

## Green Collar Training and Workforce Development

### Occupations and 2006-16 Occupational Outlooks in Selected NYC Green Sectors

New York City Labor Market Information Service

July 22, 2009

#### Renewable Energy Generation: Wind, Solar, Geothermal, Hydropower, Biomass, and Hydrogen

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
51-8012	Power Distributors and Dispatchers	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
19-4041	Geological Sample Test Technicians	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
19-4051	Nuclear Equipment Operation Technicians	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
47-5013	Service Unit Operators, Oil, Gas, and Mining	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
47-5041	Continuous Mining Machine Operators	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
51-8011	Nuclear Power Reactor Operators	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
49-9042	Maintenance and Repair Workers, General	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 23,600	\$ 36,130	\$ 43,230	45,310	390	72%
17-2051	Civil Engineers	ENHANCED SKILLS	BA+ REQUIRED	LEAST FAVORABLE	\$ 55,690	\$ 77,350	\$ 94,700	5,130	220	36%
47-2211	Sheet Metal Workers	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 32,350	\$ 66,720	\$ 78,490	2,550	70	14%
17-2071	Electrical Engineers	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	LEAST FAVORABLE	\$ 63,010	\$ 92,830	\$ 110,640	2,190	60	17%
51-4041	Machinists	ENHANCED SKILLS	LESS THAN BA	LEAST FAVORABLE	\$ 21,260	\$ 34,690	\$ 46,400	2,010	30	0%
11-3071	Transportation, Storage, and Distribution Managers	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 67,590	\$ 92,970	\$ 122,730	1,720	50	0%
17-2141	Mechanical Engineers	ENHANCED SKILLS	BA+ REQUIRED	LEAST FAVORABLE	\$ 53,910	\$ 72,160	\$ 86,680	1,630	60	33%
51-8013	Power Plant Operators	ENHANCED SKILLS	LESS THAN BA	LEAST FAVORABLE	\$ 55,010	\$ 70,020	\$ 75,200	580	20	0%

**Transportation: Reducing Environmental Impact (various modes)**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
47-4061	Rail Track Laying and Maintenance Equipment Operators	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
53-3021	Bus Drivers, Transit and Intercity	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
53-4031	Railroad Conductors and Yardmasters	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
43-5032	Dispatchers, Except Police, Fire, and Ambulance	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 21,180	\$ 31,210	\$ 41,690	4,970	130	0%
53-7051	Industrial Truck and Tractor Operators	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 21,730	\$ 31,950	\$ 39,900	3,970	100	0%
53-4011	Locomotive Engineers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	na	na	na	1,130	50	20%
17-2011	Aerospace Engineers	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
53-6051	Transportation Vehicle, Equipment and Systems Inspectors, Except Aviation	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
43-5071	Shipping, Receiving, and Traffic Clerks	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 18,190	\$ 27,210	\$ 35,160	15,480	370	0%
53-3032	Truck Drivers, Heavy and Tractor-Trailer	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 29,620	\$ 44,380	\$ 52,500	13,140	230	0%
49-3023	Automotive Service Technicians and Mechanics	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 21,400	\$ 35,450	\$ 47,300	10,050	210	5%
17-2072	Electronics Engineers, Except Computer	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	LEAST FAVORABLE	\$ 62,010	\$ 88,540	\$ 104,220	800	20	0%

**Energy Efficiency: Smart Grids & Vehicles, Appliances, and Lighting (Retrofitting Buildings in "Green Construction")**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
47-2011	Boilermakers	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
51-8021	Stationary Engineers and Boiler Operators	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 46,690	\$ 67,170	\$ 72,470	2,270	40	0%
47-2131	Insulation Workers, Floor, Ceiling, and Wall	IN DEMAND	LESS THAN BA	FAVORABLE	na	na	na	310	10	0%
49-9042	Maintenance and Repair Workers, General	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 23,600	\$ 36,130	\$ 43,230	45,310	390	72%
11-1021	General and Operations Managers	ENHANCED SKILLS	BA+ REQUIRED	FAVORABLE	\$ 72,680	\$ 134,720	>166400	44,960	1080	0%
13-2051	Financial Analysts	ENHANCED SKILLS	BA+ REQUIRED	FAVORABLE	\$ 56,600	\$ 86,290	\$ 122,500	24,080	560	75%
13-1073	Training and Development Specialists	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	FAVORABLE	\$ 37,070	\$ 57,380	\$ 72,610	6,350	240	42%
17-2071	Electrical Engineers	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	LEAST FAVORABLE	\$ 63,010	\$ 92,830	\$ 110,640	2,190	60	17%

**Green Construction: Design, Building, Upgrading, and Retrofitting of Green Buildings**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
47-2011	Boilermakers	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 16,840	\$ 22,690	\$ 30,400	34,190	1090	0%
47-2031	Carpenters	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 33,310	\$ 55,630	\$ 70,740	22,560	500	38%
47-2111	Electricians	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 41,420	\$ 65,650	\$ 84,540	19,520	710	30%
49-9098	Helpers--Installation, Maintenance, and Repair Workers	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 19,810	\$ 37,180	\$ 44,230	4,150	120	17%
53-7051	Industrial Truck and Tractor Operators	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 21,730	\$ 31,950	\$ 39,900	3,970	100	0%
17-3011	Architectural and Civil Drafters	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 37,140	\$ 49,420	\$ 60,860	3,610	120	17%
47-2073	Operating Engineers and Other Construction Equipment Operators	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 55,130	\$ 84,310	\$ 92,740	2,710	60	17%
51-4121	Welders, Cutters, Solderers, and Brazers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 21,990	\$ 33,660	\$ 45,950	2,250	50	0%
47-3012	Helpers--Carpenters	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 18,150	\$ 25,180	\$ 32,900	1,940	80	38%
47-2051	Cement Masons and Concrete Finishers	IN DEMAND	LESS THAN BA	FAVORABLE	na	na	na	1,740	70	29%
47-2221	Structural Iron and Steel Workers	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 38,420	\$ 82,500	\$ 93,090	1,370	60	17%
51-2041	Structural Metal Fabricators and Fitters	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 19,020	\$ 31,050	\$ 45,860	1,040	20	0%
47-2131	Insulation Workers, Floor, Ceiling, and Wall	IN DEMAND	LESS THAN BA	FAVORABLE	na	na	na	310	10	0%
17-1012	Landscape Architects	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
19-3051	Urban and Regional Planners	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
47-4011	Construction and Building Inspectors	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
49-9042	Maintenance and Repair Workers, General	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 23,600	\$ 36,130	\$ 43,230	45,310	390	72%
47-2152	Plumbers, Pipefitters, and Steamfitters	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 36,260	\$ 58,330	\$ 76,580	12,670	430	40%
11-9021	Construction Managers	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	VERY FAVORABLE	\$ 64,640	\$ 106,440	\$ 144,870	11,460	280	36%

**Green Construction, Continued**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
47-2061	Construction Laborers	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 26,070	\$ 53,790	\$ 63,010	16,930	280	54%
17-1011	Architects, Except Landscape and Naval	ENHANCED SKILLS	BA+ REQUIRED	FAVORABLE	\$ 49,700	\$ 72,110	\$ 94,880	7,040	260	50%
13-1073	Training and Development Specialists	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	FAVORABLE	\$ 37,070	\$ 57,380	\$ 72,610	6,350	240	42%
17-2051	Civil Engineers	ENHANCED SKILLS	BA+ REQUIRED	LEAST FAVORABLE	\$ 55,690	\$ 77,350	\$ 94,700	5,130	220	36%
13-1051	Cost Estimators	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 52,260	\$ 74,400	\$ 90,030	3,700	150	47%
47-2211	Sheet Metal Workers	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 32,350	\$ 66,720	\$ 78,490	2,550	70	14%
17-2071	Electrical Engineers	ENHANCED SKILLS	BA PREFERRED NOT REQUIRED	LEAST FAVORABLE	\$ 63,010	\$ 92,830	\$ 110,640	2,190	60	17%
47-2181	Roofers	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 26,510	\$ 37,850	\$ 60,230	1,750	70	43%
47-4041	Hazardous Materials Removal Workers	ENHANCED SKILLS	LESS THAN BA	LEAST FAVORABLE	<i>na</i>	<i>na</i>	<i>na</i>	1,660	60	33%
17-2141	Mechanical Engineers	ENHANCED SKILLS	BA+ REQUIRED	LEAST FAVORABLE	\$ 53,910	\$ 72,160	\$ 86,680	1,630	60	33%
51-8013	Power Plant Operators	ENHANCED SKILLS	LESS THAN BA	LEAST FAVORABLE	\$ 55,010	\$ 70,020	\$ 75,200	580	20	0%

**Recycling and Waste Reduction: Recycling and Solid Waste and Wastewater Management, Treatment, and Reduction**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
47-4041	Hazardous Materials Removal Workers	ENHANCED SKILLS	LESS THAN BA	LEAST FAVORABLE	<i>na</i>	<i>na</i>	<i>na</i>	1,660	60	33%
53-7081	Refuse and Recyclable Material Collectors	ENHANCED SKILLS	BA+ REQUIRED	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>	<i>na</i>

**Manufacturing: Green Products and Energy Efficient Manufacturing Process**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
17-3023	Electrical and Electronic Engineering Technicians	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 58,190	\$ 67,980	\$ 71,030	2,940	60	0%
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 16,840	\$ 22,690	\$ 30,400	34,190	1090	0%
49-1011	First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 48,270	\$ 70,800	\$ 81,510	7,970	190	0%
43-5061	Production, Planning, and Expediting Clerks	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 32,740	\$ 45,750	\$ 55,160	6,960	220	14%
51-1011	First-Line Supervisors/Managers of Production and Operating Workers	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 30,520	\$ 51,700	\$ 65,580	6,690	110	0%
51-2092	Team Assemblers	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 15,820	\$ 19,970	\$ 27,790	6,430	130	0%
51-4121	Welders, Cutters, Solderers, and Brazers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 21,990	\$ 33,660	\$ 45,950	2,250	50	0%
49-9041	Industrial Machinery Mechanics	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 31,450	\$ 44,860	\$ 53,510	1,710	30	0%
47-2221	Structural Iron and Steel Workers	IN DEMAND	LESS THAN BA	VERY FAVORABLE	\$ 38,420	\$ 82,500	\$ 93,090	1,370	60	17%
19-2031	Chemists	IN DEMAND	BA+ REQUIRED	LEAST FAVORABLE	\$ 43,840	\$ 59,620	\$ 80,770	1,200	30	0%
11-3051	Industrial Production Managers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 70,850	\$ 100,140	\$ 130,510	1,150	40	0%
51-2022	Electrical and Electronic Equipment Assemblers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 17,730	\$ 26,990	\$ 36,020	910	20	0%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	IN DEMAND	LESS THAN BA	FAVORABLE	\$ 27,690	\$ 40,930	\$ 49,920	550	20	0%
17-2111	Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	IN DEMAND	BA PREFERRED NOT REQUIRED	LEAST FAVORABLE	\$ 57,170	\$ 79,130	\$ 91,480	460	20	50%
49-9042	Maintenance and Repair Workers, General	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 23,600	\$ 36,130	\$ 43,230	45,310	390	72%
43-5071	Shipping, Receiving, and Traffic Clerks	ENHANCED SKILLS	LESS THAN BA	VERY FAVORABLE	\$ 18,190	\$ 27,210	\$ 35,160	15,480	370	0%
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 47,870	\$ 83,500	\$ 110,400	6,060	160	19%
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 16,830	\$ 27,240	\$ 37,540	3,070	50	0%
47-2211	Sheet Metal Workers	ENHANCED SKILLS	LESS THAN BA	FAVORABLE	\$ 32,350	\$ 66,720	\$ 78,490	2,550	70	14%

**Manufacturing continued**

SOC CODE	TITLE	STATUS	EDUCATION REQ	NYC OUTLOOK	WAGES			JOBS		
					Entry	Median	Experienced	2006	Openings	% New
17-3024	Electro-mechanical Technicians	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
17-3026	Industrial Engineering Technicians	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
19-2032	Material Scientists	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
19-4031	Chemical Technicians	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
27-1021	Commercial and Industrial Designers	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
29-9011	Occupational Health and Safety Specialists	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
29-9012	Occupational Health and Safety Technicians	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
49-9044	Millwrights	IN DEMAND	BA+ REQUIRED	na	na	na	na	na	na	na
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 18,810	\$ 27,800	\$ 37,040	1,270	20	0%
51-2031	Engine and Other Machine Assemblers	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 19,020	\$ 31,050	\$ 45,860	1,040	20	0%
51-2041	Structural Metal Fabricators and Fitters	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 16,610	\$ 23,820	\$ 30,790	970	20	0%
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	IN DEMAND	BA+ REQUIRED	LEAST FAVORABLE	\$ 34,290	\$ 59,730	\$ 76,070	560	10	0%
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	IN DEMAND	LESS THAN BA	LEAST FAVORABLE	\$ 28,590	\$ 38,430	\$ 45,820	400	10	0%
51-4032	Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
51-8091	Chemical Plant and System Operators	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
51-9011	Chemical Equipment Operators and Tenders	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
51-9012	Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	ENHANCED SKILLS	BA+ REQUIRED	na	na	na	na	na	na	na
51-9023	Mixing and Blending Machine Setters, Operators, and Tenders	ENHANCED SKILLS	LESS THAN BA	LEAST FAVORABLE	\$ 34,660	\$ 59,790	\$ 75,620	280	10	0%

**SOURCE | O\*NET, ENHANCED SKILLSBA+ REQUIREDDBA+ REQUIRED9. Greening of the World of Work: Implications for O\*NET SOC and New and Emerging Occupations, Prepared for the U.S. Department of Labor Employment and Training Administration, Office of Workforce Investment.ENHANCED SKILLSBA+ REQUIREDDBA+ REQUIRED6-ENHANCED SKILLSBA+ REQUIREDIN DEMAND6 Occupational Outlooks and Staffing Patterns from the New York State Department of Labor.**