xue'r	n.a.	26,361	n.a.
18	Jilin Jinor	Jinor	n.a.	20,522	n.a.
19	Jianohuan	Lengba	n.a.	16,988	11,615
20	Kunming	Lanhua	n.a.	15,044	12,340
21	Zhejiang Huari	Huari	n.a.	12,857	26,715
22	Changling	Changling	n.a.	11,364	5,068
23	Hangzhou Chengfeng	Chengfeng	n.a.	10,652	n.a.
24	Wanbao Freezer	Huanguang	n.a.	7,958	14,146
25	Xinlian	Bole	n.a.	5,922	1,148
26	Sichuan Chongqing	Chongqing	n.a.	4,326	533
27	Wanbao Household Appl.	Wanbao	n.a.	1,380	n.a.
28	Beijing Snowflake	Xueha	n.a.	958	n.a.
29	Hangzhou Jinsong	Jinsong	n.a.	n.a.	113,516
30	Kelong	Sanyang Kelong	n.a.	n.a.	49,692
31	Yingkou Yingleng	Kianhe	n.a.	n.a.	145
	Total			2,376,400	3,510,051
					3,806,544

Source: Household Electric Appliance Journal, China National Council for Light Industry, 15 March 1996.
Statistical Bureau of the National Council for Light Industries, 1998

Table 3. *Production of domestic refrigeration compressor factories in 1995 – 1997:*

<i>No.</i>	<i>Name of enterprise</i>	<i>Trade name</i>	<i>Production</i>		
			<i>1995</i>	<i>1996</i>	<i>1997</i>
1	Wanbao Electrical Appliance	Wanbao	1,250,198	1,250,688	1,006,688
2	Zanussi Tianjing Compressor	Zanussi	1,199,621	919,469	877,646
3	Zhejiang Hangli Refr. Co.	Dengfule	1,100,440	1,001,223	1,113,867
4	Jiaxipera Compressor Ltd.	Jiaxipera	1,077,592	1,024,677	745,837
5	Yuhuan Compressor Factory	Shuanglong	1,044,693	579,053	363,216
6	Shanghai Refrig. Compressor	Xuanpai	800,715	853,584	336,160
7	Huangshi Dongbei Refrig Co.	Haole	515,679	401,891	814,878
8	Changshu Refrig. Equipment	Changshu	500,018	594,777	357,170
9	Xi'an Dongfang	Dongfang	412,685	311,688	102,107
10	Jingdezhen Huayi Elctrical Co.	Taikang	400,000	625,095	801,261
11	Xi'an Yuandong Co.	Yuandong	330,937	167,485	37,670
12	Chongqing Changfeng	Chanfeng Taikang	195,703	43,113	n.a.
13	Beijing Snowflake Compressor	BESCO	158,975	302,207	585,618
14	Changzhou Compressor	Changyi	123,115	n.a.	n.a.
15	Beijing Xuehua Ltd.	Xuehua	67,463	n.a.	n.a.
16	Jianchouan Machinery Factory	Jianchouan	61,222	139,788	50,000
17	Suzhou Xiangxuehai Co.	Xiangxuehai	12,632	n.a.	n.a.
18	Nanguang Refrig. Equipment		n.a.	141,650	n.a.
	<u>Total production</u>		<u>9,251,688</u>	<u>8,214,738</u>	<u>7,192,118</u>

Source: China Light Industry Information Centre.

It can be seen from the table above that the actual production of the domestic refrigerators and freezers manufacturers exceeds the production of hermetic compressors used in these factories. It has to be also noted that hermetic compressors with a rated capacity below 250 W are also consumed in the commercial refrigeration sector as well as for the servicing of the large stock of various refrigerators and freezers in use within the country. Regarding the compressor factories, until now the following companies received

Shanghai Refrigeration Compressor (World Bank)
Huangshi Dongbei Refrig. Co. (UNIDO)
Jiaxipera Compressor Ltd. (UNIDO)
Wanbao Electrical Appliance (UNIDO)
Xi'an Yuan Dong Compressor Co. (UNIDO)
Yuhuan Compressor Factory (UNIDO)
Zanussi Tianjin Compressor (UNIDO)
Zhejiang Hangli Refr. Co. (UNIDO)

A project for the Beijing Snowflake Compressor Factory was submitted for the 27th Meeting of the ExCom requesting retro-active financing, but it has not been approved yet.

Another project is to be submitted for the approval of the Executive Committee on its 28th Meeting, this project is for the Changshu Refrigeration Equipment Company.

Thus, altogether 8 projects have been approved and 2 projects are waiting for approval in the hermetic compressor sub-sector. Among the large producers, the Huayi Jingdezhen Electrical Co. is not eligible for assistance from the Fund, and the conversion of some of other small producers on the list if not requested from the Multilateral Fund due to their small production volume and questionable financial situation.

It is proposed that a terminal umbrella project be formulated and submitted for approval for the conversion of the remaining financially viable small factories. This terminal umbrella project could be prepared and submitted for approval in the year 2000.

With the approval and subsequent implementation of the pending two large-scale projects (Beijing Snowflake Compressor Factory and Changshu Refrigeration Equipment Company) and the proposed terminal umbrella project covering the small enterprises, the conversion of the sub-sector producing hermetic compressors with a rated capacity below 250 W will be completed, and no further assistance will be required from the Fund in this sub-sector.