

June 1, 2005

To: Renewable Energy/Alternative Energy Work Group, Capacity Needs Forum
From: Loch McCabe, Shepherd Advisors

Re: Summary of Michigan CHP Supply Curve Analysis

The purpose of this analysis is to estimate the amount of (1) current CHP deployed in Michigan, and (2) additional potential for CHP load, primarily from industrial sources. The primary data sources for this analysis was the Michigan Boiler Permit database, the E-Grid database, the Midwest CHP Applications Center's database, and consultations with Mr. Donald Johns (MIPPA) and Mr. Kurt Koseck (CMS Energy).

Current CHP in Michigan

There is an estimated 4,580 MW of CHP currently installed in Michigan. Of this, 2419 MW (52%) of CHP is at the Midland Cogen Venture and the Dearborn Industrial Generation sites, serving DOW and Ford Motor Company respectively. An additional 990 MW (22%) of installed CHP capacity is at eight different utility-owned sites. The installed base of remaining 26% of Michigan's CHP capacity can be broken down into sectors as follows:

<u>Sector</u>	<u>CHP MW</u>
Pulp and Paper	209 MW
Educational	132 MW
Other Automotive	63 MW
Other Industrial	67 MW
Municipalities	17 MW
Hospitals	5 MW

Note: See Table 3.

Potential for Supply of Additional Base Load CHP Capacity in Michigan

We estimate more conservatively that the amount of CHP that can be tapped for base load is approximately 1,000 MW per year. This estimated potential supply of additional base load CHP was developed only based upon existing boiler capacity, i.e. where existing steam loads are available that could also be utilized to generate power. In particular, the analysis assessed boilers that installed before 2000, have pressures of at least 150 PSI, and have steam loads of at least 25,000 lbs/hour.

The analysis suggests that there is as much as 1471 MW of additional base load capacity for CHP if potential boilers were converted at an average rate of 20,000 lbs/hour/MW. Of this amount, the 37 companies that have large (100,000+ lbs/steam/hr) boiler have the potential to provide an estimated 1085 MW of potential CHP capacity that is broken sector is as follows:

<u>Sector</u>	<u>%</u>	<u>CHP MW Potential</u>
Automotive/Transportation	43%	466 MW
Mining/Metal Forming	18%	193 MW
Pulp/Paper	15%	159 MW
Chemical/Pharmaceutical	10%	108 MW
Food Processing	9%	99 MW
Other	6%	59 MW

Note: See Table 1.

To: Alternative Energy Group, Capacity Needs Forum
 From: Loch McCabe, Shepherd Advisors
 Date: June 2, 2005

Installed & Potential CHP Capacity Breakdown by Fuel and Service Region

Table 1. CHP MW Breakout by Service Territory and Boiler Fuel

Installed CHP Capacity	Service Territory			Current Boiler Fuel					
	DTE	CMS	UP	Coal	Gas	Oil	W. Heat	Waste	Wood
Industrial/Institutional Facilities (includes DIG, does not include Midland Cogen)	1082	187	176	103	405	85	73	13	21
Potential CHP Capacity	DTE	CMS	UP	Coal	Gas	Oil	W. Heat	Waste	Wood
Industrial/Institutional w/ Large Boilers	543	504	37	306	648	52	78	1	
Industrial/Institutional w/ Mid-sized Boilers	70	209	41	32	252	28		3	

Table 2. CHP Installed and Potential Capacity by Service Territory and Fuel Type

	Coal			Gas			Oil		
	DTE	CMS	UP	DTE	CMS	UP	DTE	CMS	UP
Installed: Industrial/Institutional Facilities (includes DIG, does not include Midland Cogen)	2	67	5	1113	39	50	0	0	67
Potential: Industrial/Institutional w/ Large Boilers	140	166	0	315	316	17	0	0	0
Potential: Industrial/Institutional w/ Mid Boilers	0	18	14	60	175	17	10	12	6

To: Alternative Energy Subgroup, Capacity Needs Forum
From: Loch McCabe, Donald Johns

Date:

6/1/2005

Approximate Average Costs (\$/kWh) for Large-Scale CHP System Installation & Operation

	CHP Coal Fired	CHP Gas Turbine	Central Plant Coal Fired
Assumptions			
Capital Installed Costs (\$/kW)	\$ 1,500	\$ 1,200	\$ 1,447
Capital Recovery Rate (%)	14%	14%	14%
Annual Operating Hours	8760	8760	8760
Capacity Factor (%)	80%	90%	80%
Efficiency for 150 PSI Steam (MMBtu/MW)	4,000	10,000	10,000
Fuel Costs \$/MMBtu	\$ 4.00	\$ 7.00	\$ 4.00
Resulting Costs per kWh			
Capital Recovery	\$ 0.030	\$ 0.021	\$ 0.029
Fuel	\$ 0.016	\$ 0.042	\$ 0.040
O&M	\$ 0.005	\$ 0.001	\$ 0.005
Average Cost of Power:	\$ 0.051	\$ 0.064	\$ 0.074

Date: June 1, 2005

To: Members, Renewable Energy/Alternative Energy Work Group, Capacity Needs Forum

From: Loch McCabe, Shepherd Advisors

Re: MICHIGAN CHP SUPPLY Estimates

Table 1. Breakdown of Utility, PURPA, Known CHP, Large and Mid Sized Boilers	No. Facilities	Steam Lbs/hr	CHP MW	CHP Ratio Lbs/hr/MW	Potential New CHP (MW) at Varying Conversion Ratios		
					20000	10,000	5,000
					Steam Lbs/MW	Steam Lbs/MW	team Lbs/MW
Utility Plants - Large Boiler w/o CHP	26	128112979	0				
Utility Plants-Large Boilers w/CHP	6	8196198	887	9246			
Merchant/Purpa Plants-Large Boilers w/o CHP	5	5635546					
Merchant/Purpa w/CHP - Midland Co-Gen Venture	1	5768832	1475	3911			
Other Merchant/Purpa Plants-Large Boiler w/CHP	7	3196685	391	8182			
Ind/Comm/Inst Facilities - DIG Only (w/CHP)	1	3291790	944	3486			
Other Ind/Comm/Inst Facilities-Large/Mid Boilers w/CHP	24	11304795	500	22614	65	631	1761
Other Ind/Comm/Inst Facilities w/CHP (no boiler data)			281				
Ind/Inst Facilities - Large Boilers w/o CHP	44	21699348			1085	2170	4340
Ind/Inst Facilities - Medium Boilers w/o CHP	145	6406523			320	641	1281
Totals:		193612696	4477	13347	1471	3441	7382

Notes: (1) Large Boilers are 100,000+ Steam Lbs/hr; (2) Mid sized boilers are 25,000-99,999 Steam Lbs/hr.; PSI >150. All boilers installed before 2000.

Sources: MI Boiler Permit Database; E-Grid; Midwest CHP Applications Ctr Database; Mr. Donald Johns.

Table 2. Ind/Comm/Inst - Large Boiler Sites - Steam Lbs/hr & CHP Potential

	AUTO	CHEM/PHAR	FOOD	HOS	IND	ORE	MUN	GOV	PULP/PAP	EDU	RES
Steam Lbs/hr Capacity	9328557	2169617	1988330	0	236214	3854830	0	0	3185560	131880	80431
No. of Facilities	7	6	5			3			13	1	
Total Steam Lbs/hr Capacity	9328557	2169617	1988330	0	236214	3854830	0	0	3185560	131880	80431
CHP Potential (@20000/kWh)	466	108	99	0	12	193	0	0	159	7	.
% of CHP Potential	43%	10%	9%	0%	1%	18%	0%	0%	15%	1%	4

Table 3. Sectors of Known Non-PURPA CHP Sites

	AUTO*	CHEM/PHAR	FOOD	HOS	IND	ORE	MUN	GOV	PULP/PAP	EDU	RES
CHP Capacity (MW)	1007.17		2	5.3	47		17.1		208.96	132.11	
% of CHP Potential	71%	0%	0%	0%	3%	0%	1%	0%	15%	9%	0

* Includes DIG

Table 4. Other CHP (Not Otherwise Accounted For)

	AUTO	CHEM/PHAR	FOOD	HOS	IND	ORE	MUN	GOV	PULP/PAP	EDU	COM
CHP Capacity (MW)	7	14	0	8	54	0	178	0	14	0	
% of CHP Potential	2%	5%	0%	3%	19%	0%	63%	0%	5%	0%	2

UTILITY-OWNED ELECTRIC-ONLY LARGE POWER BOILERS (100,000+ Lbs/hr)

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name
1948	GAS	Power Boil	950	950	600000	BC COBB PLANT	MUSKEGON	CONSUMER ENERGY VICKIE FOUNTAIN
1948	GAS	Power Boil	950	950	600000	BC COBB PLANT	MUSKEGON	CONSUMER ENERGY VICKIE FOUNTAIN
1948	GAS	Power Boil	950	950	600000	BC COBB PLANT	MUSKEGON	CONSUMER ENERGY VICKIE FOUNTAIN
1984	COAL	Power Boil	2975	2730	3412500	BELLE RIVER POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1984	COAL	Power Boil	2975	2790	3412500	BELLE RIVER POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1983	OIL	Power Boil	180	180	131320	BELLE RIVER POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1983	OIL	Power Boil	180	180	131320	BELLE RIVER POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1972	COAL	Power Boil	915	915	179446	BOARD OF LIGHT & POWER	MARQUETTE	MARQUETTE LIGHT & POWER
1974	OIL	Power Boil	350	350	225000	CMS ENERGY CORPORATION	KAM BAY	CMS ENERGY CORPORATION
1980	COAL	Power Boil	2900	2750	6000000	CONSUMERS ENERGY	OTTAWA	CONSUMER ENERGY VICKIE FOUNTAIN
1961	COAL	Power Boil	2700	2580	1750000	CONSUMERS ENERGY	OTTAWA	CONSUMER ENERGY VICKIE FOUNTAIN
1953	COAL	Power Boil	1650	1530	850000	CONSUMERS ENERGY	MONROE	CONSUMER ENERGY VICKIE FOUNTAIN
1991	NUCLR	Power Boil	985	985	5280000	CONSUMERS ENERGY	VAN BUREN	CONSUMERS ENERGY
1991	NUCLR	Power Boil	985	985	5280000	CONSUMERS ENERGY	VAN BUREN	CONSUMERS ENERGY
1976	GAS	Power Boil	2250	2070	4650000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1974	OIL	Power Boil	2250	2070	4650000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1967	COAL	Power Boil	3800	3800	2550000	CONSUMERS ENERGY	OTTAWA	CONSUMERS ENERGY
1960	COAL	Power Boil	2700	2575	1750000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1959	COAL	Power Boil	2726	2585	1750000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1957	COAL	Power Boil	2230	2230	1050000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1954	COAL	Power Boil	2300	2230	1050000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1956	COAL	Power Boil	2300	2250	1050000	CONSUMERS ENERGY	MUSKEGON	CONSUMERS ENERGY
1956	COAL	Power Boil	2300	2250	1050000	CONSUMERS ENERGY	MUSKEGON	CONSUMERS ENERGY
1952	COAL	Power Boil	1650	1650	690000	CONSUMERS ENERGY	MONROE	CONSUMERS ENERGY
1952	COAL	Power Boil	1650	1540	690000	CONSUMERS ENERGY	MONROE	CONSUMERS ENERGY
1971	NUCLR	Power Boil	2485	2485	690000	CONSUMERS ENERGY	VAN BUREN	CONSUMERS ENERGY
1971	ELECT	Power Boil	2485	2485	690000	CONSUMERS ENERGY	VAN BUREN	CONSUMERS ENERGY
1989	COAL	Power Boil	1600	1600	301000	CONSUMERS ENERGY	MANISTEE	CONSUMERS ENERGY
1973	OIL	Power Boil	350	265	225000	CONSUMERS ENERGY	BAY	CONSUMERS ENERGY
1974	NUCLEAR	Power Boil	2485	2485	2062000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1974	NUCLEAR	Power Boil	2485	2485	2062000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1974	NUCLEAR	Power Boil	2485	2485	2062000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1974	NUCLEAR	Power Boil	2485	2485	2062000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	1890000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	1890000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1974	NUCLEAR	Power Boil	2485	2485	1890000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1974	NUCLEAR	Power Boil	2485	2485	1890000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	515000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	515000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	515000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	515000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1978	NUCLEAR	Power Boil	2485	2485	515000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1971	OIL	Power Boil	250	250	150000	D C COOK NUCLEAR PLANT	BERRIEN	IND & MICHIGAN ELECT CO
1971	GAS	Power Boil	200	165	136000	DETROIT DIESEL CORP	WAYNE	DETROIT DIESEL CORP
1942	COAL	Power Boil	975	904	440000	DETROIT EDISON	ST CLAIR	DETROIT EDISON-LEGAL DEP
1972	COAL	Power Boil	4600	4600	5718000	DETROIT EDISON CO	MONROE	DETROIT EDISON-LEGAL DEP
1971	COAL	Power Boil	4600	3900	5717865	DETROIT EDISON CO	MONROE	DETROIT EDISON-LEGAL DEP
1970	COAL	Power Boil	3800	4600	5551326	DETROIT EDISON CO	MONROE	DETROIT EDISON-LEGAL DEP
1973	COAL	Power Boil	4700	4200	5150000	DETROIT EDISON CO	MONROE	DETROIT EDISON-LEGAL DEP
1968	COAL	Power Boil	2990	2715	3554000	DETROIT EDISON CO	ST CLAIR	DETROIT EDISON-LEGAL DEP
1956	GAS	Power Boil	2300	2300	1710000	DETROIT EDISON CO	WAYNE	DETROIT EDISON-LEGAL DEP
1957	COAL	Power Boil	2300	2130	1710000	DETROIT EDISON CO	WAYNE	DETROIT EDISON-LEGAL DEP
1953	COAL	Power Boil	2050	1960	1070000	DETROIT EDISON CO	ST CLAIR	DETROIT EDISON-LEGAL DEP
1954	COAL	Power Boil	2050	1960	1070000	DETROIT EDISON CO	ST CLAIR	DETROIT EDISON-LEGAL DEP

UTILITY-OWNED ELECTRIC-ONLY LARGE POWER BOILERS (100,000+ Lbs/hr)

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name
1949	COAL	Power Boil	1550	1450	600000	DETROIT EDISON CO	WAYNE	DETROIT EDISON-LEGAL DEP
1942	COAL	Power Boil	975	904	440000	DETROIT EDISON CO	ST CLAIR	DETROIT EDISON-LEGAL DEP
1946	COAL	Power Boil	975	904	440000	DETROIT EDISON CO	ST CLAIR	DETROIT EDISON-LEGAL DEP
1943	COAL	Power Boil	975	904	231200	DETROIT EDISON CO	ST CLAIR	DETROIT EDISON-LEGAL DEP
1969	OIL	Power Boil	525	207	198000	DETROIT EDISON CO	MONROE	DETROIT EDISON-LEGAL DEP
1969	OIL	Power Boil	525	207	198000	DETROIT EDISON CO	MONROE	DETROIT EDISON-LEGAL DEP
1949	OIL	Power Boil	1550	1450	660000	DETROIT EDISON PP	WAYNE	DETROIT EDISON-LEGAL DEP
1964	PULV	Power Boil	1525	1375	675000	ECKERT PLANT	INGHAM	LANSING BOARD OF WATER AND LIGHT
1972	COAL	Power Boil	2125	2000	1100000	ERICKSON STATION	EATON	LANSING BOARD OF WATER & LIGHT
1957	COAL	Power Boil	775	660	125000	ESCANABA GENERATING PLT	DELTA	UPPER PENINSULA POWER CO
1978	OILGAS	Power Boil	2873	2715	5500000	GREENWOOD POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1978	OIL	Power Boil	250	245	116102	GREENWOOD POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1978	OIL	Power Boil	250	245	106120	GREENWOOD POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1968	COAL	Power Boil	1685	1575	862000	HARBOR BEACH POWER PLANT	HURON	DETROIT EDISON-LEGAL DEP
1983	COAL	Power Boil	1825	1825	500000	J B SIMS PLT	OTTAWA	J B SIMS POWER PLANT
1968	COAL	Power Boil	1150	1150	205960	JAMES DEYOUNG POWER PLANT	OTTAWA	JAMES DEYOUNG POWER PLANT
1961	COAL	Power Boil	1050	1045	238400	JAMES DEYOUNG POWER PLT	OTTAWA	JAMES DEYOUNG POWER PLANT
1952	COAL	Power Boil	702	670	125000	JAMES DEYOUNG STEAM PLT	OTTAWA	JAMES DEYOUNG POWER PLANT
1954	COAL	Power Boil	1475	1475	380000	LANSING BOARD OF WATER & LIC	INGHAM	LANSING BOARD OF WATER & LIGHT
1982	COAL	Power Boil	1600	1600	297850	MARQUETTE BOARD OF LIGHT& P	MARQUETTE	MARQUETTE BOARD OF LIGHT & POWEF
1982	COAL	Power Boil	1450	1345	480000	MI SO CENTRAL POWER AG	HILLSDALE	MI SO CENTRAL POWER AG
1956	COAL	Power Boil	325	300	180000	MOORES PARK	INGHAM	LANSING BOARD OF WATER & LIGHT
1969	PULV	Power Boil	1550	1540	675000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1966	COAL	Power Boil	1550	1375	675000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1958	COAL	Power Boil	1425	1425	430000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1961	COAL	Power Boil	1430	1430	430000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1968	COAL	Power Boil	325	300	242000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1956	COAL	Power Boil	325	300	180000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1956	COAL	Steam Hea	325	315	180000	OTTO E ECKERT STATION	INGHAM	LANSING BOARD OF WATER LIGHT
1977	COAL	Power Boil	1800	1695	615000	PRESQUE ISLE POWER PLANT	MARQUETTE	WE ENERGIES
1977	COAL	Power Boil	1800	1695	615000	PRESQUE ISLE POWER PLANT	MARQUETTE	WE ENERGIES
1975	COAL	Power Boil	1800	1695	615000	PRESQUE ISLE POWER PLANT	MARQUETTE	WE ENERGIES
1966	COAL	Power Boil	1630	1630	375000	PRESQUE ISLE POWER PLANT	MARQUETTE	WE ENERGIES
1954	PULV	Power Boil	950	912	249070	PRESQUE ISLE POWER PLANT	MARQUETTE	WE ENERGIES
1961	COAL	Power Boil	980	980	345000	PRESQUE ISLE POWER PLT	MARQUETTE	WE ENERGIES
1974	COAL	Power Boil	1800	1800	615000	PRESQUE ISLE PWR PLT	MARQUETTE	WE ENERGIES
1956	COAL	Power Boil	2725	2622	2000000	RIVER ROUGE POWER PLANT	WAYNE	DETROIT EDISON-LEGAL DEP
1988	GAS	Power Boil	695	695	150000	RIVER ROUGE POWER PLANT	WAYNE	DETROIT EDISON-LEGAL DEP
1960	PULV	Power Boil	2770	2770	2100000	ST CLAIR POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1953	COAL	Power Boil	2050	1960	1070000	ST CLAIR POWER PLANT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1954	COAL	Power Boil	2050	2505	1070000	ST CLAIR PWR PLT	ST CLAIR	DETROIT EDISON-LEGAL DEP
1963	COAL	Power Boil	1725	1630	315000	U P GENERATING CO	MARQUETTE	WE ENERGIES
1959	GAS	Power Boil	975	915	250000	U P POWER CO	BARAGA	UPPER PENINSULA POWER CO
1957	COAL	Power Boil	775	660	125000	UP POWER CO	DELTA	UPPER PENINSULA POWER CO

Number of Large Boilers (100,000+ Lbs/hr)
Total Max Steam Lbs/hr Capacity

26
128112979

KNOWN UTILITY COGEN SITES

UTILITY-OWNED ELECTRIC-ONLY LARGE POWER BOILERS (100,000+ Lbs/hr)

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name
1993	WOOD	Power Boil	1075	1075	334085	CADILLAC RENEWABLE EN	WEXFORD	CADILLAC RENEWABLE EN
1987	WOOD	Power Boil	1060	1060	170000	HILLMAN POWER CO	MONTCALM	HILLMAN POWER CO
1989	TRASH	Power Boil	1075	950	76800	COUNTY OF KENT MI	KENT	COUNTY OF KENT MI
1989	TRASH	Power Boil	1075	1075	76800	OGDEN MARTIN SYS KENT	KENT	OGDEN MARTIN SYS KENT
1970	GAS	Power Boil	300	300	150000	COUNTY OF KENT	KENT	KENT CO DEPT PUB WORKS
1964	GAS	Power Boil	275	275	72340	COUNTY OF KENT	KENT	KENT CO DEPT PUBLIC WORKS
1964	GAS	Power Boil	275	275	72340	COUNTY OF KENT	KENT	KENT CO DEPT PUB WORKS
1964	GAS	Power Boil	275	275	72340	COUNTY OF KENT	KENT	KENT CO DEPT PUB WORKS
1964	GAS	Power Boil	275	275	70928	COUNTY OF KENT	KENT	KENT CO DEPT PUB WORKS
0	COAL	Power Boil	1550	1550	600000	TRENTON CHANNEL PLANT	WAYNE	DETROIT EDISON-LEGAL DEP
1968	COAL	Power Boil	2990	2990	3580000	TRENTON CHANNEL PWR PLT	WAYNE	DETROIT EDISON-LEGAL DEP
1948	COAL	Power Boil	1550	1550	600000	TRENTON CHANNEL PWR PLT	WAYNE	DETROIT EDISON-LEGAL DEP
1980	COAL	Power Boil	1050	1050	280628	CITY OF WYANDOTTE	WAYNE	CITY OF WYANDOTTE
1956	GAS	Power Boil	925	925	200000	CITY OF WYANDOTTE	WAYNE	CITY OF WYANDOTTE
1991	MULT	Power Boil	1075	1075	320319	CITY OF WYANDOTTE POWER PLANT	WAYNE	CITY OF WYANDOTTE
1957	GAS	Power Boil	925	925	200000	CITY POWER PLANT	WAYNE	CITY OF WYANDOTTE
2002	GAS	Power Boil	2350	2350	659809	ZEELAND GENERATION PLT	OTTAWA	ZEELAND GENERATING STATION
2002	GAS	Power Boil	2350	2350	659809	ZEELAND GENERATION PLT	OTTAWA	ZEELAND GENERATING STATION

Count 6
 Total Steam Lbs/hr 8196198

PURPA AND MERCENT PLANT SITES (boilers of 100,000+ Steam Lbs/hr)

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Type	MW
2003	WASTE	HEA Power Boiler	2690	2690	657718	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	1 MP	1170
2003	WASTE	HEA Power Boiler	2690	2690	657718	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	2690	2690	657718	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	980	980	119508	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	980	980	119508	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	980	980	119508	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	120	120	71615	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	120	120	71615	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	WASTE	HEA Power Boiler	120	120	71615	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
2003	GAS	Power Boiler	450	450	66110	COVERT GENERATING LLC	VAN BU	COVERT GENERATING LLC	MP	
1995	WASTE	Power Boiler	700	660	30000	BROWNING-FERRIS GAS SER	WAYNE	GAS RECOVERY SYSTEMS LL	1 PURPA	
1995	WOOD	Power Boiler	1550	1410	330000	GENESSEE POWER STATION	GENESE	GENESSEE POWER STATION	1 PURPA	39.5
2001	WASTE	HEA Power Boiler	1150	1150	265000	KINDER MORGAN JACKSON C	JACKSO	KINDER MORGAN JACKSON	1 MP	550
2001	WASTE	HEA Power Boiler	1150	1150	605000	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	1150	1150	265000	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	1150	1150	265000	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	1150	1150	265000	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	1150	1150	265000	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	1150	1150	265000	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	60500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2001	WASTE	HEA Power Boiler	110	110	43500	KINDER MORGAN JACKSON F	JACKSO	KINDER MORGAN JACKSON FA	MP	
2002	GAS	Power Boiler	650	600	70679	ZEELAND GENERATION PLT	ZEELAN	MIRANT ZEELAND GENERATI	1 MP	830
2002	GAS	Power Boiler	150	145	75734	ZEELAND GENERATION PLT	ZEELAN	MIRANT ZEELAND GENERATION PL	MP	

Count 5 2590
 Total STEAM LBS/hr 5635546 2176

KNOWN PURPA & MERCHANT COGEN SITES

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pr	Min Req S V	Location Name	County	Owner Name	Type	MW	Cl
1990	WASTE	Power Boiler	1125	1125	105000	ADA COGEN FACILITY 74-1A	KENT	ADA COGEN FACILITY INC	1 MP	33.1	
1990	WASTE	Power Boiler	1125	1125	105000	ADA COGEN FACILITY 74-1A	KENT	ADA COGEN FACILITY INC			
1998	GAS	Power Boiler	150	150	27600	AMWAY CORPORATION	KENT	ALTICOR			
1993	WOOD	Power Boiler	1075	1075	334085	CADILLAC RENEWABLE EN	WEXFO	CADILLAC RENEWABLE EN	1 MP	44	
1992	WOOD	Power Boiler	1550	1550	330750	GRAYLING GENERATING STA.	CRAWFC	GRAYLING GENERATING STA	1 PURPA	38	
1995	GAS	Power Boiler	550	495	220000	MICHIGAN POWER CO GENER	MASON	MICHIGAN POWER LIMITED	1 MP	154	
1995	GAS	Power Boiler	550	495	220000	MICHIGAN POWER CO GENER	MASON	MICHIGAN POWER LIMITED	MP		
1995	GAS	Power Boiler	200	200	52000	MI POWER CO GENERATOR	MASON	MICHIGAN POWER LIMITED	MP		
1995	GAS	Power Boiler	1740	1740	515000	MI POWER CO GENERATOR	MASON	MI POWER CO GENERATOR	MP		
1989	WASTE	Power Boiler	1050	1010	336410	M C V HP 03-HR-801	MIDLAN	MIDLAND COGEN VENTURE	1 MP	1475	
1989	WASTE	Power Boiler	1050	1010	336410	MCV HP 04 HR 801	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	WASTE	Power Boiler	1050	1010	336410	MCV HP 05 HR 801	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	WASTE	Power Boiler	1050	1010	336410	MCV HP 06 HR801	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	WASTE	Power Boiler	1050	1010	336410	MCV HP 07 HR801	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	GAS	Power Boiler	1050	1010	539521	MCV HP 11 HR 802	MIDLAN	MIDLAND COGEN VENTURE	MP		
1990	GAS	Power Boiler	1050	1010	539521	MCV HP 13 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	WASTE	Power Boiler	1050	1010	336410	MCV HP-08 HR 801	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	GAS	Power Boiler	1050	1010	539521	MCV HP-09 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP		
1989	WASTE	HEA Power Boiler	1050	1010	539521	MCV HP-10 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP		

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure V	Min Req S	Location Name	County	Owner Name	Type	MW
1989	GAS	Power Boiler	1050	1010	539521	MCV HP-12 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1990	WASTE HEA	Power Boiler	1050	1010	539521	MCV HP14 HR 802	MIDLAN	MIDLAND CO-GEN VENTURE	MP	
1989	WASTE	Power Boiler	375	375	48196	MCV IP 03-HR-801	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	WASTE	Power Boiler	375	375	48196	MCV IP 04 HR801	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	WASTE	Power Boiler	375	375	48196	MCV IP 06 HR 801	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	GAS	Power Boiler	375	375	48196	MCV IP 07 HR801	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	WASTE	Power Boiler	375	375	48196	MCV IP 08 HR 801	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	GAS	Power Boiler	375	375	37345	MCV IP -10 HR 802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1990	GAS	Power Boiler	375	375	37345	MCV IP 13 HR 802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1990	WASTE HEA	Power Boiler	375	375	37345	MCV IP 14 HR 802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	WASTE	Power Boiler	375	375	48196	MCV IP-05 HR801	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	GAS	Power Boiler	375	375	37345	MCV IP-09 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	GAS	Power Boiler	375	375	37345	MCV IP-11 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	GAS	Power Boiler	375	375	37345	MCV IP-12 HR802	MIDLAN	MIDLAND COGEN VENTURE	MP	
1989	COAL	Power Boiler	1613	1613	301000	TES FILER CITY STATION	MANIST	CONSUMER ENERGY VICKIE	1 MP	70
1954	GAS	Power Boiler	912	912	229170	WHITE PINE ELECT POWER LL ONTON/WPCR	LL ONTON	WPCR	1 MP	15.6
1954	GAS	Power Boiler	912	912	229170	WHITE PINE ELECT POWER LL ONTON/WPCR	LL ONTON	WPCR	MP	
1954	COAL	Power Boiler	950	912	193040	WHITE PINE ELECT POWER LL ONTON/WPCR	LL ONTON	WPCR	MP	
1988	WOOD	Power Boiler	1400	1400	169788	VIKING ENERGY CORP.	ALCONA	TRACTEBEL POWER INC	1 PURPA	18
1989	WOOD	Power Boiler	1400	1240	165082	VIKING ENERGY OF MCBAIN	OSCEOL	TRACTEBEL POWER INC	PURPA	18

Known PURPA and MERCHANT COGEN Plants (100,000+ Steam Lbs/hr)

Count	8	1866
Total Steam Lbs/hr	8965517	4805

INDUSTRIAL/OTHER CHP SITES

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Type
ABTCO									
1957	COAL	Power Boiler	925	925	89108	ABT CO INC/LEN WERDA	ALPENA	ABT CO	1 IND
1961	GAS	Process Boiler	475	355	77662	ABT CO INC/LEN WERDA	ALPENA	ABT CO	IND
1957	GAS	Power Boiler	925	925	89108	ABT CO INC/ LEN WERDA	ALPENA	ABT CO	IND
ALBION COLLEGE									
1995	GAS	Power Boiler	150	150	8082	PHYSICAL PLANT	CALHOUN	ALBION COLLEGE	1 EDU
1995	GAS	Power Boiler	150	150	8082	PHYSICAL PLANT	CALHOUN	ALBION COLLEGE	EDU
BEAUMONT HOSPITAL									
1997	GAS	Power Boiler	200	165	43924	BEAUMONT HOSPITAL	OAKLAND	WILLIAM BEAUMONT HOSPITAL	1 HOS
1976	GAS	Power Boiler	200	170	40000	BSC BOILER HOUSE	OAKLAND	BEAUMONT SERVICES CO	HOS
1974	GAS	Power Boiler	200	170	37860	BSC BOILER HOUSE	OAKLAND	BEAUMONT SERVICES CO	HOS
1978	GAS	Power Boiler	200	170	30000	BSC BOILER HOUSE	OAKLAND	BEAUMONT SERVICES CO	HOS
CENTRAL MICHIGAN UNIVERSITY									
1961	GAS	Power Boiler	450	135	72464	CENTRAL MI UNIV PWRHSE	ISABELLA	CENTRAL MI UNIV PWRHSE	1 EDU
1992	GAS	Power Boiler	510	510	105800	CENTRAL MICH/POWERHOU	ISABELLA	CENTRAL MI UNIV PWRHSE	EDU
DEARBORN INDUSTRIAL GENERATION									
2000	WASTE HE	Power Boiler	1750	1630	530163	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERA	1 AUTO
2000	WASTE HE	Power Boiler	1750	1630	530163	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
2000	GAS	Power Boiler	1800	1800	500000	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
2000	GAS	Power Boiler	1800	1800	500000	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
2000	GAS	Power Boiler	1800	1800	500000	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
2000	WASTE HE	Power Boiler	450	450	60732	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
2000	WASTE HE	Power Boiler	450	450	60732	DEARBORN INDUSTRIAL GE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
1999	GAS	Power Boiler	480	480	250000	FORD ROUGE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
1999	GAS	Power Boiler	365	365	180000	FORD ROUGE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
1999	GAS	Power Boiler	370	370	180000	FORD ROUGE	WAYNE	DEARBORN INDUSTRIAL GENERATION	AUTO
DETROIT METRO									
1971	GAS	Power Boiler	200	200	40020	DET METRO AIRPORT	WAYNE	DETROIT MET AIRPORT #611	1 MUN
1971	GAS	Power Boiler	200	200	40020	DETROIT METRO AIRPORT	WAYNE	DETROIT MET AIRPORT	MUN
1991	GAS	Power Boiler	165	165	40000	DETROIT METRO AIRPORT	WAYNE	DETROIT MET AIRPORT	MUN
1991	GAS	Power Boiler	175	175	40000	DETROIT METRO AIRPORT	WAYNE	DETROIT MET AIRPORT #611	MUN
2000	GAS	Power Boiler	400	380	37500	METRO MIDFIELD TERM CTR	WAYNE	METRO ENERGY LLC	MUN
2000	GAS	Power Boiler	400	400	37500	METRO MIDFIELD TERM CTR	WAYNE	METRO ENERGY LLC	MUN
CARGIL INC									
1968	COAL	Power Boiler	750	630	107080	EVAPORATION SALT PLANT	ST CLAIR	CARGIL INCORPORATED	1 FOOD
CENTRAL MICHIGAN UNIVERSITY									
2001	WOOD	Power Boiler	145	145	50000	POWER HOUSE	ISABELLA	CMU POWER HOUSE RM 123	1 EDU
EASTERN MICHIGAN UNIVERSITY									
1968	GAS	Power Boiler	250	140	100000	EASTERN MICHIGAN UNIV	WASHTENAV	EASTERN MICH UNIVERSITY	1 EDU
1967	GAS	Power Boiler	250	140	84060	EASTERN MICHIGAN UNIV	WASHTENAV	EASTERN MICHIGAN UNIVERSITY	EDU
1951	GAS	Power Boiler	250	125	68840	EASTERN MICHIGAN UNIV	WASHTENAV	EASTERN MICHIGAN UNIVERSITY	EDU
1987	GAS	Power Boiler	245	185	53417	E M U HEATING PLANT	WASHTENAV	EMU/CATHY CART	EDU
FERRIS STATE UNIVERSITY									
1965	GAS	Power Boiler	135	135	63798	FERRIS STATE COLLEGE	MECOSTA	FERRIS STATE UNIV	1 EDU
1989	GAS	Power Boiler	120	120	50000	FERRIS STATE UNIV	MECOSTA	FERRIS STATE UNIV	EDU
1997	GAS	Power Boiler	130	130	75000	FSU	MECOSTA	FSU	EDU
FORD MOTOR COMPANY									
1956	GAS	Power Boiler	200	150	45000	WORLD HEADQUARTERS	WAYNE	FORD MOTOR-AMERICAN RD	1 AUTO
1965	GAS	Power Boiler	200	150	55000	FORD MOTOR CO	WAYNE	FORD MOTOR-AMERICAN RD	AUTO

INDUSTRIAL/OTHER CHP SITES

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Type
1956	GAS	Power Boiler	200	160	45000	FORD MOTOR CO	WAYNE	FORD MOTORS AMERICAN RD	AUTO
1956	GAS	Power Boiler	200	150	45000	FORD MOTOR CO	WAYNE	FORD MOTORS AMERICAN RD	AUTO
1957	GAS	Power Boiler	200	190	90000	FORD MOTOR CO	WAYNE	FORD MOTOR CO	AUTO
1952	GAS	Power Boiler	160	160	94892	FORD MOTOR CO	WAYNE	FORD MOTOR CO	AUTO
1952	GAS	Power Boiler	160	160	90000	FORD MOTOR CO	WAYNE	FORD MOTOR CO	AUTO
GM									
1985	COAL	Power Boiler	1530	1530	300000	GM POWER HOUSE	OAKLAND	GM WFG POWER HOUSE PT 17	1 AUTO
1968	GAS	Power Boiler	180	180	145484	GM POWER HOUSE	OAKLAND	GM WPG POWER HOUSE PT 17	AUTO
1955	GAS	Power Boiler	200	185	126020	GM POWER HOUSE	OAKLAND	GM WFG POWER HOUSE PT 17	AUTO
1951	COAL	Power Boiler	180	180	122320	GM POWER HOUSE	OAKLAND	GM WFG POWER HOUSE PT 17	AUTO
1954	GAS	Power Boiler	200	194	133190	GM TECH CENTER STEAM PL	MACOMB	GM TECH CTR STEAM PLANT	1 AUTO
1959	GAS	Power Boiler	200	195	123748	GM TECH CTR STEAM PLANT	MACOMB	GM TECH CTR STEAM PLANT	AUTO
1969	GAS	Power Boiler	250	203	123748	GM TECH STEAM PLANT	MACOMB	GM TECH CTR STEAM PLANT	AUTO
1951	GAS	Power Boiler	200	194	60000	TECH CENTER STEAM PLANT	MACOMB	GM TECH CTR STEAM PLANT	AUTO
1951	GAS	Power Boiler	187	187	60000	TECH CENTER STEAM PLANT	MACOMB	GM TECH CTR STEAM PLANT	AUTO
1949	GAS	Power Boiler	200	194	54430	TECH CENTER STEAM PLANT	MACOMB	GM TECH CTR STEAM PLANT	AUTO
GRAPHIC PACKAGING CORP									
1959	GAS	Power Boiler	975	970	200000	GRAPHIC PACKAGING CORP	KALAMAZOO	GRAPHIC PACKAGING CORPORAT	1 PP
1950	GAS	Power Boiler	475	480	90000	GRAPHICS PACKAGING COR	KALAMAZOO	GRAPHICS PACKAGING CORP	PP
1991	GAS	Power Boiler	700	600	180000	GRAPHIC PACKAGING CORP	KALAMAZOO	GRAPHIC PKGING CORP/D GLUSKIN	PP
INTERNATIONAL PAPER									
1990	GAS	Process Boiler	775	775	300000	INTERNATIONAL PAPER	DICKINSON	INTERNATIONAL PAPER	1 PP
1985	OTHER	Power Boiler	800	672	590000	INTERNATIONAL PAPER COM	DICKINSON	INTERNATIONAL PAPER CO	PP
1985	WOOD	Power Boiler	675	675	375000	INTERNATIONAL PAPER COR	DICKINSON	INTERNATIONAL PAPER CORP	PP
LAFARGE CORP									
1965	WASTE HE	Power Boiler	350	285	96845	LAFARGE CORP	ALPENA	LAFARGE CORP	1 IND
1965	WASTE HE	Power Boiler	325	285	88500	LAFARGE CORP	ALPENA	LAFARGE CORP	IND
1975	WASTE	Power Boiler	310	310	134177	LAFARGE MIDWEST INC	ALPENA	LAFARGE MIDWEST INC	IND
1975	WASTE	Power Boiler	325	335	134177	LAFARGE MIDWEST INC	ALPENA	LAFARGE MIDWEST INC	IND
1961	WASTE HE	Power Boiler	350	350	88500	LAFARGE MIDWEST INC	ALPENA	LAFARGE MIDWEST INC	IND
MEADWESTVACO PAPER									
1969	OIL	Power Boiler	1675	1675	450000	MEADWESTVACO CORP	DELTA	MEADWESTVACO CORP	1 PP
1980	GAS	Power Boiler	1725	1600	750000	MEADWESTVACO CORP	DELTA	MEADWESTVACO PAPERS GROUP	PP
1972	OIL	Power Boiler	1625	1625	506000	MEADWESTVACO CORP	DELTA	MEADWESTVACO PAPERS GROUP	PP
1948	OIL	Power Boiler	439	439	159400	MEADWESTVACO CORP	DELTA	MEADWESTVACO PAPERS GROUP	PP
MENOMINEE PAPER									
1962	COAL	Power Boiler	675	655	76064	MENOMINEE PAPER COMPAN	MENOMINEE	MENOMINEE PAPER COMPANY	1 PP
1928	GAS	Power Boiler	250	220	70000	MENOMINEE PAPER COMPAN	MENOMINEE	MENOMINEE PAPER COMPANY	PP
1948	COAL	Power Boiler	700	660	60000	MENOMINEE PAPER COMPAN	MENOMINEE	MENOMINEE PAPER COMPANY	PP
MICHIGAN STATE UNIVERSITY									
1965	COAL	Power Boiler	1050	975	200000	MSU T B SIMON POWER PLA	INGHAM	MICH STATE UNIV	1 EDU
1966	COAL	Power Boiler	1050	975	250000	MSU T B SIMON POWER PLA	INGHAM	MSU T B SIMON POWERHOUSE	EDU
1974	COAL	Power Boiler	1055	975	350000	MSU T B SIMON POWER PLA	INGHAM	MSU ACCTS PAYABLE	EDU
1992	COAL	Power Boiler	1100	945	350000	MSU T B SIMON POWER PLA	INGHAM	MICHIGAN STATE UNIVERSITY	EDU
OAKWOOD HOSPITAL									
1988	GAS	Power Boiler	150	150	25800	OAKWOOD HEALTHCARE INC	WAYNE	OAKWOOD HEALTHCARE INC	1 HOS
2003	GAS	Power Boiler	250	150	25000	OAKWOOD HEALTHCARE INC	WAYNE	OAKWOOD HEALTHCARE INC	HOS
1988	GAS	Power Boiler	150	150	28000	OAKWOOD HOSPITAL	WAYNE	OAKWOOD HOSPITAL	HOS
NEENAH PAPER									
1970	OIL	Power Boiler	260	260	150000	NEENAH PAPER INC	ALGER	NEENAH PAPER INC	1 PP

INDUSTRIAL/OTHER CHP SITES

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req V	Location Name	County	Owner Name	Type
1957	COAL	Power Boiler	430	420	150000	NEENAH PAPER INC	ALGER	NEENAH PAPER INC	PP
SD WARREN									
1963	OIL	Power Boiler	650	650	110000	S D WARREN COMPANY	MUSKEGON	S D WARREN COMPANY	1 PP
SMURFIT STONE CONTAINER CORP									
1966	OIL	Power Boiler	1625	1625	212466	SMIRFET STONE CONTAINER	FONTONAGON	SMURFIT STONE CONTAINER COI	1 PP
1986	OIL	Power Boiler	291	291	115000	SMURFIT STONE CONTAINER	EONTONAGON	SMURFIT STONE CONTAINER CORP	PP
1978	GAS	Power Boiler	300	300	115000	SMURFIT STONE CONTAINER	EONTONAGON	SMURFIT STONE CONTAINER CORP	PP
1989	GAS	Power Boiler	300	300	60000	SMURFIT STONE CONTAINER	EONTONAGON	SMURFIT STONE CONTAINER	PP
UNIVERSITY OF MICHIGAN									
1955	GAS	Power Boiler	475	450	150000	U M CENTRAL HEATING PLT	WASHTENAV	U OF M / J CAMPTON POWER PLT	1 EDU
1966	GAS	Power Boiler	140	140	40000	U M CENTRAL HEATING PLT	WASHTENAV	U OF M / J COMPTON POWER PLT	EDU
1969	GAS	Power Boiler	200	150	50000	U OF M CENTRAL HEATING	WASHTENAV	U OF M / J COMPTON POWER PLT	EDU
1969	GAS	Power Boiler	525	472	220000	UM	WASHTENAV	THE REGENTS OF THE UNIVERSITY OF	EDU
1990	GAS	Power Boiler	430	430	77524	UM	WASHTENAV	UNIVERISTY OF MICHIGAN	EDU
1963	GAS	Power Boiler	520	520	175316	UM MAIN POWER HOUSE	WASHTENAV	U OF M / J COMPTON POWER PLT	EDU
1990	GAS	Power Boiler	600	460	77524	UM MAIN POWER HOUSE	WASHTENAV	U OF M / J COMPTON POWER PLT	EDU
WESTERN MICHIGAN UNIVERSITY									
2000	GAS	Power Boiler	230	230	64760	WESTERN MI UNIVERSITY	KALAMAZOO	WESTERN MI UNIVERSITY	1 EDU
1958	GAS	Power Boiler	220	220	154176	WESTERN MICH UNIVERSITY	KALAMAZOO	WESTERN MICH UNIVERSITY	EDU
1997	GAS	Power Boiler	350	230	71500	WESTERN MICHIGAN UNIV	KALAMAZOO	WESTERN MICHIGAN UNIV	EDU
1997	GAS	Power Boiler	350	230	71500	WESTERN MICHIGAN UNIV	KALAMAZOO	WESTERN MICHIGAN UNIV	EDU
2004	GAS	Power Boiler	400	400	263200	WESTERN MICHIGAN UNIVE	KALAMAZOO	WESTERN MICHIGAN UNIVERSITY	EDU
1965	GAS	Power Boiler	250	220	131209	WESTERN MICHIGAN UNIVE	KALAMAZOO	WESTERN MICHIGAN UNIVERSITY	EDU
2003	GAS	Power Boiler	350	230	65000	WESTERN MICHIGAN UNIVE	KALAMAZOO	WESTERN MICHIGAN UNIVERSITY	EDU

Known Non-PURPA CHP Plants

Total CHP Facility Count: 25
 Total Steam Lbs/hr 14596585
 NON-DIG Only: 11304795
 Non-DIG Only CHP Ratio 22614

Total CHP MW:
 Average CHP Ratio (Lbs/hr/MW):

OTHER MICHIGAN CHP NOT OTHERWISE ACCOUNTED FOR

Plant name	Plant type	Plant operator name	Fuel	Generator Capacity (MW)	Notes
District Co-Gen				93.1	
GREATER DETROIT RES REC FAC NU		Michigan Waste Energy Inc	MWC	68.4	
BEACON HEATING	UT	Detroit Edison Co	GAS	20	
JACKSON COUNTY RES REC FAC NU		USFilter	MSW	3.71	
Eaton Rapids Gas Storage Co.				0.45	Diesel Engine
Great Lakes Gas				0.48	Diesel Engine
Southeastern Michigan Gas				0.06	Diesel Engine
Landfill Gas Co-Gen				65.05	
ARBOR HILLS	NU	Gas Recovery Systems Inc	LFG	25	
ANN ARBOR GENERATING	NU	Michigan Cogeneration Sys	LFG	0.8	
C & C ELECTRIC	NU	Gas Recovery Systems Inc	LFG	3	
EQ WASTE ENERGY SERVICES INNU		EQ Waste Energy Services In	LFG	1.55	
SUMPTER ENERGY ASSOCIATES	NU	Michigan Cogeneration Sys	LFG	12	
LYON DEVELOPMENT	NU	Gas Recovery Systems Inc	LFG	5	
PINE TREE ACRES	NU	Sumpter Energy Associates	LFG	4	
BFI Lyons - Landfill Gas			LFG	1	Diesel Engine
BFI Marshall - Landfill Gas			LFG	1	Diesel Engine
BFI Toledo Landfill Gas			LFG	0.3	Diesel Engine
EQ Waste Energy Inc. - Generator 1			LFG	0.5	
EQ Waste Energy Inc. - Generator 2			LFG	0.5	
EQ Waste Energy Inc. - Generator 3			LFG	0.4	
EQ Waste Energy Inc. - Generator 4			LFG	0.4	
Granger				8	
Venice Resources Gas Recovery			LFG	0.8	
Venice Resources Gas Recovery			LFG	0.8	
Wastewater Treatment				19.87	
City of Adrian - Frest Water System				0.5	Diesel Engine
City of Ann Arbor - Water Pump Stat				0.6	Diesel Engine
City of Benton Harbor					Diesel Engine
City of Gross Pointe Park - Backup				0.11	Diesel Engine
Detroit Water Department				0.11	Diesel Engine
Kent County Water to Energy Facility , MI,				18	Other
Lansing Water Department				0.11	Diesel Engine
Ludington Water Department				0.11	Diesel Engine
Martin Mariette - Freshwater Pumping					Diesel Engine

OTHER MICHIGAN CHP NOT OTHERWISE ACCOUNTED FOR

Plant name	Plant type	Plant operator name	Fuel	Generator Capacity (MW)	Notes
Auto Manufacturing					7
LOTUS ENGINEERING INC	NU	Lotus Engineering Inc	O	2.5	
RAWSONVILLE PLANT FORD MO	NU	Visteon Corporation	G	4.5	
Lear Corporation			G	0.7	
Pharmaceuticals					14.3
WARNER LAMBERT CO	NU	Pfizer	G	8.3	
PARKEDALE PHARMA INC	NU	Parkedale Pharmaceutica Inc	G	2.8	
Park Davis - Pharmaceutical Lab			DF	3.2	Diesel Engine
Hospitals/Medical Centers					7.81
Henry Ford Medical Center			DF	0.3	Diesel Engine
Hutzel Hospital - Generator 1	Gas Turbine		G	0.8	
Hutzel Hospital - Generator 2					
Spectrum Hospital, Grand Rapids	Gas Turbine		G	0.8	
St Lawrence Hospital			DF	0.16	Diesel Engine
University of Detroit Mercy			DF	0.45	Diesel Engine
William Beaumont Hosp - Gen 1	Gas Turbine		G	1.9	
William Beaumont Hop - Gen 2	Gas Turbine		G	1.9	
Wayne Medical Ctr.				1.5	
Metals Industry					2.8
VOSS TAYLOR	NU	Voss Industries	G	1	
VOSS LANTZ	NU	Voss Industries	G	1	
Lorin Industries			G	0.8	
Other Manufacturing					50.74
Focus Hope -				0.5	Diesel Engine
AGA Corporation			WD	3	
ALMA Modular				19	
Aspen Lumber Company	Combined Turbine/IC Engine		WD	0.75	
Amrey Bakery	IC			2	
Chelsea Modular	IC			3.3	
Frank Jenkins	IC			3.8	
Genix Inc.	Diesel			1.05	
Great Lakes Gas			Diesel	0.48	
Modular Power LLC	Steam Turbine			14.8	
Ogihara	IC			2	
Southeastern Michigan Gas			Diesel	0.06	
Commercial					5.7
AAA Michigan HQ				6.0	IC
Blue Cross Blue Shield				0.45	Diesel Engine
Clarion Hotel				0.06	Diesel Engine
Country Fresh Dairy				0.5	Diesel Engine
Genix				1.05	Diesel Engine
McNamana Federal Building				0.63	Diesel Engine
University Microfilm				0.45	Diesel Engine
Best Western - Sterling Hts.	IC			2	

OTHER MICHIGAN CHP NOT OTHERWISE ACCOUNTED FOR

Plant name	Plant type	Plant operator name	Fuel	Generator Capacity (MW)	Notes
Macomb Daily Newspaper	IC			0.6	
Total Other CHP MW Not Otherwise Counted:				280.6	

CHP POTENTIAL FACILITIES WITH LARGE BOILERS

Instal led	Fuel Type	Boiler Use	Allow ed	Set Press	Min Req V S	Location Name	County	Owner Name
DAIMLER CHRYSLER								
1984	GAS	Power Boiler	200	163	150000	DAIMLER CHRYSLER 447-03-12	MACOMB	DAIMLER CHRYSLER 447-03-12
1945	COAL	Power Boiler	200	185	125000	DAIMLER CHRYSLER 447-03-12	MACOMB	DAIMLER CHRYSLER 447-03-12
1952	GAS	Power Boiler	200	190	113304	DAIMLER CHRYSLER 450 34 00	MACOMB	DAIMLER CHRYSLER 450 34 00
1948	COAL	Power Boiler	200	185	67960	DAIMLER CHRYSLER SIMS 4470312	MACOMB	DAIMLER CHRYSLER SIMS 4470312
1952	COAL	Power Boiler	200	185	150000	DAIMLER CHRYSLER/DTE ENERGY	MACOMB	DTE ENERGY CENTER LLC
1952	GAS	Power Boiler	200	190	113304	DAIMLER CHRYSLER/DTE ENERGY	MACOMB	DAIMLER CHRYSLER/DTE ENERGY CENTER L
1952	GAS	Power Boiler	200	195	113304	DAIMLER CHRYSLER/DTE ENERGY	MACOMB	DAIMLER CHRYSLER/DTE ENERGY CENTER L
1969	GAS	Power Boiler	200	165	150000	CHRYSLER CORP	WAYNE	CHRYSLER CORP 4810227
1951	COAL	Power Boiler	163	163	66964	CHRYSLER CORP	WAYNE	CHRYSLER CORP 4810227
1958	GAS	Power Boiler	150	150	40000	CHRYSLER MAINTENCE	MACOMB	CHRYSLER MAINTENANCE
1951	GAS	Power Boiler	200	165	70000	CHRYSLER TRENTON ENG PLT	WAYNE	CHRYSLER CORP 4810227
1989	GAS	Power Boiler	240	240	45948	DAIMLER\CHRYSLER 4850360	OAKLAND	DAIMLER CHRYSLER 4850360
DELPHI								
1974	COAL	Power Boiler	200	170	150000	DELPHI S/JEFF SHAW	SAGINAW	DELPHI S/JEFF SHAW
1970	COAL	Power Boiler	200	165	150000	DELPHI S/JEFF SHAW	SAGINAW	DELPHI S/JEFF SHAW
1966	COAL	Power Boiler	200	170	150000	DELPHI S/JEFF SHAW	SAGINAW	DELPHI S/JEFF SHAW
1981	GAS	Power Boiler	250	250	33150	DELPHI AUTOMOTIVE	OTTAWA	DELPHI AUTOMOTIVE
1965	GAS	Power Boiler	150	150	58630	DELPHI AUTOMOTIVE	KENT	DELPHI AUTOMOTIVE
1981	GAS	Power Boiler	250	250	33150	DELPHI AUTOMOTIVE SYSTEMS	OTTAWA	DELPHI AUTOMOTIVES SYSTEMS
1943	COAL	Power Boiler	200	180	93808	DELPHI CHASSIS SYSTEMS	SAGINAW	DELPHI CHASSIS SYSTEMS
1942	GAS	Power Boiler	200	170	93818	DELPHI CHASSIS SYSTEMS	SAGINAW	DELPHI CHASSIS SYSTEMS
1960	COAL	Power Boiler	185	165	94788	DELPHI S/JEFF SHAW	SAGINAW	DELPHI S/JEFF SHAW
1953	COAL	Power Boiler	165	165	65808	DELPHI SAGINAW POWERHOU	SAGINAW	DELPHI S/JEFF SHAW
DOMTAR								
1968	COAL	Power Boiler	725	650	125000	DOMTAR INC	ST CLAIR	DOMTAR INC
2003	GAS	Power Boiler	200	200	25106	DOMTAR	ST CLAIR	DOMTAR
1938	GAS	Power Boiler	680	650	80000	DOMTAR INC	ST CLAIR	DOMTAR INC
1979	GAS	Power Boiler	250	190	60168	DOMTAR INC	ST CLAIR	DOMTAR INC
DOW								
1999	GAS	Power Boiler	200	200	50000	DOW AGRO SCIENCES	HURON	DOW AGRO SCIENCES
1999	GAS	Power Boiler	200	200	50000	DOW AGRO SCIENCES	HURON	DOW AGRO SCIENCES
1968	GAS	Power Boiler	270	200	52720	DOW CORNING CORP B2701-8	MIDLAND	DOW CORNING CORP
1968	GAS	Power Boiler	270	200	57424	DOW CORNING CORP B2701-9	MIDLAND	DOW CORNING CORP
1965	GAS	Power Boiler	250	185	63230	DOW CORNING CORP BL403-6	MIDLAND	ENERGY & INFRASTRUCTURE MAINTANCE E
FORD								
1963	WASTE HI	Power Boiler	500	500	150000	ROUGE STEEL CO	WAYNE	ROUGE STEEL CO - BOF
1963	WASTE HI	Power Boiler	500	500	150000	ROUGE STEEL CO-BOF	WAYNE	ROUGE STEEL CO-BOF
1966	GAS	Power Boiler	250	165	127940	LIVONIA TRANSMISSIONS PT	WAYNE	FORD MOTOR CO
1997	GAS	Power Boiler	260	205	96980	ELM ST POWERHOUSE	WAYNE	FORD MOTOR CO
1997	GAS	Power Boiler	260	205	96980	ELM ST POWERHOUSE	WAYNE	FORD MOTOR CO

CHP POTENTIAL FACILITIES WITH LARGE BOILERS

Instal led	Fuel Type	Boiler Use	Allow ed	Set Press	Min Req V	S Location Name	County	Owner Name
1963	GAS	Power Boiler	200	200	132000	FORD MOTOR CO	WAYNE	FORD MOTOR/N AMPUNAN
1957	GAS	Power Boiler	200	195	90000	FORD MOTOR CO	WAYNE	FORD MOTOR/N AMPUNAN
1957	GAS	Power Boiler	225	163	80000	FORD MOTOR CO	WAYNE	FORD MOTOR CO/ATTN: POWERHOUSE
1952	GAS	Power Boiler	160	160	45000	FORD MOTOR CO	WAYNE	FORD MOTOR CO/WENDELL STOWELL
1968	GAS	Power Boiler	250	150	80000	FORD MOTOR CO/B ANDREWS	MACOMB	FORD MOTOR CO/B ANDREWS
1968	GAS	Power Boiler	250	150	80000	FORD MOTOR CO/B ANDREWS	MACOMB	FORD MOTOR CO/B ANDREWS
1952	GAS	Power Boiler	225	160	80000	TRANS PLANT	WAYNE	FORD MOTOR CO
1991	GAS	Power Boiler	175	175	30000	WIXOM ASSEMBLY PLANT	OAKLAND	FORD MOTOR COMPANY

GEORGIA PACIFIC

1949	GAS	Power Boiler	272	272	121870	GEORGIA PACIFIC CO	KALAMAZC	GEORGIA PACIFIC COMPANY
1962	COAL	Power Boiler	990	990	217672	GEORGIA PACIFIC CORP	KALAMAZC	GEORGIA PACIFIC CORP
1947	GAS	Power Boiler	272	272	127750	GEORGIA PACIFIC CORP	KALAMAZC	GEORGIA PACIFIC CORP
1947	GAS	Power Boiler	272	272	121870	GEORGIA PACIFIC CORP	KALAMAZC	GEORGIA PACIFIC CORP
1986	GAS	Power Boiler	150	150	31320	GEORGIA PACIFIC	CRAWFOR	GEORGIA PACIFIC
1978	GAS	Power Boiler	400	400	86554	U S PLYWOOD	OTSEGO	GEORGIA PACIFIC CORP

GM

1954	GAS	Power Boiler	250	210	184064	GM POWERHOUSE	GENESEE	WFG VANSLYKE R
1972	COAL	Power Boiler	217	217	400000	BUICK MOTOR DIVISION	GENESEE	BUICK MOTOR DIVISION
1951	COAL	Power Boiler	190	190	69144	FISHER BODY DIV GMC	INGHAM	LANSING AUTO DIVISION
1970	GAS	Power Boiler	170	170	55000	FISHER BODY DIV PLANT 1	KENT	FISHER BODY DIV PLANT #1
1970	GAS	Power Boiler	170	170	55000	FISHER BODY DIV PLT 1	KENT	GENERAL MOTORS
1953	COAL	Power Boiler	180	180	122320	GM C P C GROUP	OAKLAND	GENERAL MOTORS CPC GROUP
1972	COAL	Power Boiler	217	217	400000	GENERAL MOTORS CORP	GENESEE	GENERAL MOTORS CORP
1982	COAL	Power Boiler	300	275	211600	GM BOC GROUP	OAKLAND	GM ORION POWERHOUSE
1983	COAL	Power Boiler	275	275	194920	GM HAMTRAMCK ASSEMBLY	WAYNE	GM HAMTRAMCK ASSEMBLY
1983	COAL	Power Boiler	300	300	168232	GM HAMTRAMCK ASSEMBLY	WAYNE	GM HAMTRAMCK ASSEMBLY
1978	COAL	Power Boiler	380	245	204100	GM HYDRAMATIC	WASHTEN	GM SEC QUALITY/ROGER LOSSING
1982	GAS	Power Boiler	275	275	211600	GM ORION POWERHOUSE	OAKLAND	GM ORION POWERHOUSE
1982	COAL	Power Boiler	275	275	211600	GM ORION POWERHOUSE	OAKLAND	GM ORION POWERHOUSE
1963	GAS	Power Boiler	250	230	145000	GM POWERHOUSE	GENESEE	GM POWERHOUSE
1952	GAS	Power Boiler	225	210	136952	GM POWERHOUSE	GENESEE	GM POWERHOUSE
1952	GAS	Power Boiler	250	210	136952	GM POWERHOUSE	GENESEE	GM POWERHOUSE
1966	GAS	Power Boiler	250	230	106956	GM/SMCO POWERHOUSE	SAGINAW	GM/SMCO POWERHOUSE
1965	GAS	Power Boiler	250	230	106956	GM/SMCO POWERHOUSE#1	SAGINAW	GM/SMCO POWERHOUSE
1965	GAS	Power Boiler	250	230	106956	GM/SMCO-POWER HOUSE #4	SAGINAW	SMCO-POWER HOUSE
1988	GAS	Power Boiler	250	150	50000	GENERAL MOTORS CORP	OAKLAND	GM CORPORATION
1972	COAL	Power Boiler	217	217	400000	GENERAL MOTORS CORP	GENESEE	GENERAL MOTORS CORP
1970	GAS	Power Boiler	170	170	55000	GENERAL MOTORS CORP.	KENT	GENERAL MOTORS CORP.
1997	GAS	Power Boiler	260	195	40000	GM CORP PONTIAC E TRUCK ASSE	OAKLAND	GM CORP PONTIAC E TRUCK ASMBLY
1983	COAL	Power Boiler	300	275	56880	GM HAMTRAMCK ASSEMBLY	WAYNE	GM HAMTRAMCK ASSEMBLY
1982	GAS	Power Boiler	300	275	63040	GM ORION POWERHOUSE	OAKLAND	GM ORION POWERHOUSE
1998	GAS	Power Boiler	150	150	28000	GM PLANT 38 METAL FAB	GENESEE	ALLIED GEN SERVICES INC
1987	GAS	Power Boiler	350	350	40081	GM POWERTRAIN	MACOMB	GM POWERTRAIN
1962	GAS	Power Boiler	250	200	71800	GM POWERTRAIN	MACOMB	GM POWERTRAIN
1941	OIL	Power Boiler	200	185	80000	GM POWERTRAIN H DENISON	MACOMB	GM POWERTRAIN H DENISON

CHP POTENTIAL FACILITIES WITH LARGE BOILERS

Instal led	Fuel Type	Boiler Use	Allow ed	Set Press	Min Req V	S	Location Name	County	Owner Name
1962	GAS	Power Boiler	250	200	71800		GM POWERTRAIN POWERHOUSE	MACOMB	GM POWERTRAIN POWERHOUSE
1941	OIL	Power Boiler	200	185	80000		GM POWERTRAIN POWERHOUSE	MACOMB	GM POWERTRAIN POWERHOUSE
1999	GAS	Power Boiler	250	150	40000		GM PROVING GROUNDS	OAKLAND	GM PROVING GROUNDS
1994	GAS	Power Boiler	250	150	40000		GM PROVING GROUNDS	OAKLAND	GM PROVING GROUNDS
1965	GAS	Power Boiler	250	150	50000		GM PROVING GROUNDS	OAKLAND	GM PROVING GROUNDS
1965	GAS	Power Boiler	200	200	59196		GM PT	BAY	GM TED WOLLESEN
1964	GAS	Power Boiler	200	200	59196		GM PT	BAY	GM TED WOLLESEN
1964	OIL	Power Boiler	200	200	59196		GM PT	BAY	GM TED WOLLESEN
1997	GAS	Power Boiler	260	195	40000		GM TRUCK & BUS ASSEMBLY	OAKLAND	GM CORP PONTIAC EAST TRUCK ASMBLY
1997	GAS	Power Boiler	195	195	40000		GM TRUCK & BUS ASSEMBLY	OAKLAND	GENERAL MOTORS TRUCK GRP
1997	GAS	Power Boiler	195	195	40000		GM TRUCK & BUS ASSEMBLY	OAKLAND	GENERAL MOTORS TRUCK GRP
1965	GAS	Power Boiler	250	250	27200		GM/SMCO POWERHOUSE #3	SAGINAW	GM/SMCO POWERHOUSE
1941	COAL	Power Boiler	250	250	79304		GMC HYDRA MATIC	WASHTEN	GM HYDRAMATIC
1941	COAL	Power Boiler	250	250	83580		GMC HYDRA MATIC DIV	WASHTEN	GM HYDRA DIV
1947	GAS	Power Boiler	247	247	79304		GMC POWERTRAIN	WASHTEN	GMC WILLOW RUN TRANS
1941	COAL	Power Boiler	250	250	79304		GMC WILLOW RUN PLANT	WASHTEN	GMC QUAL ASSOC
1941	GAS	Power Boiler	250	250	79304		HYDRAMATIC DIV GMC	WASHTEN	HYDRAMATIC DIV. GMC
1956	COAL	Power Boiler	200	200	63000		MFD GRAND BLANC	GENESEE	GENERAL MOTORS
1952	COAL	Power Boiler	200	200	63000		MFD GRAND BLANC	GENESEE	GENERAL MOTORS
1952	COAL	Power Boiler	200	200	63000		MFD GRAND BLANC	GENESEE	GENERAL MOTORS

GREAT LAKES STEEL

1987	GAS	Power Boiler	750	445	115000		GREAT LAKES STEEL	WAYNE	UNITED STATES STEEL CORP GREAT LAKES
1987	GAS	Power Boiler	750	485	135000		GREAT LAKES STEEL	WAYNE	UNITED STATES STEEL CORP GREAT LAKES
1936	GAS	Power Boiler	450	445	100000		GREAT LAKES STEEL CORP	WAYNE	UNITED STATES STEEL CORP GREAT LAKES
1970	WASTE HI	Power Boiler	850	680	590000		GREAT LAKES WORKS, USS	WAYNE	GREAT LAKES WORKS, USS
1970	WASTE HI	Power Boiler	850	680	590000		GREAT LAKES WORKS, USS	WAYNE	GREAT LAKES WORKS, USS
1952	GAS	Power Boiler	478	445	195550		ZUG ISLAND	WAYNE	U.S STEEL CORP-GREAT LAKES DIVISION
1989	GAS	Power Boiler	500	500	60000		GREAT LAKES WORKS, USS	WAYNE	GREAT LAKES WORKS, USS
1938	GAS	Power Boiler	445	445	90400		GREAT LAKES STEEL DIV	WAYNE	NAT STEEL GR LAKES DIV

GREAT LAKES TISSUE

1969	GAS	Power Boiler	200	165	60000		GREAT LAKES TISSUE	CHEBOYG/	GREATLAKES TISSUE
1960	COAL	Power Boiler	200	155	60000		GREAT LAKES TISSUE CO	CHEBOYG/	GREAT LAKES TISSUE CO

H J HEINZ

1993	GAS	Power Boiler	150	150	32000		H J HEINZ LP	OTTAWA	H J HEINZ CO
1952	GAS	Power Boiler	135	150	28000		H J HEINZ LP	OTTAWA	H J HEINZ CO

HEMLOCK SEMI CONDUCTOR

1994	GAS	Power Boiler	250	175	32000		HEMLOCK SEMI CONDUCTOR	SAGINAW	DOW CORNING CORP
1992	GAS	Power Boiler	250	175	32000		HEMLOCK SEMI CONDUCTOR	SAGINAW	DOW CORNING CORP
1987	GAS	Power Boiler	250	175	31254		HEMLOCK SEMI CONDUCTOR	SAGINAW	DOW CORNING CORP
1996	GAS	Power Boiler	250	180	45960		HEMLOCK SEMICONDUCTOR	SAGINAW	HEMLOCK SEMI CONDUCTOR

KELLOGG COMPANY

1989	GAS	Power Boiler	375	375	131000		POWER HOUSE	CALHOUN	KELLOGG CO
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CHP POTENTIAL FACILITIES WITH LARGE BOILERS

Instal led	Fuel Type	Boiler Use	Allow ed	Set Press	Min Req V	S Location Name	County	Owner Name
1989	GAS	Power Boiler	375	375	131000	POWER HOUSE	CALHOUN	KELLOGG CO
1996	GAS	Power Boiler	200	200	35744	KELLOGG RESEARCH	CALHOUN	WKKI KELLOGG CO
1989	WASTE HI	Power Boiler	375	375	72300	POWER HOUSE	CALHOUN	KELLOGG CO
KRAFT FOODS								
1936	OIL	Power Boiler	700	700	115000	KRAFT FOODS INC	CALHOUN	KRAFT FOODS BLDG 6 POWERHOUSE
1948	GAS	Power Boiler	750	750	141022	KRAFT FOODS INC	CALHOUN	KRAFT FOODS BLDG 6 POWERHOUSE
1953	OIL	Process Boiler	160	160	60000	KRAFT FOODS INC	CALHOUN	KRAFT FOODS BLDG 6 POWERHOUSE
MARYSVILLE HYDROCARBONS								
1972	GAS	Power Boiler	870	710	170000	MARYSVILLE HYDROCARBONS	ST CLAIR	MARYSVILLE HYDROCARBONS
1972	GAS	Power Boiler	870	870	170000	MARYSVILLE HYDROCARBONS	ST CLAIR	MARYSVILLE HYDROCARBONS
MENASHA PAPER								
1995	GAS	Power Boiler	300	300	200000	MENASHA PAPER	ALLEGAN	PAPERBOARD DIV MENASHA PKG CO LLC
1995	GAS	Power Boiler	300	300	181315	MENASHA PAPER	ALLEGAN	PAPERBOARD DIV MENASHA PKG CO LLC
1995	GAS	Power Boiler	300	300	181315	MENASHA PAPER	ALLEGAN	PAPERBOARD DIV MENASHA PKG CO LLC
MONITOR SUGAR								
1992	GAS	Power Boiler	250	180	150000	MONITOR SUGAR CO	BAY	MONITOR SUGAR CO
1992	GAS	Power Boiler	250	180	150000	MONITOR SUGAR CO	BAY	MONITOR SUGAR CO
1990	GAS	Power Boiler	250	180	120000	MONITOR SUGAR CO	BAY	MONITOR SUGAR CO
MORTON INTERNATIONAL								
1949	COAL	Power Boiler	650	650	177080	MORTON INTERNATIONAL	MANISTEE	MORTON INTERNATIONAL
1949	COAL	Power Boiler	650	650	177080	MORTON INTERNATIONAL	MANISTEE	MORTON INTERNATIONAL
NATIONAL STEEL								
1952	GAS	Power Boiler	455	445	153150	GREAT LAKES STEEL CORP	WAYNE	NAT STEEL-GR LAKES DIV
1952	GAS	Power Boiler	480	455	153150	GREAT LAKES STEEL CORP	WAYNE	NAT STEEL-GR LAKES DIV
1952	GAS	Power Boiler	480	450	153150	NATIONAL STEEL	WAYNE	NAT STEEL GR LAKES DIV
1936	GAS	Power Boiler	450	450	115080	NATIONAL STEEL CORP	WAYNE	NAT STEEL GR LAKES DIV
1952	GAS	Process Boiler	445	445	195550	NATIONAL STEEL CORP	WAYNE	NAT STEEL-GR LAKES DIV
1969	GAS	Power Boiler	250	175	100000	NATIONAL STEEL CORP	WAYNE	NATIONAL STEEL CORP
1969	GAS	Power Boiler	250	200	100000	NATIONAL STEEL CORP	WAYNE	UNITED STATES STEEL CORP
1936	GAS	Power Boiler	450	450	100000	NATIONAL STEEL CORP	WAYNE	UNITED STATES STEEL CORP. GREAT LAKES
OTHER MANUFACTURING								
1985	GAS	Power Boiler	425	425	125000	ARKEMA INC	WAYNE	ARKEMA INC
1986	GAS	Power Boiler	550	550	125000	ATOFINA	WAYNE	ATOFINA
1971	GAS	Power Boiler	200	165	136000	DETROIT DIESEL CORP	WAYNE	DETROIT DIESEL CORP
1983	COAL	Power Boiler	300	275	194920	DETROIT MIDLUX PLANT	WAYNE	DETROIT MIDLUX PLANT
1996	GAS	Power Boiler	240	240	136000	GREAT LAKES PULP & FIBRE	MENOMINI	GREAT LAKES PULP & FIBRE
1986	WOOD	Power Boiler	325	300	25000	HARDWOODS OF MICHIGAN	LENAWEE	HARDWOODS OF MICHIGAN
1970	GAS	Power Boiler	240	240	70000	I KO MONROE INC	MONROE	I KO MONROE INC
1934	GAS	Power Boiler	270	270	137400	CORP SPECIALTY PAPER	KALAMAZC	JAMES RIVER CORPORATION
1949	COAL	Power Boiler	600	600	195000	MONROE PAPER	MONROE	JEFFERSON SMURFIT
1998	GAS	Power Boiler	150	145	190400	JOHNSON CONTROLS	ALLEGAN	JOHNSON CONTROLS
2002	GAS	Power Boiler	200	150	108231	MICHIGAN ETHANOL	TUSCOLA	MICHIGAN ETHANOL

CHP POTENTIAL FACILITIES WITH LARGE BOILERS

Instal led	Fuel Type	Boiler Use	Allow ed	Set Press	Min Req V	Location Name	County	Owner Name
1955	GAS	Power Boiler	850	810	160000	MICHIGAN PAPERBOARD	CALHOUN	MICHIGAN PAPERBOARD CORP
1948	OIL	Power Boiler	500	480	110000	WHITE PIGEON PAPER CO	ST JOSEPH	ARTISTIC CARTON
OTHER FACILITIES								
1971	GAS	Power Boiler	290	290	101880	OAKLAND UNIVERSITY	OAKLAND	OAKLAND UNIV VOUCHER AUDIT
1996	GAS	Process Boiler	150	150	360000	HIDDEN COVE APTS	MUSKEGO	HIDDEN COVE APTS
2003	GAS	Hot Water Sup	150	150	360000	MALOWEY MANOR	BAY	BAY CITY HOUSING COMM
1995	GAS	Power Boiler	150	150	30000	HOPE COLLEGE	OTTAWA	HOPE COLLEGE
1976	OIL	Power Boiler	260	150	28120	HURON VALLEY MENS FAC	WASHTEN	HURON VALLEY MENS FAC
1976	GAS	Power Boiler	260	150	28120	HURON VALLEY MENS FAC	WASHTEN	HURON VALLEY MENS FAC
1976	GAS	Steam Heating	260	150	28120	HURON VALLEY MENS FAC	WASHTEN	HURON VALLEY MENS FAC
PACKAGING CORP OF AMERICA								
1951	GAS	Power Boiler	225	225	27220	PACKAGING CORP OF AMER	KENT	PACKAGING CORP OF AMER
1953	GAS	Power Boiler	675	645	200000	PACKAGING CORP OF AMERICA	MANISTEE	PACKAGING CORP OF AMERICA
1950	GAS	Power Boiler	675	640	125000	PACKAGING CORPORATION OF AMI	MANISTEE	PACKAGING CORPORATION OF AMERICA
PFIZER								
1970	GAS	Process Boiler	250	210	120000	PFIZER	KALAMAZO	PFIZER INC
1960	COAL	Power Boiler	250	185	100000	PFIZER	KALAMAZO	PFIZER INC N.AMERSHARED SERV
1997	GAS	Power Boiler	175	175	35800	PFIZER	OTTAWA	PFIZER
1997	GAS	Power Boiler	175	175	35800	PFIZER	OTTAWA	PFIZER
1997	GAS	Power Boiler	175	175	35800	PFIZER	OTTAWA	PFIZER
1991	GAS	Power Boiler	225	225	90000	PFIZER	KALAMAZO	PFIZER/NORTH AMERICAN SHARED SERVICE
1989	GAS	Power Boiler	200	175	51190	PFIZER	WASHTEN	PFIZER
1980	GAS	Process Boiler	250	210	89220	PFIZER	KALAMAZO	PFIZER INC
1976	GAS	Power Boiler	200	200	59020	PFIZER	KALAMAZO	PFIZER
1975	COAL	Power Boiler	225	195	90000	PFIZER	KALAMAZO	PFIZER INC/N AMERICAN SHARED SERVICE
1962	COAL	Power Boiler	250	195	90000	PFIZER	KALAMAZO	PFIZER
1959	GAS	Power Boiler	265	155	45142	PFIZER	WASHTEN	PFIZER
1958	GAS	Power Boiler	200	160	50000	PFIZER	WASHTEN	PFIZER
1951	OIL	Power Boiler	160	155	30180	PFIZER	OTTAWA	PFIZER
1951	GAS	Process Boiler	160	155	30180	PFIZER	OTTAWA	PFIZER
1948	COAL	Power Boiler	200	195	61420	PFIZER BLDG 43	KALAMAZO	PFIZER
1952	COAL	Power Boiler	200	195	61420	PFIZER BLDG-43	KALAMAZO	PFIZER INC
1948	COAL	Power Boiler	200	200	61420	THE UPJOHN CO	KALAMAZO	PFIZER INC
1948	COAL	Power Boiler	200	200	61420	THE UPJOHN COMPANY	KALAMAZO	PFIZER INC
PIONEER SUGAR								
1969	GAS	Power Boiler	300	300	150000	PIONEER SUGAR	SAGINAW	PIONEER SUGAR
1974	OIL	Power Boiler	300	300	69000	PIONEER SUGAR	TUSCOLA	PIONEER SUGAR
1947	COAL	Power Boiler	300	300	65272	PIONEER SUGAR	TUSCOLA	PIONEER SUGAR
1941	GAS	Power Boiler	297	297	65272	PIONEER SUGAR	TUSCOLA	PIONEER SUGAR
1939	COAL	Power Boiler	250	250	61604	PIONEER SUGAR	SANILAC	PIONEER SUGAR
1939	COAL	Power Boiler	250	250	56956	PIONEER SUGAR	SANILAC	PIONEER SUGAR
SAPPI FINE PAPERS								
1968	COAL	Power Boiler	515	515	275000	S D WARREN CO.	MUSKEGO	SAPPI FINE PAPERS
2001	GAS	Power Boiler	350	350	70000	SAPPI FINE PAPERS	MUSKEGO	SAPPI PAPER
2001	GAS	Power Boiler	350	350	70000	SAPPI FINE PAPERS	MUSKEGO	SAPPI PAPER
TILDEN MAGNETITE								
1973	OIL	Power Boiler	250	250	200000	TILDEN MAGNETITE PART/TILDEN I	MARQUET	CLEVELAND CLIFFS IRON CO

CHP POTENTIAL FACILITIES WITH LARGE BOILERS

Instal led	Fuel Type	Boiler Use	Allow ed	Set Press	Min Req V	S Location Name	County	Owner Name
1977	OIL	Power Boiler	250	250	208800	TILDEN MAGNETITE PARTNERSHIP	MARQUET	TILDEN MAGNETITE PARTNERSHIP
1973	GAS	Power Boiler	250	250	200000	TILDEN MAGNETITE PARTNERSHIP	MARQUET	TILDEN MAGNETITE PARTNERSHIP
VISTEON								
1965	GAS	Power Boiler	200	135	120000	VISTEON POWERHOUSE	MACOMB	VISTEON POWERHOUSE
1956	GAS	Power Boiler	200	160	47590	VISEON CORP R CHEEMA	WASHTEN	VISTEON CORP R CHEEMA
1951	GAS	Process Boiler	160	160	38402	VISTEON	MACOMB	VISTEON POWER HOUSE
1951	GAS	Power Boiler	160	160	29152	VISTEON	MACOMB	VISTEON POWER HOUSE
1996	GAS	Power Boiler	250	245	40000	VISTEON CORP R CHEEMA	WASHTEN	VISTEON CORP R CHEEMA
1985	GAS	Power Boiler	250	155	60000	VISTEON CORP R CHEEMA	WASHTEN	VISTEON CORP R CHEEMA
1978	GAS	Power Boiler	250	155	55720	VISTEON CORP R CHEEMA	WASHTEN	VISTEON CORP R CHEEMA
1956	GAS	Power Boiler	200	160	40000	VISTEON CORP R CHEEMA	WASHTEN	VISTEON CORP R CHEEMA

COMPANIES WITH LARGE BOILERS

Company Count: 44
 Total Steam Lbs/hr 21699348

CHP POTENTIAL FACILITIES WITH MID-SIZED BOILER

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Ty
BASF CORPORATION									1
1981	GAS	Power Boiler	150	150	26520	WYANDOTTE WORKS	WAYNE	BASF WYANDOTTE CORP	CH
1981	GAS	Power Boiler	150	150	39920	BASF WYANDOTTE CORP	WAYNE	BASF WYANDOTTE CORP	CH
BORGESS HOSPITAL									1
1981	GAS	Power Boiler	200	200	30096	CONSUMERS ENERGY	KALAMAZOO	BORGESS HOSPITAL	HC
1977	GAS	Power Boiler	150	150	28072	BORGESS HOSPITAL	KALAMAZOO	BORGESS HOSPITAL	HC
1977	GAS	Power Boiler	150	150	25090	BORGESS HOSPITAL	KALAMAZOO	BORGESS HOSPITAL	HC
BULLDOG BOILER									1
1997	GAS	Power Boiler	200	200	40000	BULLDOG BOILER	WAYNE	BULLDOG BOILER	IN
1997	GAS	Power Boiler	200	200	40000	BULLDOG BOILER	WAYNE	BULLDOG BOILER	IN
1987	GAS	Power Boiler	150	150	28000	BULLDOG BOILER	WAYNE	BULLDOG BOILER	IN
1976	GAS	Power Boiler	150	150	27600	BULLDOG BOILER	WAYNE	BULLDOG BOILER	IN
1992	GAS	Power Boiler	150	150	30000	BULLDOG BOILER RENT/	WAYNE	BULLDOG BOILER RENTALS	IN
BUTTERWORTH HOSPITAL									1
1993	GAS	Power Boiler	150	150	32000	BUTTERWORTH HOSPIT/	KENT	BUTTERWORTH HOSPITAL	HC
1993	GAS	Power Boiler	150	150	32000	BUTTERWORTH HOSPIT/	KENT	BUTTERWORTH HOSPITAL	HC
CYTEC INDUSTRIES									1
1987	GAS	Power Boiler	175	175	60000	CYTEC INDUSTRIES	KALAMAZOO	CYTEC INDUSTRIES- KALAMAZOO PLAN	CH
1976	OIL	Power Boiler	175	175	40000	CYTEC INDUSTRIES	KALAMAZOO	CYTEC INDUSTRIES KALAMAZOO PLAN	CH
1971	GAS	Power Boiler	160	150	28000	CYTEC INDUSTRIES KAL	KALAMAZOO	CYTEC INDUSTRIES KALAMAZOO PLAN	CH
DARLING COMPANY									1
1990	GAS	Power Boiler	150	150	36236	DARLING & CO	WAYNE	DARLING INTERNATIONAL INC	AL
1990	GAS	Power Boiler	150	150	33170	DARLING CO.	WAYNE	DARLING DELWARE	AL
1973	GAS	Power Boiler	175	165	60000	DARLING INTERNATIONAL/	BRANCH	DARLING INTERNATIONAL	AL
EMPIRE IRON MINING PARTNERSHIP									1
1979	OIL	Power Boiler	150	150	40080	EMPIRE IRON MINING P/	MARQUETTE	CLIFFS MICHIGAN MINING COMPANY	OF
1979	OIL	Power Boiler	150	150	40030	EMPIRE IRON MINING P/	MARQUETTE	CLIFFS MICHIGAN MINING COMPANY	OF
1965	GAS	Power Boiler	155	155	35570	EMPIRE IRON MINING P/	MARQUETTE	CLIFFS MICHIGAN MINING COMPANY	OF
1962	OIL	Power Boiler	200	160	35570	EMPIRE IRON MINING P/	MARQUETTE	CLIFFS MICHIGAN MINING COMPANY	OF
FLINT INK									1
1965	OIL	Power Boiler	200	160	60330	FLINT INK	OTTAWA	FLINT INK	IN
1960	GAS	Power Boiler	250	160	34070	FLINT INK	OTTAWA	FLINT INK	IN
FRENCH PAPER CO.									1
1989	GAS	Power Boiler	250	180	55000	FRENCH PAPER CO	BERRIEN	FRENCH PAPER CO	PP
1964	COAL	Power Boiler	175	175	72288	FRENCH PAPER CO	BERRIEN	FRENCH PAPER CO	PP
GAGE PRODUCTS									1
1992	GAS	Power Boiler	200	200	29291	GAGE PRODUCTS	OAKLAND	GAGE PRODUCTS	CH
1992	GAS	Power Boiler	200	200	29291	GAGE PRODUCTS	OAKLAND	GAGE PRODUCTS	CH
GERBER PRODUCTS									1

CHP POTENTIAL FACILITIES WITH MID-SIZED BOILER

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Ty
1983	GAS	Power Boiler	725	725	55186	GERBER PRODUCTS	NEWAYGO	GERBER PRODUCTS	FC
1983	GAS	Power Boiler	725	725	55186	GERBER PRODUCTS	NEWAYGO	GERBER PRODUCTS	FC
KRUGER COMMODITIES									1
1993	GAS	Power Boiler	150	150	32000	KRUGER COMMODITIES	ALLEGAN	KRUGER COMMODITIES	IN
1993	GAS	Power Boiler	150	150	32000	KRUGER COMMODITIES	ALLEGAN	KRUGER COMMODITIES	IN
LAKE SUPERIOR COLLEGE									1
1969	GAS	Power Boiler	150	150	55000	LAKE SUPERIOR COLLEGE	CHIPPEWA	LAKE SUPERIOR STATE UNIVERSITY	EC
1969	GAS	Power Boiler	150	150	55000	LAKE SUPERIOR COLLEGE	CHIPPEWA	LAKE SUPERIOR STATE UNIVERSITY	EC
1981	GAS	Power Boiler	150	150	29291	LSSU PHYSICAL PLANT	CHIPPEWA	LAKE SUPERIOR STATE UNIVERSITY	EC
LAKELAND REGIONAL									1
1976	GAS	Power Boiler	150	150	25090	LAKELAND REGIONAL	BERRIEN	LAKELAND REGIONAL	HC
1976	OIL	Power Boiler	150	150	25090	LAKELAND REGIONAL	BERRIEN	LAKELAND REGIONAL	HC
LEPRINO FOODS									1
1989	GAS	Power Boiler	150	150	40000	LEPRINO FOODS	OTTAWA	LEPRINO FOODS	FC
1989	GAS	Power Boiler	150	150	40000	LEPRINO FOODS	OTTAWA	LEPRINO FOODS	FC
1989	GAS	Power Boiler	150	150	40000	LEPRINO FOODS	OTTAWA	LEPRINO FOODS	FC
LIFE SAVERS INC									1
1967	GAS	Power Boiler	180	180	46114	LIFE SAVERS INC	OTTAWA	LIFESAVERS INC	FC
1967	GAS	Process Boiler	180	180	46114	LIFE SAVERS INC	OTTAWA	RJR NABISCO	FC
MANISTIQUE PAPERS									1
1964	COAL	Power Boiler	340	365	80000	MANISTIQUE PAPERS IN SCHOOLCRAFT		MANISTIQUE PAPERS INC	PP
1977	COAL	Power Boiler	340	350	60000	MANISTIQUE PAPERS IN SCHOOLCRAFT		MANISTIQUE PAPERS INC	PP
MICHIGAN MIL PRODUCERS ASSOC.									1
1987	GAS	Power Boiler	150	150	40000	MICH MILK PROD ASSOCLINTON		MICH MILK PROD ASSOCLINTON	FC
1978	GAS	Power Boiler	150	150	48032	MICHIGAN MILK PRODUCERS	CLINTON	MICHIGAN MILK PRODUCERS	FC
MIDLINK BUSINESS PARK									1
1965	GAS	Power Boiler	250	250	70000	MIDLINK BUSINESS PARK	KALAMAZOO	MIDLINK BUSINESS PARK	IN
1965	GAS	Power Boiler	250	250	70000	MIDLINK BUSINESS PARK	KALAMAZOO	MIDLINK BUSINESS PARK	IN
MURCO PACKAGING									1
1976	GAS	Power Boiler	150	150	30096	MURCO PACKING CO INC	ALLEGAN	MURCO PACKING CO INC	FC
1976	GAS	Power Boiler	150	150	30096	MURCO PACKING CO INC	ALLEGAN	MURCO PACKING CO INC	FC
NORTHLAND CENTER OFFICE									1
1952	GAS	Power Boiler	200	185	30450	NORTHLAND PWR HOUS	OAKLAND	NORTHLAND CENTER OFFICE	RE
1952	GAS	Power Boiler	200	185	30450	NORTHLAND PWR HOUS	OAKLAND	NORTHLAND CENTER OFFICE	RE
1952	GAS	Power Boiler	185	185	30450	NORTHLAND PWR HOUS	OAKLAND	NORTHLAND CENTER OFFICE	RE
NORTHVILLE STATE HOSPITAL									1
1975	OIL	Power Boiler	250	218	32320	NORTHVILLE STATE HOSP	WAYNE	NORTHVILLE STATE HOSP	HC
1953	GAS	Power Boiler	217	217	68840	NORTHVILLE STATE HOSP	WAYNE	NORTHVILLE STATE HOSPITAL	HC
1949	OIL	Power Boiler	260	250	68840	NORTHVILLE STATE HOSP	WAYNE	NORTHVILLE STATE HOSP	HC

CHP POTENTIAL FACILITIES WITH MID-SIZED BOILER

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Ty
1949	GAS	Power Boiler	250	217	68840	NORTHVILLE STATE HOS	WAYNE	NORTHVILLE STATE HOSP	HC
PCPC INC.									1
1947	GAS	Power Boiler	440	440	60000	PCPC INC	CALHOUN	PCPC INC	IN
1946	GAS	Power Boiler	440	440	51240	PCPC INC	CALHOUN	PCPC INC	IN
OTHER MANUFACTURING									
1997	GAS	Power Boiler	250	180	35000	BAYER CORPORATION	MUSKEGON	BAYER CORPORATION	1 PH
1960	GAS	Power Boiler	200	185	35820	BRISTOL MYERS SQUIBB	OTTAWA	BRISTOL MYERS SQUIBB	1 PH
1982	GAS	Power Boiler	150	150	28000	COCA COLA NORTH AME	VAN BUREN	COCA-COLA COMPANY	1 FC
1934	GAS	Power Boiler	270	270	137400	CORP SPECIALTY PAPER	KALAMAZOO	JAMES RIVER CORPORATION	1 PP
1962	GAS	Power Boiler	165	165	28360	DANA	MUSKEGON	DANA	1 AL
1987	GAS	Process Boile	200	200	32000	DART CONTAINER CORP	INGHAM	DART CONTAINER CORPORATION	1 CH
1944	GAS	Power Boiler	150	150	25370	DIEHL INC	LENAWEE	DIEHL INC	1 AL
1997	GAS	Power Boiler	250	159	40000	DSC LIMITED	WAYNE	DSC LIMITED/ ATTN: WES STEFFI	1 AL
1997	GAS	Power Boiler	300	300	77000	DUNN PAPER	ST CLAIR	DUNN PAPER	1 PP
1968	GAS	Power Boiler	270	150	63660	EAGLE OTTAWA LEATHE	OTTAWA	EAGLE OTTAWA LEATHER CO	1 IN
1997	WASTE	Power Boiler	700	650	55000	IMC POTASH	OSCEOLA	IMC POTASH	1 PP
1982	GAS	Power Boiler	160	155	28000	INTERTAPE POLYMER	ST CLAIR	INTERTAPE POLYMER	1 PP
1968	GAS	Power Boiler	175	175	29580	KEELER BRASS COMPAN	KENT	F K I INC	1 IN
1986	GAS	Power Boiler	235	235	37000	MACSTEEL MONROE DIV	MONROE	MACSTEEL MONROE DIVISION	1 OF
1960	GAS	Process Boile	200	185	35820	MEAD JOHNSON CO	OTTAWA	BRISTOL MEYERS CO	1 PH
1956	GAS	Power Boiler	200	200	35800	PAULSTRA	KENT	PAULSTRA	1 AL
1993	GAS	Power Boiler	250	250	25000	PREMIER CORRUGATED	JACKSON	PREMIER CORRUGATED	1 PP
1980	GAS	Power Boiler	250	250	33150	QUANEX/MAC STEEL DIV	JACKSON	QUANEX/MAC STEEL DIV	1 OF
1998	GAS	Power Boiler	150	150	27600	TERRY MATERIAL OF MI	GRATIOT	TERRY MATERIAL OF MICH	1 IN
1978	WOOD	Power Boiler	150	150	32000	V K W HARDWOODS	KENT	V K W HARDWOODS	1 IN
1997	GAS	Power Boiler	200	200	75000	WELCH'S	VAN BUREN	WELCH'S GRAPE JUICE CO	1 FC
1996	GAS	Power Boiler	200	200	35744	WKK INSTITUTE OF FOO	CALHOUN	WKK INSTITUTE OF FOOD & NUTR	1 FC
1998	GAS	Power Boiler	150	150	30080	ZEELAND FARM SERVICE	OTTAWA	ZEELAND FARM SERVICE CONTROL	1 FC
OTHER HEALTHCARE									
1995	GAS	Power Boiler	150	150	30000	ASCENSION HEALTH	GENESEE	ASCENSION HEALTH	1 HC
1952	GAS	Power Boiler	165	165	40000	CARO CENTER	TUSCOLA	CARO CENTER	1 HC
1969	GAS	Power Boiler	200	150	34140	COMMUNITY HOSPITAL	SAGINAW	COMMUNITY HOSPITAL SERV	1 HC
1968	GAS	Power Boiler	400	400	30000	COMMUNITY SITE	CALHOUN	BATTLE CREEK HEALTH SYS	1 HC
1950	GAS	Power Boiler	245	245	60280	KALAMAZOO STATE HOS	KALAMAZOO	KALAMAZOO STATE HOSP	1 HC
1963	GAS	Power Boiler	200	165	30936	PROVIDENCE HOSP	PWR OAKLAND	PROVIDENCE HOSP PWR HSE	1 HC
1968	GAS	Power Boiler	400	400	30000	WESTBROOK HOSPITAL	CALHOUN	BATTLE CREEK HEALTH SYS	1 HC
OTHER EDUCATIONAL FACILITIES									
1992	GAS	Power Boiler	150	150	32000	ANDREW UNIVERSITY	BERRIEN	ANDREW UNIVERSITY	1 EC
1974	GAS	Power Boiler	170	165	41960	CENTRAL HEATING PLAN	OAKLAND	OAKLAND COUNTY DFO	1 EC
1966	GAS	Power Boiler	200	165	40000	GD VALLEY STATE COLLI	OTTAWA	GRAND VALLEY STATE UNIV	1 EC
1977	GAS	Power Boiler	200	160	33000	UM FLINT CENTRAL ENE	GENESEE	U OF M / P ENGLE FLINT CAMPUS	EC
RALSTON FOOD									1
1960	GAS	Power Boiler	250	230	43130	RALSTON FOOD CO	CALHOUN	RALCORP HOLDINGS INC	FC
1994	GAS	Power Boiler	250	235	55000	RALSTON FOODS	CALHOUN	RALCORP HOLDINGS INC	FC

CHP POTENTIAL FACILITIES WITH MID-SIZED BOILER

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Ty
RDA ENGINEERING									
1997	GAS	Power Boiler	200	200	51750	RDA ENGINEERING -TAC	MACOMB	RDA ENGINEERING	AL
1997	GAS	Power Boiler	200	200	32000	RDA ENGR TACOM STM	MACOMB	RDA ENGINEERING	AL
1997	GAS	Power Boiler	200	200	60000	RDA-ENGR-TACOM STM	MACOMB	RDA ENGINEERING	AL
ROSS LABORATORIES									
2003	GAS	Power Boiler	600	600	80000	ROSS LABORATORIES	ST JOSEPH	ROSS LABORATORIES	CF
1995	GAS	Power Boiler	600	600	80000	ROSS PRODUCTS/ED RC	ST JOSEPH	ROSS PRODUCTS/ED ROTH	CF
1985	COAL	Power Boiler	280	280	45128	ROSS PRODUCTS/ED RC	ST JOSEPH	ROSS PRODUCTS/ED ROTH	CF
STATE OF MICHIGAN FACILITIES									
1982	GAS	Power Boiler	200	165	33440	ENERGY CONVERSION C	EATON	MICH DEPT MGNT & BUDGET	GC
1974	GAS	Power Boiler	185	185	60000	ENERGY CONVERSION C	EATON	MICH DEPT MGNT & BUDGET	GC
1974	GAS	Power Boiler	200	180	60000	ENERGY CONVERSION C	EATON	MICH DEPT MGNT & BUDGET	GC
1959	COAL	Power Boiler	160	160	44900	KINROSS CORRECTIONA	CHIPPEWA	KINROSS CORRECTIONAL FAC	GC
1959	COAL	Power Boiler	160	160	44900	KINROSS CORRECTIONA	CHIPPEWA	KINROSS CORRECTIONAL FAC	GC
1952	COAL	Power Boiler	160	160	44900	KINROSS CORRECTIONA	CHIPPEWA	KINROSS CORRECTIONAL FAC	GC
1962	GAS	Power Boiler	275	275	30000	MARQUETTE PRISON	MARQUETTE	MARQUETTE BRANCH PRISON	GC
1962	GAS	Power Boiler	270	270	26300	MARQUETTE PRISON	MARQUETTE	MARQUETTE BRANCH PRISON	GC
1961	GAS	Power Boiler	270	270	26300	MARQUETTE PRISON	MARQUETTE	MARQUETTE BRANCH PRISON	GC
1970	GAS	Power Boiler	216	216	70000	MICHIGAN REFORMATOF	IONIA	MICHIGAN REFORMATORY	GC
1970	GAS	Power Boiler	215	215	70000	MICHIGAN REFORMATOF	IONIA	MICHIGAN REFORMATORY	GC
1970	GAS	Power Boiler	185	185	60000	NEWBERRY CORRECTIOI	LUCE	NEWBERRY CORRECTIONAL FACILITY	GC
1996	GAS	Power Boiler	200	185	27600	NEWBERRY CORRECTIOI	LUCE	NEWBERRY CORRECTIONAL FACILITY	GC
1968	GAS	Power Boiler	300	290	70000	STATE PRISON OF SO M	JACKSON	MI DEPARTMENT OF CORRECTIONS	GC
1978	OIL	Power Boiler	200	200	94370	CONSUMERS ENERGY	WASHTENAW	HURON VALLEY MENS FAC	GC
1968	GAS	Power Boiler	300	290	70000	SO MICH STATE PRISON	JACKSON	SO MICH STATE PRISON	GC
1968	OIL	Power Boiler	300	290	70000	SPSM BLDG 196	JACKSON	MI DEPT OF CORRECTIONS	GC
1971	GAS	Power Boiler	250	215	70000	STATE OF MICHIGAN	IONIA	MICHIGAN REFORMATORY	GC
1968	GAS	Power Boiler	300	290	70000	STATE PRISON OF SO M	JACKSON	MI DEPARTMENT OF CORRECTIONS	GC
St. Joseph Hospital									
1974	GAS	Power Boiler	150	150	33260	ST JOSEPH HOSPITAL	MACOMB	ST JOSEPH HOSPITAL	HC
1974	GAS	Power Boiler	150	150	33260	ST JOSEPH HOSPITAL	MACOMB	ST JOSEPH HOSPITAL	HC
St. Joseph Mercy Hospital									
1977	GAS	Power Boiler	200	150	48788	ST JOSEPH MERCY HOSF	WASHTENAW	TRINITY HEALTH	HC
1975	GAS	Power Boiler	150	150	49788	ST JOSEPH MERCY HOSF	WASHTENAW	TRINITY HEALTH	HC
1977	GAS	Power Boiler	150	150	48788	ST JOSEPH MERCY HOSF	WASHTENAW	ST JOSEPH MERCY HOSP	HC
ST MARY'S MEDICAL CENTER									
1970	GAS	Power Boiler	200	130	25000	ST MARYS HOSPITAL	SAGINAW	ST MARYS MED CTR/SAGINAW	HC
STEELCASE									
1983	GAS	Power Boiler	270	270	33260	STEELCASE IND CENTER	KENT	STEELCASE INC	IN
1986	GAS	Process Boilk	270	265	80000	STEELCASE INC	KENT	STEELCASE INC	IN
1987	COAL	Power Boiler	800	800	80000	STEELCASE INC	KENT	STEELCASE INC	IN
1981	COAL	Power Boiler	300	265	45180	STEELCASE INC	KENT	STEELCASE INC	IN
1981	COAL	Power Boiler	300	265	40000	STEELCASE INC	KENT	STEELCASE INC	IN
1968	GAS	Power Boiler	270	125	36000	STEELCASE INC	KENT	STEELCASE INC	IN

CHP POTENTIAL FACILITIES WITH MID-SIZED BOILER

Year Installed	Fuel Type	Boiler Use	Press Allowed	SV Set Pressure	Min Req S V	Location Name	County	Owner Name	Ty
1965	GAS	Power Boiler	270	125	35562	STEELCASE INC	KENT	STEELCASE INC	IN
1983	COAL	Power Boiler	300	270	74948	STEELCASE ENERGY CN	KENT	STEELCASE INC	IN
1983	OIL	Process Boilk	300	265	45180	STEELCASE ENERGY CE	KENT	STEELCASE INC	IN
SUN CHEMICAL									1
1978	GAS	Power Boiler	150	150	30096	SUN CHEMICAL CORPORMUSKEGON		SUN CHEMICAL CORPORATION	CH
1978	GAS	Power Boiler	150	150	30096	SUN CHEMICAL CORPORMUSKEGON		SUN CHEMICAL CORPORATION	CH
1978	GAS	Power Boiler	150	150	30096	SUN CHEMICAL CORPORMUSKEGON		SUN CHEMICAL CORPORATION	CH
TIMBER PRODUCTS OF MICHIGAN									1
1975	WOOD	Power Boiler	175	175	30124	TIMBER PRODUCTS MICALGER		TIMBER PRODUCTS MICH	IN
1969	WOOD	Power Boiler	180	180	26612	TIMBER PRODUCTS OF MALGER		TIMBER PRODUCTS OF MICH	IN
1975	WOOD	Power Boiler	175	175	30124	TIMBER RPRODUCTS COR ALGER		TIMBER PRODUCTS - MICH	IN
TYCO CORPORATION									1
1970	GAS	Power Boiler	160	160	25060	TYCO INTERNATIONAL	ST JOSEPH	TYCO INTERNATIONAL	IN
1970	GAS	Power Boiler	160	160	25060	TYCO INTERNATIONAL	ST JOSEPH	TYCO INTERNATIONAL	IN
ZEELAND CHEMICAL CORP.									1
1979	GAS	Power Boiler	160	155	31874	ZEELAND CHEMICAL	OTTAWA	ZEELAND CHEMCIAL	CH
1991	GAS	Power Boiler	250	155	50000	ZEELAND CHEMICALS IN	OTTAWA	ZEELAND CHEMICALS INC.	CH

MID SIZED BOILER FACILITIES

Count 145
 Total MMBtu/hr 6406523

**CHP Cost Estimates
Draft**

	Capacity kW	Capacity MMBtu/kWh	Installed Cost \$/kW	O&M Cost \$/kWh	NOx Emissions
Steam Turbine (Backpressure)		100-55	\$300-400	0.015-0.035	
Steam Turbine (Condensing)		10-7	\$500-700	0.015-0.035	
Gas Turbines (Small)	1000-10000		1500-1000	0.015-0.012	<25 ppm w/dry low nox burner; <10 w/SCR
Gas Turbines (Large)	10000-50000		1000-800	0.012-0.010	<25 ppm w/dry low nox burner; <10 w/SCR
Reciprocating Engines (small)	100-500		1800-1400	0.015-0.012	0.5 lbs/mWh w/ rich burn & 3 way catalyst or SCR treatment
Reciprocating Engines (large)	500-2000		1400-1000	0.012-0.010	0.5 lbs/mWh w/ rich burn & 3 way catalyst or SCR treatment

Source: Midwest CHP Applications Center