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CANADA

DEPARTMENT OF TRADE AND COMMERCE DOMINION BUREAU OF STATISTICS TRANSPORTATION & PUBLIC UTILITIES BRANCH

USE OF ELECTRIC POWER

IN

MANUFACTURING AND MINING INDUSTRIES

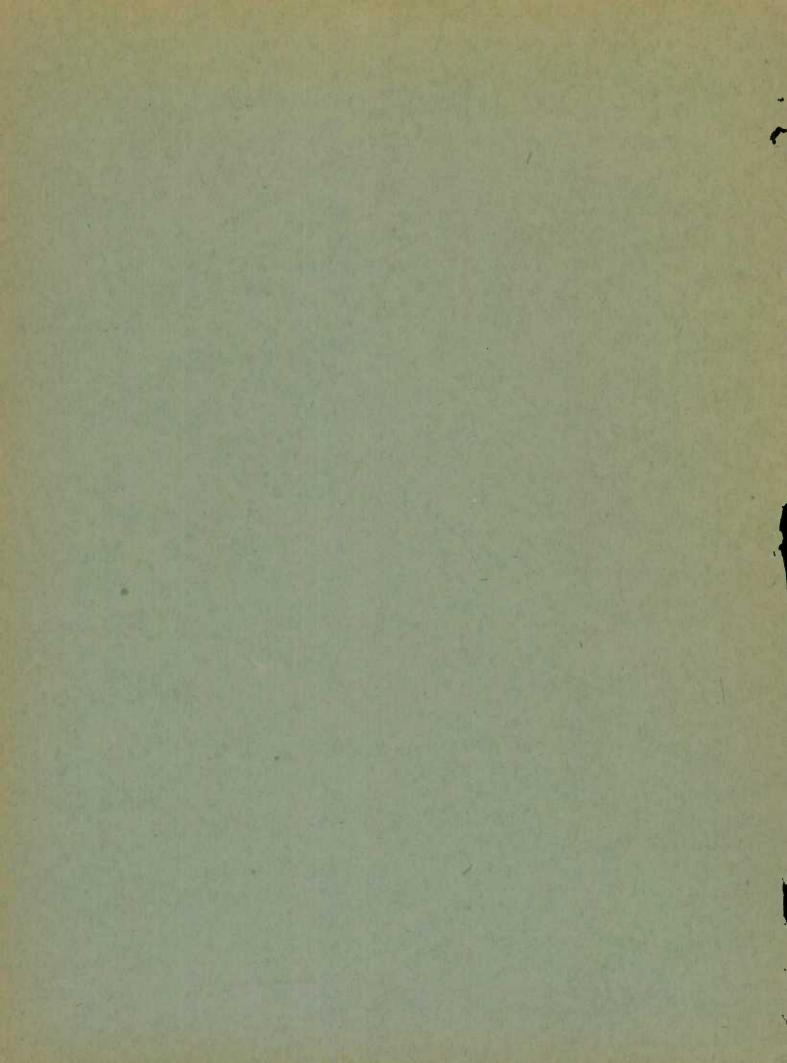
IN

CANADA

1944



OTTAWA 1947



DOMINION BUREAU OF STATISTICS TRANSPORTATION AND PUBLIC UTILITIES BRANCH OTTAWA

Dominion Statistician, HERBERT MARSHALL

Chief, Transportation and Public Utilities Branch, G.S.Wrong

USE OF ELECTRIC FORMER IN MANUFACTURING AND MINING INDUSTRIES IN CANADA 1 9 4 4

20-1920

This report has attempted to show the evolution of power machinery in manufacturing and mining industries in Canada toward electric drive and particularly toward electric motors driven by power generated in central stations. With no coal mined in the chief manufacturing provinces of Ontario and Quebec and with a large supply of water power within economic transmission distances of manufacturing and mining centres in these and in most of the other provinces, this trend has been more pronounced than in many countries. The trend has been measured by the ratio of electric motor capacity to total power equipment installed in these industries, the central electric station industry being excluded as one of the manufacturing industries.

This ratio of electric motor rating to total power equipment indicates this evolution, but the movement towards electric drive is slightly exaggerated because of the practice in mills, factories, etc., of installing motors at each machine or group of machines with a total capacity greater than would be necessary if only one large motor were used or if a steam engine and belts and shafting were used. Also there are some industries which require steam in their manufacturing processes, and consequently use steam engines as their primary power equipment. Some of these are a hundred per cent electrified and some are not. Other industries use direct hydraulic drive such as ground wood pulp mills. In such industries it is probable that electric motors will never supplant other forms of power equipment.

In the early annual industrial censuses no segregation was made of electric motors operated on power purchased from central electric stations and on power produced within the establishment making the report. Consequently, 1923 is the first year for which total power employed can be compiled without duplication.

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During the twenty-one years from 1923 to 1944 there has been a steady increase in total capacity of power equipment in manufacturing and mining industries end electric motors driven by central station power, which constitute 69 per cent of the total power capacity, increased by 376 per cent. The capacity of water wheels increased only 27 per cent, the majority of new installations being in central electric stations. Steam engines also showed a relatively small increase compared to the total and although internal combustion

engines increased in capacity by 618 per cent, they still constitute only 5 per cent of the total capacity. These include both diesel or compression ignition engines and electric ignition engines, the latter having approximately twice the capacity of the former.

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Electric motors driven by current generated in the manufacturing industries showed a small increase in 1944 from the 1943 capacity and also in the mining industries.

The following table shows the rated capacity in horse power of all power equipment in manufacturing and mining industries in 1923 and 1944. These include equipment in regular use and idle equipment in operating industries.

	Capa (Horse	city Power)	Incr	ease
	1923	1944	Н. Р.	P. C.
Manufacturing Industries				
Water Wheels	587,191	729,216	142,025	24
Steam Engines	554,191	1,013,615	459,424	83
Internal Combustion Engines	46,829	288,312	241,483	516
Total	1,188,211	2,031,143	842,932	71
Electric Motors on Purchased Power	958,692	4,437,296	3,478,604	363
Total Power	2,146,903	6,468,439	4,321,536	201.
Electric Motors on Power Generated in the Industries	357,136	779,717	422,581	118
Total Electric Motors	1,315,828	5,217,013	3,901,185	296
Wining Trinstries				
Mining Industries Water Wheels	27,528	50,634	23,106	84
Steam Engines	148,039	139,437	- 8,602	- 6
Internal Combustion Engines	6,914	97,462	90,548	1,310
Total	182,481	287,533	105,052	57
Electric Motors on Purchased Power	118,835	687,652	568,817	479
Totel Power	301,316	975,185	675,869	224
Electric Motors on Power Generated in the Industries	53,860	86,558	32,698	61
Total Electric Motors	172,695	774,210	601,515	348
Manufacturing and Mining Industries	034 (730)	#50 050		A Alterna In
Water Wheels	614,719	779,850	165,131	27
Stean Engines	702,230	1,153,052 385,774	450,822	64
Internal Combustion Engines	1,370,692	2,318,676	332,031 947,984	618
Electric Motors on Purchased Power	1,077,527	5,124,948	4,047,421	69 376
Total Power	2,448,219	7,443,624	4,047,421	204
Electric Motors on Power Generated in the Industries	410,996	866,275	4,050,400	111
Total Electric Motors	1,488,523	5,991,223	4,502,700	302
TO PAT TTECPLIC HO COLD	1,400,020	0,001,000	4,00%,100	JUZ

The ratio of electric motor capacity to total power employed in manufacturing industries has increased fairly steadily, the few recessions being less than one point up to 1943 when the decline was from 61.7 to 80.7 per cent. Commencing with 1955 reports data were gathered on spare or idle equipment. For each of the years 1935-1944 the percentage of total equipment not in regular use was approximately the same, around six per cent. The equipment in regular use is more informative than total figures and when data for several years are available these tables will be compiled on the basis of equipment in regular use. In the meantime, comparisons are possible only for total equipment in the operating plants. Although equipment in idle plants might be considered as idle or spare equipment in the industry or group of industries, it is not included in these tables as reports are received only from plants in operation during the year. With increased business the idle equipment might be expected to decline in both total capacity and as a percentage of the total, but this has not occurred. In 1935 idle equipment in the manufacturing industry had a total capacity of 255,347 h.p. or 5.9 per cent of the total capacity, whereas in 1944 the capacity was 434,217 or 6.7 per cent of the total. Apparently a certain amount of reserve equipment is required in various industries.

Table 3 indicates that while the transfer to electric drive from other forms of power has been taking place in all groups of industries, many of them were highly electrified in 1923.

The power employed in the pulp and paper industry is by far the greatest of any industry, constituting 35 per cent of the total for all manufacturing industries in 1925 and 33 per cent in 1944.

In previous years the consumption of electricity by the pulp and paper mills was an even larger percentage of the total consumption, but with the increasing requirement of primary power for the aluminium industry and other electro-metallurgical and electro-chemical industries the pulp and paper's percentage dropped from 39.8 in 1941 to 27 in 1943. This was due to the increased consumption of electricity by other industries and also by the transfer from electric boilers to fuel boilers by the pulp and paper mills; in 1939 these mills purchased 5,152,790,000 kw. hrs. for their boilers, whereas in 1944 the energy purchased for this purpose decreased to 1,647,917,000 kw. hrs. The consumption for all purposes by the non-ferrous metal, smelting and refining group, which includes the aluminium industry, increased from 3,492,822,000 kw. hrs. in 1939 to 10,685,916,000 kw. hrs., an amount 31 per cent above that consumed by the pulp and paper industry, and this does not include the fabricating plants of the aluminium industry.

Table 4 shows the power equipment in regular use in manufacturing plants operating during 1944. The late in this table differ from those shown in reports prior to 1936 in that idle equipment is excluded here except for the group totals where totals both including and excluding idle equipment are shown. Under each group are shown only the industries having large power installations. Many other industries not listed use electric drive almost exclusively. The consumption of electricity is also shown for each industry listed. This is broken down into "purchased from central stations" and "generated by the industries." The former is also divided between that used for lighting and power purposes and for other purposes, which includes electricity used in electric furnaces, electric boilers, electro-chemical processes, etc. Electric boilors, particularly in pulp and paper mills, took the major portion of this class of electricity in years prior to 1940, and in most cases it was surplus or off-peak power that was purchased for this purpose. The total consumption for these other purposes in 1944 was 14,929,905,000 kw.hrs. of purchased power, or 58 per cent of the total quantity purchased. A portion of the power generated in the industries also is uged for other

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than lighting and driving machines but a comprehensive breakdown is not available.

The mining industries are practically as highly electrified as the manufacturing industries, the ratio increasing from 57.3 p.c. in 1923 to 79.4 p.c. in 1944. Data for the mining industries are shown in Tables 2 & 7.

The fuels group showed an increase in capacity of motors operated on purchased power from 10,035 h.p. in 1923 to 125,796 h.p. in 1944 as compared with a decrease from 37,308 to 24,316 h.p. in motors operated by power generated by the coal mines and gas and oil wells. These industries apparently have found it more economical to purchase electricity than produce it themselves and also more advantageous than to use steam engines.

Table 8 brings together, by groups of manufacturing industries, the number of employees on salaries and on wages, and the h.p. ratings of all power equipment, including both active and idle, and from these data the average horse power of power equipment per employee have been computed.

The rising averages up to 1939 indicate in a general way a substitution of mechanical power for manpower or, in other words, they indicate an increasing productive capacity per employees. The number of employees fluctuate more quickly than installed power equipment capacities. Thus the reduction of employees in 1933 did not have a corresponding reduction in power equipment and consequently the average horse power per employee showed an increase out of line with the trend.

The downward trend of these averages during the war years was undoubtedly due to the increased employment of night shifts resulting in a greater use per day of the power equipment. This is indicated by an increased consumption of electricity for power and lighting per horse power of electric motors of 24 per cent and with the pulp and paper industry excluded the increase was 31 per cent; the pulp and paper industries use enormous quantities of electricity, much more than any other industry. On an employee basis most of the industries consumed slightly less electricity which was to be expected. Again excluding the pulp and paper industry the decrease per employee was only approximately 2 per cent.

Table 1

POWER EQUIPMENT OF ALL MANUFACTURING/ INDUSTRIES IN CANADA

		SUL	MARY		
Year		I	eû	Electric	
Iear	Total Powar Enployed	By Central Electric Stn. Power	By Power generated in the Industries	Total Motor Capacity	Power Per Cent of Total
about 1	H.P.	H.P.	H.P.	H.P.	P.C.
1923	2,146,903	958,692	357,136	1,315,828	61.3
1929	3,867,979	2,393,684	496,036	2,889,720	74.7
1931	4,114,677	2,587,411	539,800	3,127,211	76.0
1933	4,147,831	2,671,440	502,706	3,174,147	76.5
1935	4,346,775	2, 374, 693	512,396	3,387,089	77.9
1937	4,712,279	3,129,790	602,955	3, 732, 745	79.2
1939	5,056,357	3,375,169	694,450	4,069,619	80.5
1940	5,290,935	3,563,048	724,769	4,287,817	81.1
1941	5,850,076	4,028,942	740,112	4,769,054	81.6
1942	5,969,895	4,076,277	800,917	4,877,194	81.7
1943	6,415,851	4,420,105	760,630	x 5,180,735	80.7
1944	6,468,439	4,437,296	779,717	5,217,013	80.7

/ Exclusing central electric stations and including idle and reserve equipment.

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- 5 -POWER EMPLOYED IN THE MINING INDUSTRY IN CAMADA

		Electric Motors									
Year	Total Year Power Employed	Operated by Central Electric Station Power	Operated by Power Generated in the Industry	Total Motor Capacity	Power P.C. of Total						
	H.P.	H.P.	H.P.	H.P.	P.C.						
1923	301,316	118,835	53,860	172,695	57.3						
1924	314,173	125,725	71,376	197,101	62.7						
1925	323, 882	147,191	64,126	211,317	65.2						
1926	336,880	167,241	64,277	231,518	68.7						
1927	380,460	202,702	62,067	264,769	69.6						
1928	419,464	223,666	68,121	291,787	69.6						
1929	450,261	238,974	75,069	314,043	69.7						
1930	509,007	297,826	88,585	386,411	75.9						
1931	520,638	313,567	79,259	392,826	75.5						
1932	482,344	287,130	76,626	363,756	75.4						
1933	533,779	322,361	47,407	369,768	69.5						
1934	621,071	+00,035	66,647	466,682	75.1						
1935	688,470	446,247	74,687	520,934	75.7						
1936	724,639	474,000	79,140	553,140	76.5						
1937	850,489	577,703	101,526	678,229	79.7						
1938	874,943	582,510	89,368	671,878	76.8						
1939	1,015,200	712,311	101,740	814,051	80.2						
1940	1,061,840	746,777	101,606	848,383	79.9						
1941	1,113,042	749,126	106,501	855,627	76.9						
1942	1,008,777	672,097	118,748	790,845	78.4						
1943	988,457	695,109	105,436	800,545	81.0						
1944	975,185	687,652	86,558	774,210	79.4						

/ Excluding non-ferrous smelting, salt, cement clay products and lime, included with "Manufacturing".

Table 3

SUBMARY OF POWER EMPLOYED IN MANUFACTURING INDUSTRIES (Including Idle and Reserve Equipment)

	19	23	19	42	19	4 3	1944		
		wer	Po	wer	Po	wer	Po	wer	
Manufacturing Industries	Total H.P.	Per cent Electric Motor							
1. Vegetable Products	257,176	65	405,076	79	414,953	80	508,073	74	
2. Animal Products	80,895	72	165,682	84	179,322	79	189,159	88	
3. Textile Products	107,850	83	258,679	91	266,834	92	277,304	91	
4. Wood & Paper Products	1,146,571	50	2,742,314	73	2,766,491	72	2,845,242	73	
5. Iron and its "	213,705	89	1,056,870	95	1,209,202	91	1,200,802	91	
6. Non-ferrous Metal "	99,963	47	656,415	90	701,970	89	656,664	90	
7. Non-metallic Mineral Products	131,780	83	289,332	83	314,221	80	316,177	80	
8. Chemical & Allied "	62,447	72	354,314	92	525,762	85	377,448	91	
9. Miscellaneous	46,516	86	32,107	98	57,096	98	37,570	98	
TOTAL	2,146,903	61	5,969,895	82	6,415,851	81.	6,468,439	81.	

POWER BOULPMENT OF MANUFACTURING INDUSTRIES IN CANADA, 1944 (Equipment in Regular Use)

Prove Prove Operation Prove			Electa	ic Motors Oper	ated			Consumption	of Electricity	dented in the
Power Industries Culative Power Industries Culative Power Power Industries Culative Power Power Industries Power			Electric	Generated	Notor	Per Cent	Central	Electric	by the	Total Consumption
H.P. H.P. H.P. H.P. H.P. H.P. P.C. (Boursaid of Filowett Bours) BEOFF 1. TREATABLE PROPERT x 508,073 355,186 55,949 579,135 74.4 481,099 881 76,511 568,94 Biscuits, confactionery, etc. 24,500 22,269 354.0 239,444 6 - 239,444 Bread mit bakery products 26,249 21,605 559 22,164 64.4 55,653 90 - 309,557 7 1.07 71007 77.35 109,555 7 1.07 710,7 77.35 109,555 7 1.07 710,7 77.35 109,555 7 1.07 710,7 77.256 456 55,721 109,7 109,757 7.75 109,452 7 1.07,52 100,777 113,77 9,947 - 7,75 109,159 106,699 3,515 124,955 60,99 249,044 40,140 4,729 255,4 109,159 107,512 100,52 100,52 100,52			Power	Industries	Capacity	of Total			Industries	
GROUP 1. TEXTAGE PROPERTS X SOB,075 S25,186 S2,949 S78,135 74.4 44,949 865 75,511 S69,9 Hiscuits, confectionery, etc. 24,000 22,268 S41 22,009 95.0 23,444 6 - 22,44 Bread and bakery pertures 19,555 10,105 4 19,130 95.0 23,444 6 - 35,6 Pream and feed alls 12,692 66,283 1,496 64.4 55,65 90 - 35,6 Pruit and regetable preparations 23,705 10,945 906 13,731 66.5 10,442 44 61 126,725 Sugar refineries 22,599 6,877 12,100 27,057 113.7 9,947 - 17,010 22,55 126,100 27,057 113.7 9,947 - 17,010 22,55 126,100 37,051 134,355 74.4 66.5 13,446 6 - 49,04 4,729 22,555 126,100 27,057 <		A	B	C	D	E	F	G	H	I
MADE 1. VOLATING X 000,073 0.00,073 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,074 0.00,075 0.00,074 0.00,075 0.00,074 0.00,075 <td></td> <td>H.P.</td> <td>H.P.</td> <td>H.P.</td> <td>H.P.</td> <td>P.C.</td> <td></td> <td>(Thousands of</td> <td>Kilowatt Hours)</td> <td>structure.</td>		H.P.	H.P.	H.P.	H.P.	P.C.		(Thousands of	Kilowatt Hours)	structure.
Biscuits, confactionary, etc. 24,000 22,266 541 22,609 95.0 29,444 66 29,4 Bread and bakery products 19,555 10,130 4 10,130 93.0 57,286 433 57,3 Bread and bakery products 121,692 66,835 1,496 69,779 57.3 109,555 7 1,187 110,7 Prour and feed aills 121,692 66,835 1,996 69,779 57.3 109,555 7 1,187 120,7 Sugar refineries 22,599 8,677 16,180 27,057 119,7 9,947 17,616 27,65 Bouts rook, footwar, etc. 139,159 140,969 3,616 180,485 79.4 10,616 27,65 116,0 2,440 4,40,140 4,729 225,6 126,100 2,440 4,555 129,100 1,60,603 3,616 180,485 79.4 10,61,603 1,60,503 10,602	CROUP 1. VECETARIE PRODUCTS *	508,073	325,186	52,949	378,135	74.4				122 (97)
Bread and balaxy products 19,355 18,256 4 19,150 95.0 $37,286$ 43 - $37,286$ Bread and balaxy products 22,244 21,605 559 22,164 64.4 55,655 90 - 35,6 Fruit and feed sills 121,692 68,263 1,496 69,779 57.3 109,553 7 1,267 110,6 Rubber goods, footwar, etc. 155,477 81,140 19,151 100,299 65.4 135,725 586 55,721 192,6 Super refineries 22,599 8,677 18,180 27,057 119.7 9,447 - 17,612 22,55 Super refineries 189,159 146,669 3,613 180,485 79.4 - - 17,612 22,55 Super refineries 199,159 146,669 3,613 180,485 79.4 - - 17,612 22,55 Super refineries 17,592 140,521 5,515 143,635 89.9 249,044 40,140 4,729 25,56 16,13 Super refineries 17,519 </td <td></td> <td>482,048</td> <td>308,634</td> <td>48,767</td> <td>357,401</td> <td>74.1</td> <td>491,989</td> <td>851</td> <td>75,511</td> <td>568,331</td>		482,048	308,634	48,767	357,401	74.1	491,989	851	75,511	568,331
Breweries 25,249 21,055 559 22,164 84.4 35,563 90 - 35,6 Flour and feed alls 121,622 68,265 1,496 69,779 57.5 109,555 7 1,187 110,7 Pruit and vegetable preparations 23,705 18,945 906 19,751 66.5 18,442 44 61 122,62 Sugar refineries 22,599 8,677 16,180 27,057 119.7 9,947 - 17,616 27,52 Sugar refineries 22,901 146,609 5,615 180,485 79.4 - 17,616 27,52 Sutter and cheese 48,585 37,631 60 37,691 77.5 48,996 46 - 49,56 Sutter and cheese 48,585 36,757 122,5 52,879 92,2 20,447 - - 20,456 16,1 Sutter and cheese 48,585 36,757 122,5 52,879 92,2 122,967 37,269 -	Biscuits, confectionery, etc.	24,308	22,268	341	22,609	95.0	29,444	6	-	29,450
Plour and feed aills 112,692 66,265 1,496 69,779 57.3 109,555 7 1,187 110,7 Pruit and vegetable preparatiess 29,705 16,945 906 19,751 66.5 16,942 44 61 16,57 Rubber goods, footwar, etc. 155,477 11,148 19,151 100,299 65.4 155,725 566 55,721 192,0 Sugar refineries 22,599 6,677 16,168 27,057 119.7 9,447 - 17,7,502 295,6 Summaries 177,592 140,521 5,515 143,855 60.9 249,014 40,140 4,729 295,6 Summaries 177,592 140,521 5,515 143,855 60.9 244.6 14,160 2,440 2,556 16,130 Latter tumeries 17,593 15,000 6523 15,651 15,657 20,447 - - - - - 160,52 Singuttering and meat packing 57,553 56,757 122 52,679 92.2 122,967 37,289 - 160,52 <td>Bread and bakery products</td> <td>19,535</td> <td>18,126</td> <td>4</td> <td>18,130</td> <td>93.0</td> <td>37,286</td> <td>43</td> <td>_</td> <td>37,329</td>	Bread and bakery products	19,535	18,126	4	18,130	93.0	37,286	43	_	37,329
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Breweries	26,249	21,605	559	22,164	84.4	35,563	90	-	35,653
Rubber goods, footwar, etc. 155,477 Hi,148 19,151 100,299 65.4 135,725 588 55,721 112,7 Sugar refineries 22,599 8,877 16,180 27,057 119.7 9,947 - 17,616 27,957 GROUP 2, ANIMAL PRODUCTS x 189,159 146,669 3,616 130,485 79.4 - - 17,616 27,957 Butter and cheese 48,585 37,651 60 37,091 77.5 40,996 46 - 49,05 Fish curin; and pacing 22,901 8,905 1,997 10,502 44.8 11,160 2,420 2,556 61,657 Shuther tameries 17,519 15,008 623 15,631 86.2 20,447 - - 20,45 GhOUP 5. TEXTHES AND TEXTLEX 277,504 220,277 30,994 251,261 90.6 - 180,57 15,679 86,999 556,4 Gotton yurn and cloth 107,985 88,502 10,902 99,204 91.9 208,052 10,293 44,52,14 26,15,15	Flour and feed mills	121,692	68,283	1,496	69,779	57.3	109,533	7	1,187	110,727
Rubber goods, footwar, etc. $155,477$ $H1,148$ $19,151$ $100,299$ 65.4 $125,725$ 586 $55,721$ $192,0$ Sugar refineries $22,599$ $6,697$ $16,160$ $27,057$ 119.7 $9,947$ - $17,016$ $27,57$ BOUT 2. ANIMAL PRODUCTS $189,159$ $146,669$ $3,616$ $180,485$ 79.4 - $17,512$ $440,044$ $40,140$ $4,729$ $2255,6$ Sutter and cheese $48,585$ $57,651$ 60 $37,091$ 77.5 $48,996$ 46 - $49,05$ Sutter and cheese $17,519$ $8,695$ $100,020$ 244.5 $11,160$ $2,420$ $2,556$ $10,561$ Lather turnerise $17,519$ $15,008$ 625 $15,631$ 69.2 $20,447$ $20,46$ Shughtering, and meat packing $57,355$ $55,777$ 122 $52,631$ $90,6$ $80,699$ $556,42$ Shughtering, and meat packing $27,504$ $220,277$ $30,984$ $251,261$ $90,6$ $160,57$ Shughtering, and indicted $107,693$ $89,502$ $10,902$ $92,55$ $15,679$ $96,999$ $556,42$ Coton yarn and cloth $107,693$ $89,502$ $10,903$ $92,55$ $10,595$ $15,679$ $457,905$ $15,679$ $457,995$ Solut cloth goods $12,557$ $10,504$ 465 $109,925$ 95.4 $102,554$ $5,572$ $26,433$ $154,45$ Solut sub and tooth $107,995$ <td>Fruit and vegetable preparations</td> <td>29,705</td> <td>18,845</td> <td>906</td> <td>19,751</td> <td>66.5</td> <td>18,442</td> <td>44</td> <td>81</td> <td>18,567</td>	Fruit and vegetable preparations	29,705	18,845	906	19,751	66.5	18,442	44	81	18,567
Sugar refineries $22,599$ $6,677$ $16,180$ $27,057$ $119,7$ $9,947$ $ 17,616$ $27,57$ GROUP 2, ANTMAL FRODUCTSx $199,159$ $146,969$ $3,616$ $180,485$ 79.4 $ 17,616$ $27,57$ Sutter and cheese $46,555$ $57,651$ 600 $37,691$ 77.55 $48,996$ 466 $ 49,06$ Sutter and cheese $46,555$ $57,651$ 600 $37,691$ 77.55 $48,996$ 466 $ 49,06$ Eather turnerise $17,519$ $15,008$ 625 $15,611$ 695.2 $20,447$ $ 20,64$ Suphtering, and meat packing $22,961$ $8,405$ $1,997$ $10,302$ 44.5 $10,100$ $2,420$ $2,556$ $16,17$ Suphtering, and meat packing $27,575$ $55,757$ 122 $52,897$ 92.2 $122,967$ $37,269$ $ 20,447$ Suphtering, and meat packing $277,504$ $220,277$ $30,984$ $251,261$ 90.6 $ 20,447$ GhOUP 5, TEXTILES AD TEXTILE x $277,504$ $220,277$ $30,984$ $251,261$ 90.6 92.2 $12,967$ $37,229$ $ 20,447$ GhOUP 5, TEXTILE AD TEXTILE x $277,504$ $220,277$ $30,984$ $251,261$ 90.6 92.0 $457,905$ $15,679$ $84,999$ $84,992$ Group run and cloth $107,895$ $68,692$ $21,952$ $10,952$ $21,952,761$ $84,924$ <	Rubber goods, footwear, etc.	153,477	81,148	19,151	100,299	65.4	135,725	586	55,721	192,034
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Sugar refineries	22,599	8,877	18,180	27,057	119.7	9,947	-	17,616	27,563
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$										
Butter and cheese48,585 $37,651$ 60 $37,091$ 77.5 $48,996$ 46 $ 49,0$ Fish curing and packing $22,961$ $8,405$ $1,997$ $10,302$ 44.8 $11,160$ $2,420$ $2,556$ $16,1$ Laather tanneries $17,519$ $15,008$ 625 $15,631$ 80.2 $20,447$ $ 20,487$ Shughtering, and meat packing $57,553$ $52,757$ 122 $52,879$ 92.2 $122,967$ $37,289$ $ 160,52$ ChOUP 5. TEXTILES AND TEXTILE x PROPUCTS $277,504$ $220,277$ $30,994$ $251,261$ $90,6$ $ 20,487$ $ 20,489$ Chour yurn and cloth $107,985$ $88,302$ $10,904$ $99,205$ 91.9 $208,032$ $10,289$ $45,204$ $261,52$ Hosiary and knitted goods $21,552$ $14,003$ $4,102$ $18,105$ 94.9 $22,642$ 7 $4,435$ $31,00$ Silk and artificial silk $38,137$ $28,232$ $8,140$ $56,372$ 95.4 $102,554$ $5,372$ $26,493$ $135,4$ Foollen cloth goods $18,557$ $16,504$ 465 $16,969$ 91.4 $28,750$ $1,649,217$ $1,932,761$ $8,517,0$ Chour 4. NOOD & PAPER PRODUCTS x Purniture $2,945,242$ $1,557,565$ $509,665$ $2,067,250$ 72.7 72.7 73.4 $4,955,071$ $1,649,217$ $1,932,761$ $8,517,02$ Purniture $29,144$ $20,557$ $5,5$	GROUP 2. ANIMAL PRODUCTS x	189,159	146,869	3,616	150,485	79.4				
Fish curing and packing12,92 (22,9818,405 (9,407)1,97 (10,508)10,502 (44.8)44.8 (11,160)1,160 (2,420)2,420 		177,592	140,321	3,515	143,836	80.9	249,014	40,140	4,729	293,883
Leather tunneries17,51911,00862515,63189.220,447 $ -$ 20,45Slauchtering, and meat packing57,35552,75712252,87992.2122,96737,289 $-$ 160,52CHOUP 5. TEXTILES AND TEXTILE277,504220,27730,984251,26190,6 $ -$ <	Butter and cheese	48,585	37,651	60	37,691	77.5	48,996	46	-	49,042
Shughtering and meat packing $17,13$ $17,13$ $17,13$ 122 122 $12,13$ $122,967$ $37,289$ $ 160,57$ GROUP 5. TEXTILES AND TEXTILE PROFUCTS $227,304$ $220,277$ $30,984$ $251,261$ 90.6 $ 15,679$ $84,999$ $558,479$ GROUP 5. TEXTILES AND TEXTILE PROFUCTS $257,402$ $2207,564$ $29,316$ $236,880$ 92.0 $457,905$ $15,679$ $84,999$ $558,479$ Cotton purn and cloth $107,985$ $88,502$ $10,902$ $99,205$ 91.9 $2208,052$ $10,289$ $45,204$ $261,56$ Gotton purn and cloth $107,985$ $88,502$ $10,902$ $99,205$ 91.9 $208,052$ $10,289$ $45,204$ $261,56$ Gotton purn and cloth $107,985$ $88,502$ $10,902$ $99,205$ 91.9 $208,052$ $10,289$ $45,204$ $261,56$ Galaxie vanishing $28,157$ $16,504$ $4,102$ $18,105$ 84.9 $220,642$ 7 $4,4355$ $51,67$ GROUP 4. NOOD & PAPER PRODUCTS x Purniture $2,945,242$ $1,557,565$ $509,665$ $2,067,250$ 72.7 $1,649,217$ $1,952,761$ $8,517,665$ Furniture $29,144$ $20,557$ $3,557$ $24,114$ 82.7 $19,101$ 10.5 $3,589$ 22.7 Furniture $29,144$ $20,557$ $3,557$ $24,114$ 82.7 $19,101$ 10.5 $3,589$ 22.7 Furniture $29,144$ $20,557$ $3,557$ $24,114$ <	Fish curing and packing	22,981	8,405	1,897	10,302	44.8	11,160	2,420	2,536	16,116
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Leather tanneries	17,519	15,008	623	15,631	89.2	20,447	-	-	20,447
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	Slaughtering and meat packing	57,353	52,757	122	52,879	92.2	122,967	37,289	-	160,256
Cotton jurn and cloth $107,895$ $88,302$ $10,901$ $99,205$ 91.9 $208,032$ $10,289$ $45,204$ $261,55$ Hosiery and knitted goods $21,552$ $14,003$ $4,102$ $18,105$ 84.9 $20,642$ 7 $4,435$ $31,00$ Silk and artificial silk $38,137$ $28,232$ $8,140$ $36,372$ 95.4 $102,554$ $5,572$ $26,493$ $134,44$ Woollen cloth goods $18,557$ $16,504$ 465 $16,969$ 91.4 $28,752$ - $1,142$ $29,69$ GROUP 4. NOOD & PAPER PRODUCTS x $2,945,242$ $1,557,565$ $509,685$ $2,067,250$ 72.7 - $1,649,217$ $1,932,761$ $8,517,065$ Furniture $29,144$ $20,557$ $5,557$ $24,114$ 82.7 $19,101$ 105 $3,589$ $22,57$ Planing mills, sash and door $57,972$ $34,235$ $3,039$ $57,274$ 64.3 $25,543$ 300 $2,858$ $28,66$ Printing and publishing $28,030$ $27,482$ 799 $28,281$ 100.9 $36,259$ 619 $1,647,917$ $1,851,288$ $8,168,66$ Auw mills $459,341$ $50,455$ $66,254$ $116,689$ 25.4 $44,027$ 85 $82,439$ $126,59$	GROUP 5. TEXTILES AND TEXTILE x	277,304	220,277	30,984	251,261	90.6				
Hosiery and knitted goods $21,552$ $14,003$ $4,102$ $18,105$ 84.9 $2C,642$ 7 $4,435$ $51,0$ Silk and artificial silk $38,137$ $28,252$ $8,140$ $56,372$ 95.4 $102,554$ $5,372$ $26,493$ $134,4$ Woollen cloth goods $18,557$ $16,504$ 465 $16,969$ 91.4 $28,752$ $ 1,142$ $29,55$ GROUP 4. NOOD & PAPER PRODUCTS x $2,945,242$ $1,557,565$ $509,685$ $2,067,250$ 72.7 $ 1,952,761$ $8,517,055$ Furniture $29,144$ $20,557$ $3,557$ $24,114$ 82.7 $19,101$ 105 $3,589$ $22,575$ Planing mills, sush and door $57,972$ $34,235$ $5,039$ $57,274$ 64.3 $25,543$ 300 $2,838$ $28,65$ Pulp and paper $1,990,807$ $1,260,430$ $401,778$ $1,662,268$ 83.5 $4,689,472$ $1,647,917$ $1,851,288$ $8,168,66$ Aww mills $459,341$ $50,455$ $66,254$ $116,689$ 25.4 $44,027$ 85 $82,439$ $126,557$	PRODUCTS	257,402	207,564	29,316	236,880	92.0	457,905	15,679	84,899	558,483
Hosiery and knitted goods $21,552$ $14,003$ $4,102$ $18,105$ 84.9 $20,642$ 7 $4,455$ $51,00$ Silk and artificial silk $38,137$ $28,232$ $8,140$ $56,372$ 95.4 $102,554$ $5,372$ $26,493$ $134,4$ Koollen cloth goods $18,557$ $16,504$ 465 $10,969$ 91.4 $28,752$ $ 1,142$ $29,8$ GROUP 4. NOOD & PAPER PRODUCTS x $2,945,242$ $1,557,565$ $509,685$ $2,067,250$ 72.7 $ -$ Furniture $29,144$ $20,557$ $3,557$ $24,114$ 82.7 $19,101$ 105 $3,589$ 22.5 Planing mills, sush and door $57,972$ $34,235$ $5,039$ $57,274$ 64.3 $25,543$ 300 $2,838$ $28,66$ Pull and paper $1,990,807$ $1,260,430$ $401,778$ $1,662,268$ 83.5 $4,689,472$ $1,647,917$ $1,881,288$ $8,168,66$ Aw mills $459,341$ $50,455$ $66,234$ $116,689$ 25.4 $44,027$ 85 $82,439$ $126,439$	Cotton yurn and cloth	107,893	88,302	10,901	99,205	91.9	208,032	10,289	45,204	261,525
Silk and artificial silk 38,137 28,232 8,140 36,372 95.4 102,554 5,372 26,493 134,4 Woollen cloth goods 18,557 16,504 465 16,969 91.4 28,752 - 1,142 29,6 GROUP 4. WOOD & PAPER PRODUCTS x 2,845,242 1,557,565 509,685 2,067,250 72.7 - 1,932,761 8,517,0 Furniture 29,144 20,557 3,557 24,114 82.7 19,101 105 3,569 22,57 Planing mills, snsh and door 57,972 34,235 3,039 37,274 64.3 25,543 3000 2,838 28,65 Printing and publishing 28,050 27,482 799 28,281 100.9 36,259 61.9 156 37,55 Puly and paper 1,990,807 1,260,490 401,778 1,662,268 83.5 4,689,472 1,647,917 1,851,288 8,168,6 Auw mills 459,341 50,455 66,234 116,689 25.4 44,027 85 82,439 126,55	Hosiery and knitted goods	21,552	14,003	4,102	18,105	84.9	20,642	7	4,455	31,082
Woollen cloth goods18,55716,50446516,96991.428,752-1,14229,8CROUP 4. WOOD & PAPER PRODUCTS x 2,691,1072,845,2421,557,565509,6852,067,25072.7<	Silk and artificial silk	38,137	28,232	8,140	36,372	95.4	102,554	5,372		134,419
2,691,1071,489,233485,0521,974,28573.44,935,0711,649,2171,932,7618,517,0Furniture29,14420,5573,55724,11482.719,1011053,58922,7Planing mills, sash and door57,97234,2353,039\$7,27464.325,5433002,83828,68Printing and publishing28,05027,48279928,281100.936,25961915637,030Pulp and paper1,990,8071,260,490401,7781,662,26883.54,689,4721,647,9171,851,2888,168,63Gaw mills459,34150,45566,234116,68925.444,0278582,439126,53	Woollen cloth goods	18,557	16,504	465	16,969	91.4	28,752	-		29,894
2,691,1071,489,233485,0521,974,28573.44,935,0711,649,2171,932,7618,517,0Furniture29,14420,5573,55724,11482.719,1011053,58922,7Planing mills, sash and door57,97234,2353,039\$7,27464.325,5433002,83828,68Printing and publishing28,05027,48279928,281100.936,25961915637,030Pulp and paper1,990,8071,260,490401,7781,662,26883.54,689,4721,647,9171,851,2888,168,63Gaw mills459,34150,45566,234116,68925.444,0278582,439126,53										
Furniture 29,144 20,557 3,557 24,114 82.7 19,101 105 3,589 22,7 Planing mills, sush and door 57,972 34,235 3,039 37,274 64.3 25,543 300 2,838 28,68 Printing and publishing 28,050 27,482 799 28,281 100.9 36,259 619 156 37,0 Pulp and paper 1,990,807 1,260,490 401,778 1,662,268 83.5 4,689,472 1,647,917 1,851,288 8,168,6 Auw mills 459,341 50,455 66,234 116,689 25.4 44,027 85 82,439 126,5	GROUP 4. KOOD & PAPER PRODUCTS x	2,845,242	1,557,565	509,685	2,067,250			1		
Planing mills, sash and door 57,972 34,235 3,039 37,274 64.3 25,543 300 2,838 28,6 Printing and publishing 28,050 27,482 799 28,281 100.9 36,259 619 156 37,0 Pulp and paper 1,990,907 1,260,490 401,778 1,662,268 83.5 4,689,472 1,647,917 1,851,288 8,168,6 Auw mills 459,341 50,455 66,234 116,589 25.4 44,027 85 82,439 126,5		2,691,107	1,489,233	485,052	1,974,285	73.4	4,935,071	1,649,217	1,932,761	8,517,049
Printing and publishing 28,050 27,482 799 28,281 100.9 36,259 619 156 37,0 Pulp and paper 1,990,807 1,260,450 401,778 1,662,268 83.5 4,689,472 1,647,917 1,851,288 8,168,6 Gaw mills 459,341 50,455 66,234 116,689 25.4 44,027 85 82,439 126,5	Furniture	29,144	20,557	3,557		82.7	19,101	105	3,589	22,795
Pulp and paper 1,990,807 1,260,400 401,778 1,662,268 83.5 4,689,472 1,647,917 1,851,288 8,168,6 Gaw mills 459,341 50,455 66,234 116,689 25.4 44,027 85 82,439 126,53	Planing mills, sish and door	57,972	34,235				25,543	300	2,838	28,681
Asw mills 459,341 50,455 66,234 116,689 25.4 44,027 85 82,439 126,5	Printing and publishing	28,030	27,482	799	28,281	100.9	36,259	619	156	37,034
	Pulp and paper	1,990,807	1,260,490	401,778	1,662,268	83.5	4,689,472	1,647,917	1,851,288	8,168,677
	Sew mills	459,341	50,455	66,234	116,589	25.4	44,027	85	82,439	126,551
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Table 4

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						in the first		la la persona	
GROUP 5. IRON AND ITS PRODUCTS x	1,260,802	1,021,881	123,562	1,145,443	90.9				
	1,167,371	977,066	120,868	1,097,954	94.1	1,449,340	1,188,770	246,257	2,884,367
Agricultural implements	29,474	26,854	-	20,834	91.0	48,396	-	-	48,396
Aircreft	39,437	38,329	-	38,329	97.2	130,311	2,109	-	132,420
Automobiles	64,130	19,222	37,910	57,132	89.1	31,792		84,526	116,318
Automobile supplies	67,253	66,739	-	66,739	99.2	112,224	26,558	-	138,782
Bridge and structural steel	35,213	32,046	-	32,046	91.0	35,115	-	-	35,115
Castings, iron	57,705	55,784	1,125	56,909	98.6	72,605	470	150	73,225
Iron and steel products	126,938	124,614	94	124,708	98.2	164,112	144		164,256
Machinery	77,919	73,694	5,350	79,044	101.4	64,289	32	-	64,321
Primary iron and steel	290,211	208,888	54,474	265,362	90.7	314,080	1,149,228	141,285	1,604,593
Railway rolling stock	122,788	105,845	9,744	115,589	94.1	128,309	2,540	15,368	144,217
Shipbuilding and repairs	117,196	93,498	3,496	96,994	82.8	146,273	-	93	146,366
GROUP 6. NON-FERROUS METAL x	656,664	567,754	22,651	590,405	89.9				
PRODUCTS	600,831	520,647	19,894	540,541	90.0	1,238,352	9,588,942	271,680	11,098,974
Aluminium products	37,835	37,615	_	37,615	99.4	41,078	61,085	-	102,163
Brass and copper products	75,926	75,426	_	75,426	99.3	81,581	70,453		152,034
Electrical apparatus and supplies	98,287	86,227	13,602	99,829	101.6	124,826	3,751	13,923	142,500
Non-ferrous smelting and refining	374,556	307,159	6,292	313,451	83.7	974,507	9,453,652	257,757	10,685,916
GROUP 7. NON-METALLIC MINERAL x	316,177	244,311	9,486	253,799	80.3	and the second			
PRODUCTS	276,788	216,553	8,906	225,459	81.5	429,720	1,035,688	17,353	1,482,761
Abrasive products	13,446	13,396	-	13,396	99.6	20,229	784,486	-	804,715
Cement	73,780	77,304	1,193	78,497	98.4	137,259	-	-	137,259
Clay products - domestic clay	18,306	11,938	234	12,172	66.5	13,318	100	-	13,418
Coke and gas products	29,919	18,917	3,945	22,862	76.4	51,709	12,428	9,118	73,255
Petroleum products	70,631	36,767	279	37,046	52.5	101,135	-	381	101,516
GROUP 8. CHEMICALS AND CHEMICAL x	377,448	319,430	23,856	343,286	90.9			100	
PRODUCTS	\$45,891	295,118	22,721	317,839	91.9	1,524,323	1,410,597	118,935	3,053,855
Acids, alkalies and salts	156,765	126,584	12,085	138,669	88.5	644,804	1,386,289	108,658	2,139,751
Fertilizers	30,378	30,228	-	30,228	99.5	611,431		100,000	611,431
Let CITIVELS	00,010					,			Unajica
GROUP 9. MISCELLANEOUS INDUSTRIES x	37,570	34,023	2,926	36,949	98.3				
	35,192	32,934	2,469	35,403	100.6	71,620	41	the Electron	71,661
Artificial ice	11,950	11,900	604	12,504	104.6	39,626	-	-	39,626
	0.400.400	4 477 000	770 73 7	5 917 017	90.6				
TOTAL ALL INDUSTRIES - 1944 x	6,468,459	4,437,296	779,717	5,217,013 4,929,598	80.6 81.7	10,847,334	14,929,905	2,752,125	20 500 504
	6,034,222	4,188,070	741,528			10,017,004	14,048,000	فتهدو تافته وتد	28, 529, 564
<u>1943</u> x	6,415,851	4,420,105	760,630	5,180,735	80.7	10 405 505	15 004 007		
	6,009,521	4,196,534	715,377	4,911,911	81.7	10,495,523	15,904,207	3,211,609	29,611,339

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x - Including equipment idle or reserve. These totals are comparable with data in reports prior to 1936.

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POWER EMPLOYED IN MANUFACTURING INDUSTRIES, BY PROVINCES, 1944

(In Regular Use)

		Electric	e Motors Operat	ted		Consumption of Electricity					
Provinces	Total Power Employed	By Central Electric Station	By Power Generated in the	Total Motor Capacity	Electric Power Per Cent of Total	Purchase Central Elec For Power and Lighting	ed from tric Stations For Other Purposes	Generated by the Industries	Total		
	H.P.	Power H.P.	Industries H.P.	H.P.	P.C.		Thousands of ki	lowatt hours)			
D Inc. Diment Talana				1,021	23.0	935			935		
Prince Edward Island	4,441	1,021					-	-			
Nova Scotia	183,389	88,619	64,456	153,075	83.5	208,754	1,544	115,375	325,673		
New Brunswick	225,448	123,548	52,429	175,977	78.1	352,784	10,882	204,128	567,794		
Quebec	2,147,944	1,586,579	166,032	1,752,611	81.6	13,145,294	2,433,453	1,011,555	16,590,302		
Ontario	2,527,768	1,850,290	297,267	2,147,357	85.0	4,149,062	2,805,219	1,005,286	7,959,567		
Manitoba	163,312	137,716	5,171	142,887	87.5	341,573	215,055	8,631	565,259		
Saskatchewan	77,383	42,814	269	43,083	55.7	267,356	15	-	267,371		
Alberta	133,715	87,010	5,551	92,561	69.2	235,825	26	5,803	241,654		
British Columbia	570,305	270,465	150,353	420,818	73.8	1,599,382	10,057	401,346	2,010,785		
Yukon & N.W.Territorie	es 517	8	-	8	15.5	16	-	-	16		
Total	6,034,222	4,188,070	741,528	4,929,598	81.7	20,300,981	5,476,251	2,752,124	28,529,356		
			Inclusion	ng Idle and Rese	erve Equipment						
Prince Edward Island	4,874	1,162		1,162	23.8						
Nova Scotia	193,060	91,980	65,400	157,380	81.5						
New Brunswick	255,262	130,426	56,847	187,273	73.4						
Quabec	2,288,183	1,686,492	176,475	1,862,967	81.4						
Ontario	2,715,516	1,948,635	315,975	2,264,610	83.4						
Mani toba	171,022	144,078	5,773	149,851	87.5			13			
Saskatchewan	85,347	45,118	304	45,422	53.2						
Alberta	145,461	94,170	6,150	100,320	69.0						
British Columbia	609,097	295,225	152,793	448,018	73.6						
	1	-		10	1.6						
Yukon & N.W. Territorie	617	10	-	10	2.00						

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POWER EXVIPMENT - IN REGULAR USE AND INCLUDING IDLE AND RESERVE EQUIPMENT, 1944

					PLAN	USACTURING	INDUSTRIES							
	TOTAL POWI	ER EMPLOYED		FLE	CTRIC MOTOR	S OPERATED	BY		ELECTRIC	POWER	(CONSUMPTION C	OF ELECTRICIT	Y
Industry	In Regular	Incl.Idle		Station		enerated ndustries	Tot		Per C of To			from Central Stations	Generated by	Total
	Use	Equipment	In Regular Use	Incl.Idle & Reserve	In Regular Use	Incl.Idle & Reserve	In Kegular Use	Incl.Idle & Reserve		Incl.Idle	For Power & Lighting	For Other Purposes	the Industries	
	A H.P.	B H.P.	C H.P.	D H.P.	E H.P.	F Н.Р.	G H.P.	н н.Р.	I P.C.	J P.C.	K (Th	L iousands of K	M 11owatt Hour	й в)
1. Vegetable Products	482,048	508,075	308,634	325,186	48,767	52,949	357,401	378,135	74.1	74.4	491,989	831	75,511	568,55
. Animal Products	177,592	189,159	140,321	146,869	3,515	3,616	143,836	150,485	80.9	79.5	249,014	40,140	4,729	295,80
. Textiles and Textile Products	257,402	277,304	207,564	220,277	29,316	30,984	236,880	251,261	92.0	90.6	457,905	15,679	84,899	558,48
. Wood & Paper	2,691,107	2,845,242	1,489,233	1,557,565	485,052	509,685	1,974,285	2,067,250	73.4	72.7	4,935,071	1,649,217	1,952,761	8,517,04
5. Iron and its "	1,167,371	1,260,802	977,066	1,021,881	120,888	123,562	1,097,954	1,145,443	94.1	90.9	1,449,340	1,188,770	246,257	2,884,36
. Non-ferrous Hetel Products	600,831	656,664	520,647	567,754	19,894	22,651	540,541	590,405	90.0	89.9	1,238,352	9,588,942	271,680	11,098,97
. Non-metallic Mineral Products	276,788	316,177	216,553	244,311	8,906	9,488	225,459	253,799	81.5	80.3	429,720	1,035,688	17,353	1,482,70
Chemicals and Chemical Products	345,891	377,448	295,118	319,430	22,721	23,856	317,639	343,286	91.9	90.9	1,524,323	1,410,597	118,955	3,053,8
. Miscellaneous Industries	35,192	37,570	32,934	34,023	2,469	-	35,403	36,949	100.6	98.3	71,620	41	-	71,6
Total - 1944	6,034,222	6,468,439	4,188,070	4,437,296	741,528	779,717		5,217,013	81.7	80.7	10,847,334	14,929,905	2,752,125	28,529,3
1943	6,009,521	6,415,851	4,196,534	4,420,105	715,377	760,630		5,180,735	81.7	80.7	10,495,523	15,904,207	3,211,609	29,611,3
Per cent change	+ 4.1	+ 8.2	- 2.0	+ 3.9	+ 3.7	+ 4.5	+ 3.6	+ 9.9			+ 3.3	- 6.1	- 14.5	- 3.
able 7		1				MINING IN	USTRIES							
letal Mining	491,173	555,736	417,158	456,017	47,405	55,762	464,563	511,779	98.6	92.1	1,964,558	-	145,886	2,110,44
on-metal Mining	90,686	99,061	69,205	73,878	3,645	4,280	72,850	78,158	80.3	78.9	164,162	-	10,547	174,7
and, Gravel & Stone	49,253	55,382	27,686	31,961	2,200	2,200	29,886	34,161	60.7	61.7	24,687	-	444	25,1
uels	248,147	265,006	121,154	125,796	23,564	24,316	144,718	150,112	58.3	56.6	167,821		53,677	221,4
Total - 1944	879,259	975,185	635,203	687,652	76,814	86,558	712,017	774,210	81.0	79.4	2,321,228	-	210,554	2,531,7
1943	891,303	988,457	647,358	695,109	80,802	105,438	728,160	800,545	81.7	81.0	1,638,661	7,408	248,848	1,894,9
Par cant change	- 1.4	- 1.3	- 1.3	- 1.1	- 4.9	- 1.8	- 2.2	- 3.3			+ 4.2	-	- 1.5	+ 5
otals Tables 6 & 7					MANUFAC	TURING AND	MINING INDU	ISTRIES				•		
1944	6,913,481	7,443,624	4,823,273	5,124,948	818,342	866,275	5,641,615	5,991,223	81.6	80.5	13,168,562	14,929,905	2,962,679	31,061,1
1943	6,900,824	7,404,308	4,843,892	5,115,214	796,179	866,066	5,640,071	5,981,280	81.7	80.8	12,134,184	15,911,615	5,460,457	51,506,2
Per cent change	+ 1.8	+ 5.3	- 4.3	+ 1.9	+ 2.3	- 1.8	+ 2.7	+ 4.2			+ 8.5	- 6.2	- 14.4	- 1

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MANUFACTURING INDUSTRIES

TOTAL POWER EQUIPMENT - TOTAL EXPLOYEES

Average Horse power per Employee

	4											
	1923	1929	1951	1935	1935	1937	1959	1940	1941	1942	1943	1944
Power Employed - H.	P.						-	12 11 1		-		
Vegetable Products	257,176	326,346	322,401	326,666	331,361	347,002	364,195	376,319	402,441	405,076	414,953	508,073
Animal "	80,895	101,268	98,892	112,035	122,560	133,647	145,931	151,321	163,917	165,682	179,322	189,159
Textiles & Textile "	107,850	168,614	186,952	215,907	240,549	211,729	234,597	246,054	251,916	258,679	266,854	277,304
Wood & Paper "	1,146,571	2,022,839	2,126,398	2,035,112	2,160,083	2,420,436	2,579,463	2,677,502	2,772,081	2,742,314	2,766,491	2,845,242
Iron and its "	213,705	529,162	589,261	626,730	660,491	719,265	730,594	763,195	963,548	1,056,870	1,209,202	1,260,802
Non-ferrous Metal "	99,963	351,752	424,738	434,581	416,927	472,031	549,120	598,106	673,480	656,415	701,970	656,664
Non-metallic Mineral Products	131,780	210,804	212,179	219,612	222,555	239,898	257,731	270,534	285,820	289,332	314,221	316,177
Chemicals & Allied	62,447	83,935	96,893	110,873	130,464	141,755	158,300	179,741	302,746	354,314	525,762	377,448
Industries	46,516	73,259	56,963	66,315	61,785	26,520	27,361	28,163	34,127	32,107	37,096	37,570
Total	2,146,903	3,867,979	4,114,677	4,147,831	4,346,775	4,712,283	5,047,292	5,290,935	5,850,076	5,969,895	6,415,851	6,468,439
Employees Vegetable Products	65 395	98 959	77 706	73 095	79 285	94 258	99 447	103 634	113 753	115 476	117 945	150 070
0											-	130,679 94,195
Textiles & Textile	92,669	115,620	105,473	106,235	120,699	121,677	121,022	138,973		1	-	153,122
Wood & Paper	128,404	164,800	121,672	105,471	123,724	147,254	144,782	160,868	179,967	186,106	183,865	189,674
Iron and its	88,071	132,281	96,927	70,947	95,426	127,148	121,041	164,325	253,701	360,845	435,744	411,944
Non-ferrous Metal	21,409	39,867	34,414	25,273	33,613	44,614	44,563	54,317	73,450	90,937	109,522	104,314
Non-metallic Mineral Products	24,978	31,431	24,895	19,296	23, 342	23,837	23,026	25,415	28,829	30,707	30,994	51,590
	15,149	16,694	15,207	15,397	18,933	21,968	22,595	27,682	54,014	93,030	92,288	81,822
Miscellaneous Industries	16,581	21,049	12,821	10,361	12,270	11,699	12,280	13,364	18,441	22,474	25,388	25,542
Total	514,173	678,270	540,412	479,186	567,416	660,451	658,114	762,244	961,178	1,152,091	1,241,068	1,222,882
Average Horse power o	f Equipment	in Manufac	turing Indu	stries per	Employee							
Vegetable Products	3.9	3.7	4.1	4.5	3.9	3.7	3.7	3.6	3.5	3.5	3.5	3.9
Animal Products	1.3	1.5	1.9	2.1	2.0	2.0	2.1	2.1	2.0	1.9	2.0	2.0
Textiles & Textile Products	1.2	1.5	1.8	2.0	1.9	1.7	1.9	1.8	1.6	1.6	1.7	1.8
Wood & Paper "	8.9	12.3	17.5	19.3	16.8	16.4	17.8	16.7	15.4	14.7	15.1	15.0
Iron and its - "	2.4	4.0	6.1	8.8	6.3	5.7	6.0	4.6	3.8	2.9	2.8	3.1
Non-ferrous Metal "	4.7	8.8	12.3	17.2	12.5	10.6	12.3	11.0	9.2	7.2	6.4	5.3
Non-metallic Mineral Products	5.3	6.7	8.5	11.4	10.8	10.1	11.2	10.6	9.9	9.4	10.1	10.0
Chemicals & Allied	4.1	5.0	6.4	7.2		6.5		6.5	5.6	3.8	5.7	4.6
												1.5
Total	4.2	5.7	7.6	8.7	7.5	7.1	7.7	6.9	6.1	5.2	5.2	5.3
	Vegetable Products Animal " Textiles & Textile " Wood & Paper " Iron and its " Non-ferrous Metal " Non-metallic Mineral " Miscellaneous Industries Total " Baployees Yegetable Vegetable Products Animal " Total " Mon-metallic Mineral " Wood & Paper " Iron and its " Non-ferrous Metal " Mood & Paper " Iron and its " Non-ferrous Metal " Miscellaneous " Irotal " Miscellaneous " Miscellaneous " Industries " Average Horse power of Yegetable Products Animal Products " Total " Mood & Paper " Iron and its " Non-ferrous Metal "	Fower Employed - E. Vegetable Products 257,176 Animal " 80,895 Textiles & Textile 107,850 Wood & Paper " 1,146,571 Iron and its " 213,705 Non-ferrous Metal 99,963 Non-ferrous Metal 99,963 Non-ferrous Metal 99,963 Non-metallic Mineral 151,760 Products 62,447 Miscellaneous 46,516 Industries 46,516 Total 2,146,903 Employees 46,516 Yegetable Products 65,395 Animal " 12,409 Non-ferrous Metal 128,404 Iron and its 88,071 Non-ferrous Metal 21,409 Non-ferrous Metal 24,978 Troducts 16,561 Miscellaneous 16,561 Industries 16,561 Miscellaneous 16,561 Industries 3.9 Animal Products 3.9 Animal Products 3.9 <td< td=""><td>Power Employed - E. F. Vegetable Products 257,176 326,346 Animal * 80,895 101,268 Textiles & Textile 107,850 168,614 Wood & Paper * 1,146,571 2,022,839 Iron and its * 213,705 529,162 Non-ferrous Metal 99,963 351,752 Non-metallic Mineral 151,760 210,804 Products 62,447 83,935 Miscellaneous 151,760 210,804 Industries 46,516 73,259 Total 2,146,903 5,867,979 Employees - - Vegetable Products 65,535 88,858 Animal 61,517 67,670 Tartiles & Textile 92,669 115,620 Wood & Paper 128,404 164,600 Iron and its 88,071 132,281 Non-ferrous Metal 24,978 31,431 Products 5.94 31,431 Miscellaneous 1.63 1.5</td><td>Fower Employed - H. P. No. No. Vegetable Products 257,176 326,546 322,401 Animal 80,895 101,268 98,892 Tertiles & Textile 107,850 168,614 186,952 Wood & Paper 1,146,571 2,022,839 2,126,398 Iron and its 215,705 529,162 568,261 Non-ferrous Metal 99,963 351,752 424,738 Non-metallic Mineral 151,760 210,804 212,179 Products 62,447 83,935 96,893 Miscellaneous 151,760 210,804 212,179 Products 65,395 88,958 77,706 Animal 61,517 67,670 51,297 Textiles & Textile 92,669 115,620 105,473 Wood & Paper 128,404 164,800 121,672 Iron and its 88,071 132,281 96,927 Non-ferrous Metal 15,149 16,694 15,207 Miscellaneous 16,561 21</td><td>Power Employed - H. P. Rest Rest Rest Rest Yegetable Products 257,176 326,546 522,401 526,666 Animal " 80,895 101,268 99,932 112,035 Textiles & Textile 107,650 168,614 186,952 215,907 Wood & Paper 1,146,571 2,022,639 2,126,398 2,035,112 Iron and its " 213,705 529,162 589,261 626,730 Non-ferrous Metal 99,963 551,752 424,738 434,561 Mon-aetallic Mineral Industries 46,516 73,259 56,963 616,515 Miscellaneous Industries 46,516 73,259 56,963 66,515 Miscellaneous Miscellaneous 61,517 67,670 51,227 55,111 Tratiles & Textile 92,669 115,620 105,473 106,235 Mod & Paper 128,404 164,600 121,672 105,473 Iron and its 88,971 132,281 66,927 70,947</td><td>Power Employed - H. P. Line Line Line Line Line Line Power Employed - H. P. 257,176 326,546 522,401 526,666 531,561 Animal 30,995 101,268 96,992 112,035 122,560 Textiles & Textile * 107,9572 2,022,839 2,126,398 2,055,112 2,160,085 Iron and its 213,705 529,162 569,261 626,730 660,491 Non-ferrous Metal 99,963 351,752 424,738 434,561 416,927 Non-metallic Mineral 151,760 210,804 212,179 219,612 222,555 Products 65,515 366,953 100,873 130,464 Miscellameous 46,516 75,229 56,963 66,315 61,785 Total 2,146,903 3,867,979 4,114,677 4,147,851 4,346,775 Miscellameous 61,517 67,670 51,297 75,911 60,124 Total 2,146,903 39,667 34,414 <t< td=""><td>Power Employed F. F.</td><td>Power Employed H. F. F.</td><td>Power Exployed - E. F. vegetable Product257,176S26,546S22,401S26,566S31,581S47,002564,195S76,519Animal80,995101,26896,992112,085122,560133,647145,981151,521Tarklies & Textlie107,850166,014186,952212,070240,549211,7282254,597246,054Food & Paper1,146,572,022,3892,126,5982,165,7882,670,0082,420,5452,579,6452,677,502Iron and its135,78020,004212,179219,61222,555253,989257,781270,554ProductProduct151,780210,004212,179219,61222,555253,989257,781270,554Rinealis & Allied62,44783,92596,983110,973130,464411,755158,300179,711Miccallamoous46,51675,25556,96566,51561,78524,56599,44725,989Miccallamoous46,51675,25556,96565,51561,78524,95699,447105,634Minellame61,51767,67051,29755,11160,128447,255160,968120,698Product65,95588,95677,70675,00579,28594,25699,447105,634Minellamoous15,269115,629105,473106,254120,628120,698121,671120,628Nond & Paper126,401164,600121,671105,473106,635124,698</td></t<><td>Downer Exployed E.r. Number Date <thdate< th=""> Date Date<td>Dame Dame <thdame< th=""> Dame Dame <thd< td=""><td>Inter Inter <th< td=""></th<></td></thd<></thdame<></td></thdate<></td></td></td<>	Power Employed - E. F. Vegetable Products 257,176 326,346 Animal * 80,895 101,268 Textiles & Textile 107,850 168,614 Wood & Paper * 1,146,571 2,022,839 Iron and its * 213,705 529,162 Non-ferrous Metal 99,963 351,752 Non-metallic Mineral 151,760 210,804 Products 62,447 83,935 Miscellaneous 151,760 210,804 Industries 46,516 73,259 Total 2,146,903 5,867,979 Employees - - Vegetable Products 65,535 88,858 Animal 61,517 67,670 Tartiles & Textile 92,669 115,620 Wood & Paper 128,404 164,600 Iron and its 88,071 132,281 Non-ferrous Metal 24,978 31,431 Products 5.94 31,431 Miscellaneous 1.63 1.5	Fower Employed - H. P. No. No. Vegetable Products 257,176 326,546 322,401 Animal 80,895 101,268 98,892 Tertiles & Textile 107,850 168,614 186,952 Wood & Paper 1,146,571 2,022,839 2,126,398 Iron and its 215,705 529,162 568,261 Non-ferrous Metal 99,963 351,752 424,738 Non-metallic Mineral 151,760 210,804 212,179 Products 62,447 83,935 96,893 Miscellaneous 151,760 210,804 212,179 Products 65,395 88,958 77,706 Animal 61,517 67,670 51,297 Textiles & Textile 92,669 115,620 105,473 Wood & Paper 128,404 164,800 121,672 Iron and its 88,071 132,281 96,927 Non-ferrous Metal 15,149 16,694 15,207 Miscellaneous 16,561 21	Power Employed - H. P. Rest Rest Rest Rest Yegetable Products 257,176 326,546 522,401 526,666 Animal " 80,895 101,268 99,932 112,035 Textiles & Textile 107,650 168,614 186,952 215,907 Wood & Paper 1,146,571 2,022,639 2,126,398 2,035,112 Iron and its " 213,705 529,162 589,261 626,730 Non-ferrous Metal 99,963 551,752 424,738 434,561 Mon-aetallic Mineral Industries 46,516 73,259 56,963 616,515 Miscellaneous Industries 46,516 73,259 56,963 66,515 Miscellaneous Miscellaneous 61,517 67,670 51,227 55,111 Tratiles & Textile 92,669 115,620 105,473 106,235 Mod & Paper 128,404 164,600 121,672 105,473 Iron and its 88,971 132,281 66,927 70,947	Power Employed - H. P. Line Line Line Line Line Line Power Employed - H. P. 257,176 326,546 522,401 526,666 531,561 Animal 30,995 101,268 96,992 112,035 122,560 Textiles & Textile * 107,9572 2,022,839 2,126,398 2,055,112 2,160,085 Iron and its 213,705 529,162 569,261 626,730 660,491 Non-ferrous Metal 99,963 351,752 424,738 434,561 416,927 Non-metallic Mineral 151,760 210,804 212,179 219,612 222,555 Products 65,515 366,953 100,873 130,464 Miscellameous 46,516 75,229 56,963 66,315 61,785 Total 2,146,903 3,867,979 4,114,677 4,147,851 4,346,775 Miscellameous 61,517 67,670 51,297 75,911 60,124 Total 2,146,903 39,667 34,414 <t< td=""><td>Power Employed F. F.</td><td>Power Employed H. F. F.</td><td>Power Exployed - E. F. vegetable Product257,176S26,546S22,401S26,566S31,581S47,002564,195S76,519Animal80,995101,26896,992112,085122,560133,647145,981151,521Tarklies & Textlie107,850166,014186,952212,070240,549211,7282254,597246,054Food & Paper1,146,572,022,3892,126,5982,165,7882,670,0082,420,5452,579,6452,677,502Iron and its135,78020,004212,179219,61222,555253,989257,781270,554ProductProduct151,780210,004212,179219,61222,555253,989257,781270,554Rinealis & Allied62,44783,92596,983110,973130,464411,755158,300179,711Miccallamoous46,51675,25556,96566,51561,78524,56599,44725,989Miccallamoous46,51675,25556,96565,51561,78524,95699,447105,634Minellame61,51767,67051,29755,11160,128447,255160,968120,698Product65,95588,95677,70675,00579,28594,25699,447105,634Minellamoous15,269115,629105,473106,254120,628120,698121,671120,628Nond & Paper126,401164,600121,671105,473106,635124,698</td></t<> <td>Downer Exployed E.r. Number Date <thdate< th=""> Date Date<td>Dame Dame <thdame< th=""> Dame Dame <thd< td=""><td>Inter Inter <th< td=""></th<></td></thd<></thdame<></td></thdate<></td>	Power Employed F. F.	Power Employed H. F. F.	Power Exployed - E. F. vegetable Product257,176S26,546S22,401S26,566S31,581S47,002564,195S76,519Animal80,995101,26896,992112,085122,560133,647145,981151,521Tarklies & Textlie107,850166,014186,952212,070240,549211,7282254,597246,054Food & Paper1,146,572,022,3892,126,5982,165,7882,670,0082,420,5452,579,6452,677,502Iron and its135,78020,004212,179219,61222,555253,989257,781270,554ProductProduct151,780210,004212,179219,61222,555253,989257,781270,554Rinealis & Allied62,44783,92596,983110,973130,464411,755158,300179,711Miccallamoous46,51675,25556,96566,51561,78524,56599,44725,989Miccallamoous46,51675,25556,96565,51561,78524,95699,447105,634Minellame61,51767,67051,29755,11160,128447,255160,968120,698Product65,95588,95677,70675,00579,28594,25699,447105,634Minellamoous15,269115,629105,473106,254120,628120,698121,671120,628Nond & Paper126,401164,600121,671105,473106,635124,698	Downer Exployed E.r. Number Date Date <thdate< th=""> Date Date<td>Dame Dame <thdame< th=""> Dame Dame <thd< td=""><td>Inter Inter <th< td=""></th<></td></thd<></thdame<></td></thdate<>	Dame Dame <thdame< th=""> Dame Dame <thd< td=""><td>Inter Inter <th< td=""></th<></td></thd<></thdame<>	Inter Inter <th< td=""></th<>

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