

**Appendix A: BTA Policy Technical Document**

**Table 1:** Estimated impingement mortality, entrainment and water use at major industrial facilities in New York State (MW = megawatts; MGD = million gallons per day). Impingement numbers are absolute and do not consider survival off traveling screens. Estimates are based on the most recent site-specific data collected (Date). When two dates are indicated, the first date corresponds with entrainment and the second date with impingement. Estimated entrainment for the cement plants is based on modeling; no site specific data were available.

Estimated Entrainment and Impingement at Major New York Facilities Using Once-through Cooling Water

Facility	Owner	MW	MGD	Waterbody	Entrainment*	Impingement*	Date
<i>Steam electric</i>							
AES Cayuga	AES	306	219	Cayuga Lake	576,000	ND*	1994
AES Greenidge	AES	161	113	Seneca Lake	ND	29,000	1977
AES Somerset	AES	675	279	Lake Ontario	141,469	12,445	2000
AES Westover	AES	146	102	Susquehanna River	3,900,000	10,200	1977
Arthur Kill	NRG Energy	842	713	Arthur Kill	1,548,314,607	4,406,742	2007
Astoria Generating	Astoria Generating	1,290	1,254	East River	629,832,154	2,916,328	2007
Barrett	National Grid	384	294	Barnum's Cove	906,259,233	176,044	2004
Black River Power	Black River Power	50	55	Black River	41,000	0	1993
Bowline 1&2	Mirant	1,139	912	Hudson River	127,000,000	30,000	1987
Brooklyn Navy Yard	Brooklyn Navy Yard	286	55	East River	38,998,201	0	1997
Danskammer	Dynegy Northeast	491	457	Hudson River	161,019,074	144,429	2008
Dunkirk Steam Station	NRG Energy	600	579	Lake Erie	47,940,000	62,778,786	2007
East River Generating	ConEd	317	369	East River	1,342,191,677	1,500,873	2007
Far Rockaway	National Grid	109	84	Jamaica Bay	117,662,685	6,560	2006
Fitzpatrick	Entergy	825	586	Lake Ontario	18,004,625	239,357	2007/2004
Genoa	Rochester Gas & Electric	496	490	Lake Ontario	28,616,000	35,612	2007
Glenwood	National Grid	210	179	Hempstead Harbor	177,879,210	9,562	2005
Huntley	NRG Energy	760	846	Niagara River	105,500,000	96,700,000	2007
Indian Point	Entergy	1,910	2,801	Hudson River	1,200,000,000	1,180,000	1990
Nine Mile Point 1&2	Constellation	1,757	490	Lake Ontario	86,700,000	1,081,900	1997
Northport	National Grid	1,522	939	LI Sound	8,430,808,238	127,118	2003
Oswego Steam Station	Oswego Harbor Power	1,700	1,399	Lake Ontario	12,824,104	1,246	2007
Poletti	NYP&A	875	622	East River	638,749,772	37,557	2002
Port Jefferson	National Grid	385	399	Pt Jeff. Harbor	1,014,950,951	76,104	2004
Ravenswood	Trans Canada	2,410	1,391	East River	199,000,000	82,303	1994
Roseton	Dynegy Northeast	1,200	926	Hudson River	712,000,000	44,096	1987/2007
<i>Non-steam electric</i>							
Holcim Cement	Holcim Cement	NA*	4.6	Hudson River	403,743	ND	ND
LaFarge Cement	LaFarge Cement	NA	8.6	Hudson River	870,834	ND	ND
Empire State Plaza	OQS	NA	108	Hudson River	37,739,611	ND	2007
World Trade Center	NY/NJ Port Authority	NA	173	Hudson River	140,000,000	10,335	1993

<b>Total</b>	20,846	16,854		17,727,923,188	171,616,597
<b>Mean</b>	802	562		811,307,696	6,600,638
<b>Median</b>	638	428		117,662,685	60,100
<b>STD</b>	637	588		1,572,249,191	22,083,594
<b>Maximum</b>	2,410	2,801		8,430,808,238	96,700,000
<b>Minimum</b>	50	5		41,000	0

\*Notes: NA=not applicable; ND=no data available  
 All estimated impingement and entrainment values are based on actual cooling water use.