

Appendix One: Case Study of Boeing Vertol

In the annals of conversion history, the words “Boeing Vertol” occupy a special, unhallowed space. During the defense downturn, as the Vietnam War was winding down, Boeing decided to get into the mass transit business, winning a contract to build light rail cars for the City of Boston. The result was a very public failure that has become the poster child for misguided conversion attempts ever since. Cars derailed on the tight turns in Boston’s downtown. They were in the shop as much as they were on the streets. Doors malfunctioned and electrical systems shorted out.

Boeing Vertol was certainly a cautionary tale. Its lessons come down to the need for defense contractors seeking to enter civilian markets to understand and adapt to the unique requirements of these new markets and the new products, rather than cutting corners to apply the requirements of the defense market where they don’t belong.

Among the reasons Boeing Vertol produced bad subway cars:

- Doors built of materials that could withstand the stresses of supersonic flight speed could not withstand the kicks of passengers on a platform.
- Cars were brought into service before they had been fully tested. “Concurrency;” that is, simultaneous construction and testing, is common practice in the defense industry.

- The one-size-fits-all approach of building military planes was applied here—one light rail design was contracted for multiple cities. Each city, it turned out, had requirements of its own.

The snapshot of conversion failure has endured. But the end of the story is seldom told. In fact, Boeing learned from these mistakes, and produced subway cars for Chicago that are only now going into graceful retirement 30 years later. But soon after they delivered this successful product, Boeing decided during the Reagan military build-up to do a U-turn and exit the field. Soon the U.S. mass transit market was almost wholly supplied by foreign firms, as it remains today: by Alstom (principally based in France), Bombardier (Canada) and Kawasaki (Japan).

The surge of our military industrial policy, in other words, had undermined the growth of this critical piece of a green industrial policy. And the lesson, “Defense contractors can’t make subway cars” was learned—even though Boeing itself had proved that in fact, they can.

Mass transit is one of the elements of a green economy with the strongest potential for defense contractors. Building mass transit systems are large, complicated enterprises involving the integration of many component parts. The contracts are likewise large and complicated. One of the reasons that the Bush administration chose major defense contractors to organize the building of its security fence across the Mexican border

was not that these companies knew anything about building fences, but that they knew “systems integration.”

Thanks to our military industrial policy, in fact, they are pretty much the only U.S. manufacturers who do. The principal builders of rail cars in the early part of the 20th century, Pullman and Budd, largely left the business because the new mass transit market incorporated complex electronics that these companies didn't do well. And complex electronics is where military contractors have been developing a strong comparative advantage for decades.

Appendix 2: Weapon Systems and Local Green Initiatives-A Partial List

State	Location	Weapon System	Contracting Company	Local Green Technology Initiatives and Resources
Alabama	Statewide			www.al-solar.org
	Huntsville Area			
	Huntsville	V-22 Osprey	SCI Systems Inc	Local Initiatives
				-Green 13 Committee: Mayor's Council for Sustainable Energy
				http://www.hsvcity.com/green/green_13.php
Arizona	Statewide			www.arizonasolarindustry.org
	Phoenix Area			
	Phoenix	C-17 Globemaster	L-3 Communications	Local Initiatives
				- Phoenix is hosting the 2010 solar summit.
				- Green Chamber of Commerce fosters green industry development.
				Federal Resources
				-ASU: Solar energy/ionic liquid battery research, Funded by Recovery Act.
		F-22 Raptor	Honeywell International Inc.	
		V-22 Osprey	Honeywell Air Transport Systems	
			AiResearch	

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	Tempe	C-130J Hercules	Honeywell	Federal Resources
				-Salt River Project Agricultural Improvement and Power District, Funded by Recovery Act.
				-City of Tempe: Energy Efficiency and Conservation, Funded by Recovery Act.
	Tucson Area			
	Tucson	C-17 Globemaster	Aerofit	Federal Resources
				-University of Arizona: Hybrid Solar-Electric Materials/Solar energy conversion, Funded by Recovery Act.
				-City of Tucson—Energy Efficiency and Conservation—Funded by Recovery Act.
California	Statewide			www.calseia.org
	Northern California			www.norcal solar.org
	Los Angeles Area			
	Anaheim	C-17 Globemaster	Pacific Contours	Federal Resources
				City of Anaheim: Energy Efficiency and Conservation, Funded by Recovery Act.
		Trident II	Boeing Co.	

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	Brea	V-22 Osprey	Kaiser Compositek, Inc.	Federal Resources
				-City of Brea: Energy Efficiency/Conservation, Funded by Recovery Act.
	Chatsworth	C-17 Globemaster	Ontic	
		V-22 Osprey	Hydraulics International, Inc	
	Compton/El Segundo	C-17 Globemaster	Coast Metal Craft	
	Costa Mesa	C-17 Globemaster	J.D. Lincoln	
		Virginia Class Submarine	Delphi Engineering	
	Diamond Bar	C-17 Globemaster	Goodrich Sensors & Integrated Systems	Federal Resources
				-City of Diamond Bar: Energy Efficiency/Conservation, Funded by Recovery Act.
	El Monte	C-17 Globemaster	Precision Coil Spring Co.	
	El Segundo	F-22 Raptor	Raytheon Texas Instruments	
			Hughes Radar Systems	
		Trident II	Hughes Aircraft Co.	
		V-22 Osprey	Hughes Aircraft Co.	
	Gardena	C-17 Globemaster	Hitco Carbon Composites, Inc.	
	Huntington Beach	DDX Destroyer	Boeing	
	Inglewood	F-22 Raptor	Marvin Engineering	Federal Resources
				-City of Inglewood: Energy Efficiency/Conservation, Funded by Recovery Act.

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	Irvine	V-22 Osprey	Parker Aerospace	
	Long Beach	C-17 Globemaster	Boeing	Federal Resources
				-Hydrogen Energy California LLC: Low-emission Coal Research, Funded by Recovery Act.
	Los Alamitos	C-17 Globemaster	Arrowhead Plastics	Local Initiatives
				- Edison installing 16,300 solar panels.
	Los Angeles	C-17 Globemaster	California Drop Forge	Local Initiatives
				http://www.cleantechlosangeles.org/
				http://www.cleantechlosangeles.org/projects/#story_3
				Federal Resources
				-City of Los Angeles: Energy Efficiency/Conservation, Funded by Recovery Act.
				-City of Los Angeles: Smart Grid, Funded by Recovery Act.
		F-22 Raptor	Fansteel Inc's California Drop Force Division	-University of Southern California: Solar Research, Funded by Recovery Act.
	Monrovia	C-17 Globemaster	Roncelli Plastics	
	North Hollywood	C-17 Globemaster	Whittaker Controls Inc.	
	Northridge	F-22 Raptor	Teledyne Tech	

Green Dividend

	Palmdale	F-22 Raptor	Lockheed Martin Aeronautical Systems	
	Santa Ana	C-17 Globemaster	GE Aviation Systems	Federal Resources
				-City of Santa Ana: Energy Efficiency Retrofits, Funded by Recovery Act.
				-Over 650 CleanTech Firms in region
				-Strengths in Solar, Bio-tech, Life Sciences
				-Infrastructure in place for the acceleration of Green-Tech in San Diego
	Santa Monica	F-22 Raptor	BAE Systems Electronics and Integrated Solutions	Federal Resources
				-City of Santa Monica: Energy Efficiency/Retrofit/ Solar Research, Funded by Recovery Act.
	Torrance	F-22 Raptor	Honeywell International Inc.	Federal Resources
		V-22 Osprey	Moog, Inc-Aircraft Group	-City of Torrance: Energy Conservation Projects, Funded by Recovery Act.
	Valencia	F-22 Raptor	Aerospace Dynamics	
	Yorba Linda	V-22 Osprey	Smiths Aerospace Electronic Systems - Yorba Linda Inc.	Federal Resources
				-City of Yorba Linda: Energy Efficiency/Conservation, Funded by Recovery Act.

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	San Diego Area			
	El Cajon	C-17 Globemaster	GKN Aerospace-Stellex	
	San Diego	F-22 Raptor	Northrop Grumman	Local Initiatives
				- http://www.cleantech-sandiego.org/
			TRW Radio Systems Unit	-San Diego State University: CO2 Subsurface Modeling, Funded by Recovery Act.
	San Francisco/San Jose Area			
	Livermore	Nuclear	Lockheed Martin-Sandia Corporation (Sandia National Laboratory)	Federal Resources
			University of California, Board of Regents (Lawrence Livermore National Laboratory)	-Lawrence Livermore National Security, LLC (multiple contracts): Advanced Fuels Research, Funded by Recovery Act.
	Morgan Hill	Virginia Class Submarine	EDO Corporation	Federal Resources
				-City of Morgan Hill: Diode Lamp Technology, Funded by Recovery Act.
	San Jose	F-22 Raptor	Kaiser Electronics	Federal Resources
				-City of San Jose: Energy Efficiency/Solar Program, Funded by Recovery Act.
				-Silicon Genesis Corp.: Novel Kerf-Free PV Wafering, Funded by Recovery Act.

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	Santa Rosa	F-22 Raptor	SenarioTek LLC	Federal Resources
				-City of Santa Rosa: Energy Efficiency/Conservation, Funded by Recovery Act.
	Sunnyvale	Trident II	Lockheed Missiles and Space Co., Inc	Federal Resources
				-City of Sunnyvale: Energy Efficiency/Conservation, Funded by Recovery Act.
			Northrop Grumman Corporation	-Symyx Technologies, INC. (multiple contracts): Geothermal Research, Funded by Recovery Act.
	Walnut Creek	V-22 Osprey	Systron Donner	Federal Resources
				-City of Walnut Creek: Energy Efficiency/Conservation, Funded by Recovery Act.
Colorado	Statewide			www.coseia.org
	Denver Area			State Resources
				- New renewable energy bill:
	Lafayette	V-22 Osprey	Eaton Corporation	
Connecticut	Hartford Area			Local Initiatives
				- Solar One farm in Preston: MSGI Energy, Recovery Act.
	East Hartford	F-22 Raptor	Pratt & Whitney	Federal Resources
				Town of East Hartford: Energy Efficiency/Conservation, Funded by Recovery Act.

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				- United Technologies Corporation: CO2 management through synthetic carbonic anhydrase mechanism research, Funded by Recovery Act.
				- Weatherization Assistance Program, Funded by Recovery Act.
	Windsor	F-22 Raptor	Hamilton Standard	
		Nuclear	Lockheed Martin-KAPL, Inc (Knolls Atomic Power Laboratory)	
		V-22 Osprey	Barnes Aerospace, Barnes Group Inc.	
	Norwalk Area			
	Darien	F-22 Raptor	Howmet Castings	
	Groton	Virginia Class Submarine	General Dynamics Electric Boats	
	Norwalk	C-130J Hercules	Northrup Grumman Electronics Systems	Federal Resources
				City of Norwalk: Energy Efficiency/Conservation and Renewable Energy, Funded by Recovery Act.
Florida	Statewide			http://www.nrdc.org/energy/renewables/florida.asp
				www.cleanenergyflorida.org
	Jacksonville Area			
	Jacksonville	Virginia Class Submarine	Goodrich Corporation Polymer Products Division	Federal Resources

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				-SAFT America INC.: Storage Battery Manufacturing, Funded by Recovery Act.
				-Reynolds, Smith and Hills, INC.: Energy Efficiency Application, Funded by Recovery Act.
	Miami Area			
	West Palm Beach	F-22 Raptor	Pratt & Whitney	Federal Resources
				-Catalfumo Construction LTD: Energy Efficiency/Conservation, Funded by Recovery Act.
	Orlando Area			
	Melbourne	F-22 Raptor	Harris Corporation	
			Pratt & Whitney	
	Orlando	F-22 Raptor	DME Corporation	Federal Resources
				-City of Orlando: Energy Efficiency/Conservation, Funded by Recovery Act.
	St. Petersburg Area			
	Clearwater	F-22 Raptor	GE Aviation (Smiths Aerospace)	Federal Resources
				-City of Clearwater: Energy Efficiency/Retrofitting and Training, Funded by Recovery Act.
	Fort Myers	V-22 Osprey	Eaton Corporation	
	St. Petersburg	DDX Destroyer	Raytheon Systems Company	

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Georgia	Atlanta Area			
	Marietta	C-130J Hercules	Lockheed Martin Aeronautics Company	Federal Resources
				-City of Atlanta: Creation of Sustainability Division/ Sustainable Homes and Energy Initiative, Retrofit Municipal Buildings, Georgia Solar Energy Association Outreach, Funded by Recovery Act.
				-Weatherization Assistance Program: Funded by Recovery Act.
		F-22 Raptor	Lockheed Martin Aeronautical Systems	-Georgia Power Co.: Smart Grid/Enhancement of Electric Grid, Funded by Recovery Act.
	Milledgeville	V-22 Osprey	Vought Aircraft Industries	
	Rockmart	V-22 Osprey	Engineered Fabrics Corp.	
	Savannah Area			Federal Resources
				-City of Savannah: Energy Efficiency Retrofits, Funded by Recovery Act.
	King's Bay	Trident II	Northrop Grumman Corporation	
Idaho	Idaho Falls Area			
	Idaho Falls	Nuclear	Bechtel BWXT Idaho, LLC, Bechtel Bettis, Inc, University of Chicago (Idaho National Engineering and Environment Laboratory)	Federal Resources

Green Dividend

				-Multiple contracted companies: Deactivation and Decommissioning of EM facilities, Funded by Recovery Act.
				-Bechtel BWXT Idaho, LLC: Processing and disposal of CH, TRU and LLW waste from Idaho National Laboratory, Funded by Recovery Act.
Illinois	Statewide			www.illinoisrenew.org
	Chicago Area			
	Argonne	Nuclear	University of Chicago (Argonne National Laboratory)	Federal Resources
				-University of Chicago, ANL/multiple contracting companies: Advanced Photon Source research, Funded by Recovery Act.
				-University of Chicago: ANL, LLC/multiple contracting companies; Accelerated Cleanup of Surplus Nuclear Facilities Project, Funded by Recovery Act.
				-U Chicago, ANL, LLC/ multiple contracting companies: Science Laboratories Infrastructure, Funded by Recovery Act.

	Rolling Meadows	V-22 Osprey	Northrop Grumman Defensive Systems Division	
Indiana	State-wide			http://www.nrdc.org/energy/renewables/indiana.asp
	Indianapolis Area			
	Fort Wayne	DDX Destroyer	Raytheon Systems Company	Federal Resources
				-City of Fort Wayne: Energy Efficiency/Conservation. Funded by Recovery Act.
	Indianapolis	C-130J Hercules	Allison AE	Federal Resources
		V-22 Osprey	Allison Engine Co.: Rolls-Royce Corporation	-Allison Transmission, INC.: Project Hybrid Truck Drive, Funded by Recovery Act.
			Raytheon	-Indiana Builders Association INC.: Home Weatherization Project, Funded by Recovery Act.
Iowa	Des Moines Area			
	Ames	Nuclear	Iowa State University (Ames Laboratory)	Federal Resources
				-City of Ames: Architectural/Engineering for Major Energy Efficiency Improvements, Funded by Recovery Act.
				-Boone Construction INC. (multiple contracted companies): Infrastructure Upgrades, Funded by Recovery Act.

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Kansas	Kansas City Area			
	Olathe	V-22 Osprey	Eaton Corporation	Federal Resources
				-City of Olathe: Energy Efficiency/Conservation, Funded by Recovery Act.
Maine	Statewide			www.renewablemaine.org
	Portland Area			Federal Resources
				-City of Portland: Energy Efficiency/Conservation, Funded by Recovery Act.
	Bath	DDX Destroyer	General Dynamics Bath Iron Works	
	Saco	F-22 Raptor	General Dynamics Armament and Technical Products	
Maryland	Annapolis Area			Federal Resources
				-Maryland Energy Administration: Clean Energy Economic Development/ Alternative Fuel/Vehicle Programs, Funded by Recovery Act.
				-City of Annapolis: Upgrade Municipal Infrastructure, Funded by Recovery Act.
	Lexington Park	V-22 Osprey	Eagan, McAllister Inc.	
	Baltimore Area			
	Baltimore	C-130J Hercules	Northrup Grumman Electronics Systems	Federal Resources
		F-22 Raptor	Northrup Grumman Electronic Sensors and Systems Division (ESSD)	-Baltimore Gas & Electric Co.: Smart Grid Initiative, Funded by Recovery Act.

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		V-22 Osprey	Middle River Aircraft Systems	-City of Baltimore: Weatherization Assistance Program, Funded by Recovery Act.
		Virginia Class Submarine	Northrop Grumman Oceanic and Naval Systems	-Energy Efficiency/Conservation, Funded by Recovery Act.
	Columbia	Virginia Class Submarine	3Phoenix Inc.	
	Germantown	F-22 Raptor	GE Aviation (Smiths Aerospace)	Federal Resources
				-Energy Enterprise Solutions, LLC: Smart Grid Technical Support, Funded by Recovery Act.
				-Advanced Technologies and Laboratories International: Nuclear Materials Stabilization Project Engineering Division, Funded by Recovery Act.
	Patuxent River	V-22 Osprey	Bell Boeing (of Textron Bell Helicopters and Boeing)	
	Rockville	Trident II	BAE Systems Applied Technologies Inc.	Federal Resources
				-City of Rockville: Energy Efficiency/Conversion & Conservation, Funded by Recovery Act.
				-Simonson Management Services: Weatherization Assistance Program, Funded by Recovery Act.

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Massachusetts	Boston Area			Federal Resources
				-City of Boston: Energy Efficiency/Conservation, Funded by Recovery Act.
				-Clean Energy Technology Center: Large Wind Turbine Blade Test Facility, Funded by Recovery Act.
	Cambridge	Trident II	Charles Stark Draper Laboratory	Federal Resources
				-City of Cambridge: Community Energy Efficiency Incentive Program, Funded by Recovery Act.
				-MIT (multiple contracts): C-MOD Fusion Research, Funded by Recovery Act.
				-Fastcap Systems Co.: Research and Development of Nanotube Enhanced Ultracapacitor, Funded by Recovery Act.
	Newburyport	Virginia Class Submarine	L-3 Communications SPD Technologies Group (Henschel Unit)	
	Sudbury	DDX Destroyer	Raytheon Systems Company	
	Springfield Area			Federal Resources
				-City of Springfield: Municipal Building Retrofitting, Funded by Recovery Act.

	Northampton	Virginia Class Submarine	Kollmorgen Corporation-Electro-Optical Division	
	Pittsfield	Trident II	General Dynamics Advanced Information Systems	
Michigan	Statewide			http://www.nrdc.org/energy/renewables/michigan.asp
	Detroit Area			
	Troy	C-17 Globemaster	Beaver Aerospace & Defense Corp.	Local Initiatives
				-Detroit Area Clean Cities Coalition, sponsored by US Department of Energy pushes for biofuels, and electric vehicles
				-Solar panel manufacturing, fuel cell development by Delphi, a Troy based firm.
				http://delphi.com/
	Grand Rapids Area			
	Grand Rapids	C-130J Hercules	GE-Aviation	Federal Resources
		F-22 Raptor	GE Aviation (Smiths Aerospace)	-A123 Systems, INC.: Mass Production of Automotive Class Lithium Ion Batteries, Funded by Recovery Act.
		V-22 Osprey	Smiths Industries	

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Minnesota	Statewide			www.mnseia.org
	Minneapolis/St. Paul Area			Federal Resources
				-3M Company: Photovoltaic Systems Research, Funded by Recovery Act.
				-Minnesota Department of Commerce: Weatherization Assistance Program, Funded by Recovery Act.
	Burnsville	C-130J Hercules	Goodrich Corporation	Federal Resources
				-City of Burnsville: Energy Efficiency/Conservation, Funded by Recovery Act.
	Eagan	DDX Destroyer	Lockheed Martin	Federal Resources
		Virginia Class Submarine	Lockheed Martin	-City of Eagan: Energy Efficiency/Conservation. Funded by Recovery Act.
	Fridley	Virginia Class Submarine	United Defense	
	Minneapolis	DDX Destroyer	BAE Systems Land and Armaments	Federal Resources
				-City of Minneapolis: Energy Efficiency/Conservation, Funded by Recovery Act.
		Virginia Class Submarine	BAE Systems	
			United Defense	
Mississippi	Biloxi Area			
	Pascagoula	DDX Destroyer	Northrop Grumman Ship Systems	
	Meridian Area			
	Meridian	C-130J Hercules	Lockheed Martin Aeronautics Company	Federal Resources

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				-City of Meridian: Energy Efficiency/Conservation, Funded by Recovery Act.
		F-22 Raptor	Lockheed Martin Tactical Aircraft Systems	
Missouri	Statewide			http://www.nrdc.org/energy/renewables/missouri.asp
				www.moseia.org
	Kansas City Area			
	Kansas City	Nuclear	Honeywell Federal Manufacturing and Technologies (Kansas City Plant)	Federal Resources
				-Kansas City: Energy Efficiency/Conservation, Funded by Recovery Act.
				-Missouri Dept. of Natural Resources: Weatherization Assistance Program, Funded by Recovery Act.
				-Metropolitan Energy Center INC.: Midwest Region Alternative Fuels Project, Funded by Recovery Act.
Nevada	Statewide			http://www.nrdc.org/energy/renewables/nevada.asp
	Las Vegas			Local Initiatives
				-Proposed natural gas/solar plant: Sithe Global Power of Houston

Green Dividend

	Las Vegas	Nuclear	Bechtel Nevada Corporation, Johnson Controls Nevada, Lockheed Martin Nevada Technologies, Wackenhut Services (Nevada Test Site)	Federal Resources
				-City of Las Vegas: Energy Efficiency/Conservation, Funded by Recovery Act.
				-NV Energy, INC.: Smart Grid; The Advanced Service Delivery Project, Funded by Recovery Act.
			Bechtel/SAIC Company, LLC (Yucca Mountain Project)	
New Hampshire	Manchester Area			Federal Resources
				-City of Manchester: Loan Fund for Local Businesses Engaging in Energy Related Projects, Funded by Recovery Act.
	Nashua	C-130J Hercules	BAE Systems IEWS	Federal Resources
		F-22 Raptor	Lockheed Sanders	-City of Nashua: Energy Efficiency/Conservation, Funded by Recovery Act.
	Portsmouth	Virginia Class Submarine	Portsmouth Naval Shipyard	
	Rochester	C-17 Globemaster	Ashland Electric Products, Inc.	Local Initiatives
				-In the process of becoming a partner of the clean cities program.

				http://www.granitestatecleancities.nh.gov/
				-Multiple solar cell manufacturers within 50 miles of the city
				http://www.solarpowerdirectory.com/city/NewHampshire.html
	Salem	Virginia Class Submarine	Stocker Yale Inc.	
New Jersey	Newark Area			Federal Resources
				-City of Newark: Energy Efficiency/Conservation, Funded by Recovery Act.
	Clifton	V-22 Osprey	ITT Avionics	Federal Resources
				-City of Clifton: Energy Efficiency/Conservation, Funded by Recovery Act.
	Oakland	Virginia Class Submarine	Instrumental Engineering	
	Paramus	V-22 Osprey	Metal Improvement Co.	
	Phillipsburg	Virginia Class Submarine	Curtiss-Wright	
	Wayne	V-22 Osprey	Kearfott Guidance & Navigation Corp	
	Trenton Area			Local Initiatives
				- New solar installation in Willingboro:
				Federal Resources
				-New Jersey Department of Treasury: Board of Public Utilities Clean Energy Program, Funded by Recovery Act.

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				-New Jersey Department of Community Affairs: Weatherization/Conservation Program, Funded by Recovery Act.
	Moorestown	DDX Destroyer	Lockheed Martin	
New Mexico	Statewide			www.reia-nm.org
	Albuquerque Area			
	Albuquerque	C-130J Hercules	Honeywell	Federal Resources
		Nuclear	Lockheed Martin-Sandia Corporation (Sandia National Laboratory)	-City of Albuquerque: Energy Efficiency/Conservation, Funded by Recovery Act.
		V-22 Osprey	Honeywell Defense Avionics Systems	
	Los Alamos	Nuclear	University of California, Board of Regents (Los Alamos National Laboratory)	Federal Resources
				-Los Alamos National Security, LLC (multiple contracts): D&D/Cleanup of inactive facilities at LANL Delta Prime site, Funded by Recovery Act.
	Carlsbad Area			
	Carlsbad	Nuclear	Westinghouse TRU Solutions, LLC, L&M Technologies, Inc. (Waste Isolation Pilot Plant)	Federal Resources
				-City of Carlsbad: Energy Efficiency/Electric Municipal Vehicles Program, Funded by Recovery Act.

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				-Washington TRU Solutions, LLC (multiple contracts): Transuranic Waste Shipping and Disposal, Funded by Recovery Act.
New York	Statewide Solar			www.liseia.org
				www.nyseia.org
	Albany Area			Federal Resources
				-New York State Division of Housing and Community Renewal (multiple grants): Weatherization Assistance Program, Funded by Recovery Act.
	Niskayuna	Nuclear	Lockheed Martin-KAPL, Inc (Knolls Atomic Power Laboratory)	Federal Resources
				-Accelerated Remediation Co.: Environmental restoration of nuclear/chemically contaminated areas, Funded by Recovery Act.
	West Milton	Nuclear	Lockheed Martin-KAPL, Inc (Knolls Atomic Power Laboratory)	
	Long Island Area			
	Amityville	F-22 Raptor	ITT/EDO Corporation	

Green Dividend

	Upton	Nuclear	Brookhaven Science Associates, Bechtel National, Inc, Duke Engineering and Services Waste Management Federal Services Inc (Brookhaven National Laboratory)	Federal Resources
				-Brookhaven Science Associates, LLC (multiple contracts): Infrastructural Improvements at Brookhaven National Laboratory, Funded by Recovery Act.
	Rochester Area			Federal Resources
				-City of Rochester: Energy Efficiency/Conservation, Funded by Recovery Act.
	East Farmington	Virginia Class Submarine	Curtiss-Wright	
	Syracuse Area			
	Johnson City	V-22 Osprey	BAE Systems	
	Norwich	V-22 Osprey	GE Aviation	
	Syracuse	DDX Destroyer	Lockheed Martin	
		Virginia Class Submarine	Lockheed Martin	
	Utica	V-22 Osprey	Goodrich Corporation	
North Carolina	Charlotte Area			
	Charlotte	F-22 Raptor	Keller Technology Corps	Federal Resources
				-City of Charlotte: Energy Efficiency/Conservation, Funded by Recovery Act.

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	Gastonia	V-22 Osprey	Curtiss-Wright Flight Systems, Inc.	Federal Resources
				-City of Gastonia: Energy Efficiency/Conservation, Funded by Recovery Act.
	Shelby	F-22 Raptor	Curtiss-Wright Corporation	
	Raleigh Area			Federal Resources
				-Duke University: Next Generation Photovoltaics Research, Funded by Recovery Act.
	Wake Forest	Virginia Class Submarine	3Phoenix Inc.	
Ohio	Statewide			http://www.nrdc.org/energy/renewables/ohio.asp
	Cincinnati Area			Federal Resources
				-Ohio Department of Communications Development: Weatherization Assistance Program, Funded by Recovery Act.
	Cincinnati	V-22 Osprey	Surface Enhancement Technologies	Federal Resources
				-City of Cincinnati: Energy Efficiency/Conservation, Funded by Recovery Act.

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				-Duke Energy Business Services LLC: Smart Grid Deployment Project, Funded by Recovery Act.
	Cleveland Area			State Resources
				- New wind projects: Buckeye Wind
	Cleveland	C-17 Globemaster	Eaton Aerospace	Local Initiatives
				-Cleantech is the fastest growing sector of Cleveland's economy, capital investments are up more than 200% since 2005
				-Strengths in Wind power manufacturing, hybrid tech public transport systems, smart grid, solar panel manufacturing, and other green-tech manufacturing
			Goodrich Sensors & Integrated Systems	http://www.greenenergyohio.org/page.cfm
		V-22 Osprey	Goodrich Landing Gear Division	Federal Resources
				-City of Cleveland: Energy Efficiency/Conservation, Funded by Recovery Act.
Oklahoma	Tulsa Area			Federal Resources
				-County of Tulsa: Energy Efficiency Capital Improvements Program, Funded by Recovery Act.
	Broken Arrow	V-22 Osprey	Flight Safety International, Simulation Systems Division	Federal Resources

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				-City of Broken Arrow: Municipal Retrofitting/ Solar Unit Installation, Funded by Recovery Act.
Pennsylvania	Statewide			http://www.nrdc.org/energy/renewables/penn.asp
	Philadelphia Area			
	Philadelphia	V-22 Osprey	Bell Boeing (of Textron Bell Helicopters and Boeing)	Federal Resources
				-PECO Energy Co.: Smart Grid Program, Funded by Recovery Act.
				-City of Philadelphia: Energy Efficiency/Conservation, Funded by Recovery Act.
	Ridley Park	V-22 Osprey	Bell Boeing (of Textron Bell Helicopters and Boeing)	
	Valley Forge	DDX Destroyer	Lockheed Martin	
	Pittsburgh Area			Federal Resources
				-Leonardo Technologies, INC.: NETL Program and Performance Management, Funded by Recovery Act.
				-City of Pittsburgh: Energy Efficiency Program, Funded by Recovery Act.
				-University of Pittsburgh: CO2 Sensor Development, Funded by Recovery Act.
	Cheswick	Virginia Class Submarine	Curtiss-Wright	

Green Dividend

	Nicktown	V-22 Osprey	Aerofab	
	West Mifflin	Nuclear	Bechtel National Inc (Bettis Atomic Power laboratory)	
Rhode Island	Providence Area			Federal Resources
				-Rhode Island Department of Administration (multiple contracts/grants): Weatherization Assistance Program, Funded by Recovery Act.
				-City of Providence: Energy Efficiency/Conservation, Funded by Recovery Act.
	Portsmouth	Virginia Class Submarine	Raytheon Naval and Maritime Integrated Systems Division	
	Quonset Pt.	Virginia Class Submarine	General Dynamics Electric Boats	
South Carolina	Columbia Area			
	Aiken	Nuclear	Savannah River Nuclear Solutions, LLC (Fluor Federal Services, Inc., Honeywell International, Inc., and Newport News Shipbuilding and Drydock Company), Nuclear Fuel Services (Savannah River Site)	Federal Resources

				-Savannah River Nuclear Solutions, LLC (multiple contracts): Deactivate/ Decommission Facilities, Decontamination at Various Site Areas, Funded by Recovery Act.
				-County of Aiken: Building Energy Efficiency Program, Funded by Recovery Act.
	Charleston Area			
	Charleston	F-22 Raptor	Textron Systems AAI Corporation	
Tennessee	Statewide			http://www.nrdc.org/energy/renewables/tenn.asp
	Knoxville Area			Federal Resources
				-City of Knoxville: Energy Efficiency/Conservation, Funded by Recovery Act.
	Erwin	Nuclear	Nuclear Fuel Services, Inc	
	Kingsport	Nuclear	Holston Defense Corporation (Holston Army Ammunition Plant)	

Green Dividend

	Oak Ridge	Nuclear	UT-Battelle, LLC, Bechtel National, Inc, BWXT Y-12, LLC, M-K Ferguson Oak Ridge, Co., Oak Ridge Associated Universities, South- eastern Universities Research Association, Wackenhut Services (Oak Ridge Reserva- tion)	Federal Resources
				-Oak Ridge Associated Universities, INC.: Oak Ridge National Laboratory Small Facilities Decon- tamination and Decom- missioning, Funded by Recovery Act.
				-Bechtel Jacobs Co. LLC (multiple contracts): Oak Ridge Reservation Land- fill Expansion, Funded by Recovery Act.
				-Babcock & Wilcox Technical Services y-12, LLC (multiple contracts): Removal and disposition of all legacy materials in Building 9201-5/prepare for deactivation/decom- mission, Funded by Recovery Act.

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	Nashville Area			
	Nashville	C-130J Hercules	Vought	Federal Resources
				-Tennessee Department of Economic and Community Development (multiple grants): Energy Efficiency/Conservation, Funded by Recovery Act.
		V-22 Osprey	Aerostructures Corp.	-Tennessee Department of Human Services: Weatherization Assistance Program, Funded by Recovery Act.
Texas	Statewide			www.epsea.org
				www.treia.org
	Amarillo Area			
	Amarillo	Nuclear	BWXT Pantex (Pantex Plant)	Federal Resources
		V-22 Osprey	Bell Boeing (of Textron Bell Helicopters and Boeing)	-City of Amarillo: Energy Efficiency/Conservation, Funded by Recovery Act.
	Austin Area			
	Austin	C-130J Hercules	BAE Systems Integrated Defense Solutions	Federal Resources
				-City of Austin: Weatherization Assistance Program, Funded by Recovery Act.
				-Energy Efficiency/Conservation, Funded by Recovery Act.

Green Dividend

				-University of Texas at Austin (multiple contracts/grants): Organic Photovoltaic/Electrical Energy Storage Research, Funded by Recovery Act.
	Dallas/Fort Worth Area			
	Dallas	C-17 Globemaster	Vought Aircraft Industries	Local Initiatives
				-Strengths in Solar manufacturing, wind energy, biofuels.
				Federal Resources
				-City of Dallas: Energy Efficiency/Conservation, Funded by Recovery Act.
		V-22 Osprey	Vought Aircraft Industries	-Weatherization Assistance Program, Funded by Recovery Act.
	Fort Worth	F-22 Raptor	Lockheed Martin Tactical Aircraft Systems	Federal Resources
				-City of Fort Worth: Energy Efficiency/Conservation, Funded by Recovery Act.
				-Weatherization Assistance Program, Funded by Recovery Act.
				Local Initiatives

		V-22 Osprey	Bell Boeing (of Textron Bell Helicopters and Boeing)	-Participant metroplex in Clean Cities: Texas. Coalition uses market based solutions to facilitate the development of renewable energy, alternatives to foreign petroleum.
			EFW, Inc.	http://www.seco.cpa.state.tx.us/alt_cc.htm
	Eules	C-17 Globemaster	Goodrich Interiors	
Utah	Salt Lake City Area			Federal Resources
				-Utah Department of Natural Resources (multiple grants): State Energy Programs-Renewable Energy, Funded by Recovery Act.
				-University of Utah (multiple contracts/grants): Integrated Mid-Continent Carbon Capture, Sequestration and Enhanced Oil Recovery, Funded by Recovery Act.
				-Governor's Office of Economics Development: Weatherization Assistance Program, Funded by Recovery Act.
	Park City	V-22 Osprey	Rolls-Royce Gear Systems	

Green Dividend

Virginia	Norfolk Area			
	Chesapeake	Virginia Class Submarine	Oceaneering International Inc.	Federal Resources
				-City of Chesapeake: Energy Efficiency/Conservation, Funded by Recovery Act.
	Newport News	DDX Destroyer	NG—Newport News	Federal Resources
				-Jefferson Science Associates, LLC (multiple contracts): Lattice Quantum ChromoDynamics Research, Funded by Recovery Act.
		Virginia Class Submarine	Northrop Grumman Newport News Shipbuilding	-City of Newport News: Energy Efficiency/Conservation, Funded by Recovery Act.
	Norfolk	Trident II	Northrop Grumman Corporation	Federal Resources
				-City of Norfolk: Energy Efficiency/Conservation, Funded by Recovery Act.
	Wallops Island	DDX Destroyer	Northrop Grumman Ship Systems	
	Richmond Area			Federal Resources
				-Virginia Department of Housing and Community Development: Weatherization Assistance Program, Funded by Recovery Act.
				-City of Richmond: Energy Efficiency/Conservation, Funded by Recovery Act.

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	Charlottesville	Virginia Class Submarine	Little Marine Systems	
			Northrop Grumman's Sperry Marine	
			Primagraphics	
	Roanoke Area			Federal Resources
				-County of Roanoke: Municipal Infrastructure Retrofitting, Funded by Recovery Act.
	Blacksburg	V-22 Osprey	Northrop Grumman Poly-Scientific	Federal Resources
				-City of Blacksburg: Energy Efficiency/Conservation, Funded by Recovery Act.
			Prime Research LC	-Virginia Tech University (multiple grants): Geologic Sequestration Training and Research Grant Program, Funded by Recovery Act.
	Marion	F-22 Raptor	Advanced Technical Products-Marion Composites	
	Washington Area			Federal Resources
				-City of Alexandria: Energy Efficiency/Conservation, Funded by Recovery Act.
				-Grant Thornton L.L.P.: Advanced Technology Vehicle Manufacturing Loan Program, Funded by Recovery Act.

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	Arlington	C-17 Globemaster	ATK Alliant Techsystems, Inc.	Local Initiatives
				-Biomass, biofuels make up renewable section of economy.
				Advancedbiofuelsusa.info
				Federal Resources
				-County of Arlington: Energy Efficiency/Conservation, Funded by Recovery Act.
				-George Mason University: Electric Power Grid Control Research, Funded by Recovery Act.
	Fairfax	Virginia Class Submarine	3Phoenix Inc.	-County of Fairfax: Energy Efficiency/Conservation, Funded by Recovery Act.
	Falls Church	Virginia Class Submarine	General Dynamics Advanced Information Systems	
	Manassas	DDX Destroyer	Lockheed Martin	Federal Resources
		Virginia Class Submarine	Progeny Systems- Chesapeake Sciences	-City of Manassas: Energy Efficiency/Conservation, Funded by Recovery Act.
	Reston	F-22 Raptor	NCI Inc.	

West Virginia	Clarksburg Area			
	Clarksburg	C-130J Hercules	Lockheed Martin Aeronautics Company	Federal Resources
				-City of Clarksburg: Energy Efficiency Program, Funded by Recovery Act.
Washington	Seattle Area			
	Bremerton	Trident II	Northrop Grumman Corporation	
	Kent	C-17 Globemaster	Exotic Metals Forming Co.	Federal Resources
				-City of Kent: Energy Efficiency Retrofits, Funded by Recovery Act.
	Lynwood	C-17 Globemaster	Crane Aerospace	Local Initiatives
				-Washington Clean Technology Alliance combines investment with emerging green technologies throughout the state.
		V-22 Osprey	ELDEC Corp	http://www.wacleanotech.org
	Redmond King	C-17 Globemaster	Crane Aerospace & Electronics	Local Initiatives
				-Strengths in green construction, clean tech venture capital, biofuels, solar cell manufacturing.
				http://smartercities.nrdc.org/cities/redmond-wa
				Federal Resources
				-City of Redmond: Energy Efficiency/Conservation, Funded by Recovery Act.
		V-22 Osprey	Aerojet General, Propulsion	

Green Dividend

	Seattle	F-22 Raptor	Boeing Integrated Defense Systems	Federal Resources
				-City of Seattle: Energy Efficiency/Conservation, Funded by Recovery Act.
				-Seattle Department of Commerce: Weatherization Assistance Program, Funded by Recovery Act.
				-Puget Sound Clean Air Agency: Shipping Infrastructure Renovation/Retrofitting, Funded by Recovery Act.
				-Washington Technology Center: Nanoimprinted diffraction gratings for light trapping in crystal-silicon film photovoltaics, Funded by Recovery Act.
	Tacoma	C-17 Globemaster	General Plastics Manufacturing Co.	Local Initiatives
				-City created a green ribbon commission for climate change; implementation will foster green job growth in various sectors.
				http://www.cityoftacoma.org/Page.aspx?cid=11454
				Federal Resources
				-City of Tacoma: Energy Efficiency/Conservation/ SmartGrid Infrastructure, Funded by Recovery Act.

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Wisconsin	Milwaukee Area			
	Milwaukee	C-17 Globemaster	Rexnord Cortiseal	Federal Resources
				-City of Milwaukee: Energy Efficiency/Conservation, Funded by Recovery Act.
				Local Initiatives
				-City is hosting the 2010 green energy summit.
				http://greenenergysummit.us/
				-City is developing a biomass power plant. Other strengths include solar cell manufacturing, wind turbine manufacturing, Biomass Cogeneration Poyry
				- Glacier Hills Wind Park: Vestas Wind Systems and We Energies
				- Shell biopetrol plant in Madison
				State Resources
				-State recently passed the "Clean Energy Jobs act" will create 15,000 jobs by 2025