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American Recovery and Reinvestment Act

Comparison of Funding Potentially Impacting the Environment

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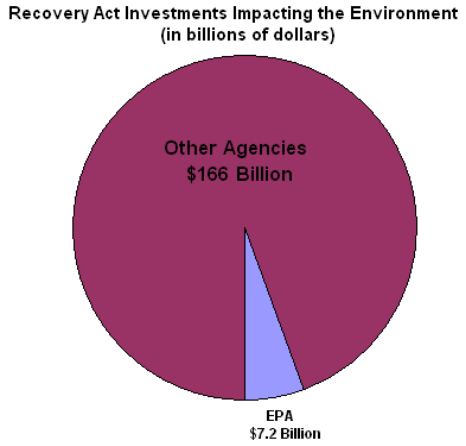
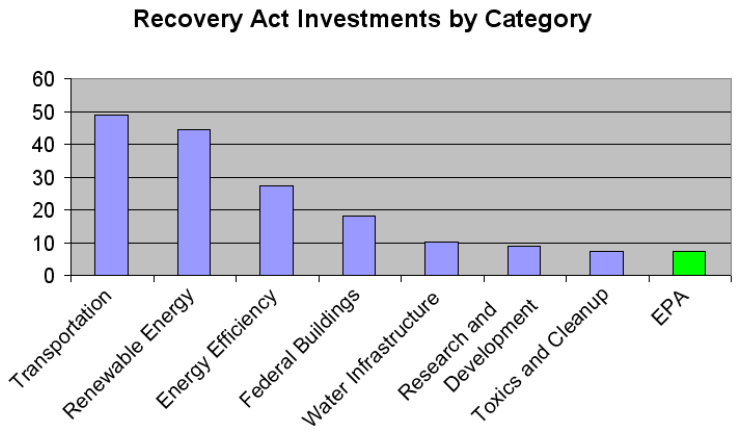
1. OVERVIEW

EPA received $7.2 billion from the American Recovery and Reinvestment Act (Recovery Act) of 2009, less than one percent of the total $787 billion Recovery Act funding. Other federal agencies received approximately $166 billion in Recovery Act funds for projects with potentially significant long-term implications for energy and environmental quality (about 21 percent of total Recovery Act funding).[1]

This analysis illustrates that the Recovery Act could have potentially significant impacts on energy production and demand, air quality, climate change, water quality, solid and hazardous waste, materials management, or land conservation with a majority of funds going through other agencies. Agencies other than EPA will have growing roles in shaping the environment. Coordination across the federal government can help leverage Recovery Act funding to achieve improved environmental results.

This paper categorizes major Recovery Act funding with potential environmental implications by use (not by agency): transportation, renewable energy technology, energy efficiency, federal buildings, water infrastructure, research, and toxics and cleanup.





While this paper likely identifies the vast majority of Recovery Act funding that could potentially impact energy and the environment, it may not account for all funds. For example, additional funds in the federal buildings sector could incorporate green principles, practices, and products.[2] Go to www.recovery.gov or each agency's Recovery Act Web site for more information on the investments.

[1] The Recovery Act funds approximately $8.85 billion in research at DOE, NSF, NOAA, NASA, NIST, and USGS. While not all the funding will have an environmental impact, a large portion could be used to advance scientific research in energy and the environment.

[2] The Recovery Act funds approximately $18 billion in construction and repair of federal buildings. Some of this money could go toward green projects; however, no reserve is stipulated.

2. BACKGROUND AND PURPOSE

This paper serves two primary functions: (1) to explore potential long-term environmental implications of projects funded at other agencies by the Recovery Act, along with possible implications to EPA's future work, and (2) to help identify opportunities and priorities for inter-agency coordination. Many projects receiving Recovery Act funding will have effects within EPA's areas of responsibility.

This analysis is intended to facilitate better organization and inter-agency coordination, helping EPA identify where it can most effectively lend expertise to other agencies, and vice versa. An understanding of how allocated Recovery Act funds can potentially affect the environment – and EPA's work –will also benefit other agencies and those working on projects across the country. By consolidating information from the Recovery Act into a single document, EPA staff will have a better understanding of how funding flows and who to contact regarding environmentally relevant projects. For more information on individual projects, access the Web sites listed in the table below.

3. METHODOLOGY

Each agency maintains a public Recovery Act Web site that provides budget, planning, and performance-related information. EPA's Environmental Futures Team collected, analyzed, and organized available information from the public Recovery Act Web sites. Included for each program is an analysis of potential impacts, showing how it could improve or harm the environment by determining how the program would impact air pollutant emissions, climate change, water pollution, land conservation, waste management, and toxics. EPA regional planning and national program staff reviewed and commented on a draft of the analysis; however, no other agency has formally reviewed this paper.

Departments and Agencies	Recovery Web sites
Department of Agriculture	www.usda.gov/recovery
Department of Commerce	www.doc.gov/recovery
Department of Defense	www.defenselink.mil/recovery
Department of Education	www.ed.gov/recovery
Department of Energy	www.doe.gov/recovery
Department of the Interior	www.doi.gov/recovery
Department of Health and Human Services	www.hhs.gov/recovery
Department of Homeland Security	www.dhs.gov/recovery
Department of Housing and Urban Development	www.hud.gov/recovery
Department of Labor	www.dol.gov/recovery
Department of State	www.state.gov/recovery
Department of Transportation	www.dot.gov/recovery
Department of Treasury	www.treasury.gov/recovery
Department of Veterans Affairs	www.va.gov/recovery
General Services Administration	www.gsa.gov/recovery
Environmental Protection Agency	www.epa.gov/recovery
National Science Foundation	www.nsf.gov/recovery
National Aeronautics and Space Administration	www.nasa.gov/recovery
Social Security Administration	www.ssa.gov/recovery
Smithsonian Institution	www.si.edu/recovery

4. ANALYSIS

Renewable Energy Technology Investments - $44.6 Billion			
Program	**$ Amount (Billion)**	**Agency**	**Potential Environmental Impacts**
Extending Tax Credits for Renewable Energy	13.0	Treasury (IRS)	Increased demand for renewable energy could reduce greenhouse gases and other air pollutants.
Smart Grid Funding	11.0	DOE	The smart grid will allow for more alternative energy use and could reduce greenhouse gases and other air pollutants.
Loan Guarantees for Renewable and Electric Transmission Technology	6.0	DOE	Increased demand for renewable energy could reduce greenhouse gases and other air pollutants.
			Soil degradation from crops could increase nitrogen and phosphorus runoff in ground and surface water.
Modernizing Electrical Grid	4.5	DOE	Modernizing the electrical grid will increase energy savings and could decrease greenhouse gases and other air pollutants.
			Increasing use of "advanced battery systems" for energy storage with renewable could lead to long-term recycling and disposal concerns.
Carbon Capture Experiments	3.4	DOE	Carbon leakage could degrade ground water and drinking water.
Power Transmission System Upgrades	3.25	DOE	Requirements are necessary for building permits and turbine decommissioning.
			Debris and construction material could be transferred to landfills.
Energy Efficiency Research	2.5	DOE	Increased energy efficiency could reduce greenhouse gases and other air pollutants.
			The long term structural changes in emissions scenarios from growth of energy efficiency in the economy.
Training Green Collar Laborers	0.5	DOL	Increased training for contractors and professionals in certain areas can help increase construction of efficient buildings and retrofitting of buildings and decrease greenhouse gases from reduced energy use.
			Increased construction of LEEDS buildings and retrofitting will reduce greenhouse gases and other air pollutants.
			Increased training for green collar laborers in waste water management and construction will provide more jobs in energy and water efficient projects.
Geothermal Technologies	0.4	DOI (BLM)	Drilling process may increase surface runoff and increase sedimentation in waterbodies.
			Site construction may increase particulate matter.

Energy Efficiency Investments - $27.26 Billion			
Program	**$ Amount (Billion)**	**Agency**	**Potential Environmental Impacts**
Weatherizing Modest Income Homes	5.0	DOE	Increased weatherization could reduce greenhouse gases and other air pollutants. More stringent appliance efficiency standards and monitoring will occur and could reduce greenhouse gases and other air pollutants.
Energy Efficiency and Renewable Energy in Federal Buildings	4.5	GSA	Increased energy efficiency could reduce greenhouse gases and other air pollutants.
Home Energy Credits	4.3	Treasury (IRS)	Increased energy efficiency could reduce greenhouse gases and other air pollutants.
Repairing and Modernizing Public Housing	4.0	HUD	Increased energy efficiency could reduce greenhouse gases and other air pollutants.
Local Energy Efficiency and Conservation Block Grants	3.2	DOE	Increased energy efficiency in communities (e.g., in homes, in local government buildings) could reduce greenhouse gases and other air pollutants.
State Energy Program Investments	3.1	DOE	Increased energy efficiency could reduce greenhouse gases and other air pollutants. Lead, VOC, and chemicals from dismantling older hardware and appliances could increase.
Neighborhood Stabilization Program	2.0	HUD	Emergency assistance for home repairs with rehabilitation standards for homes including energy efficient projects and could decrease greenhouse gases and other air pollutants.
Native American Housing Block Grants	0.51	HUD	The block grants are for new construction that sometimes includes energy efficiency projects that could reduce greenhouse gases and other air pollutants on tribal lands.
Energy Efficient Appliance Rebate Program for ENERGY STAR	0.3	DOE	Increased energy efficiency could increase energy savings and reduce greenhouse gases and other air pollutants.
Increased Energy Efficiency in Low-income Housing	0.25	HUD	Weatherization issues similar to those listed above (VOC, HC, lead are concerns) could reduce greenhouse gases and other air pollutants.

Water Infrastructure Investments - $10.15 Billion			
Program	**$ Amount (Billion)**	**Agency**	**Potential Environmental Impacts**
US Army Corps of Engineers Projects	4.6	DOD (USACE)	Restoration and remediation projects for wetlands and waterbodies, and flood control systems (levees) could reduce erosion and sediment pollution while improving ecosystem health and perhaps increase carbon stored in sediments.
			Debris and construction material could be transferred to landfills.
Rural Drinking and Waste	3.7	USDA	Cleaner water and waste disposal services will be made available to rural communities (10,000 people or fewer). Projects will reduce the risk of waterborne illnesses, improve water quality, and better manage resources by replacing leaking infrastructure to reduce water loss.
			Debris and construction material could be transferred to landfills.
Drinking Water Projects (rural & drought areas)	1.0	DOI (BOR)	Funds for projects will improve ground and surface waters while also constructing water intakes and water treatment plants. Additional construction for dams will protect communities from future floods.
			Debris and construction material could be transferred to landfills.
Watershed Projects	0.34	USDA (NRCS)	Programs will fund structural projects such as dams, levees, canals, and pumping plants to prevent flood control, reduce erosion, and could increase groundwater recharge.
			Dam rehabilitation and construction material transferred to landfills could have adverse impacts on ecosystems.
Watershed Habitat Restoration	.28	DOI (FWS)	Many of the projects repair habitats in various watersheds.
			Some of the projects repair buildings or install alternative energy resources, which could reduce greenhouse gases and other air pollutants.
Rio Grande Flood Control	0.22	DOS	The Rio Grande Flood Control System Project will assess, replace, or repair failing flood control systems. Levee construction will help improve water quality by reducing pollution. Potential impacts to wetlands could occur.
			Debris and construction material could be transferred to landfills.
Removal of Bridges	.1	DHS (USCG)	Removal of obstructive bridges could destroy ecosystem health or impair waters.

Toxics and Cleanup - $7.15 Billion			
Program	**$ Amount (Billion)**	**Agency**	**Potential Environmental Impacts**
Defense Environmental Cleanup	5.17	DOE	Work will accelerate site cleanup, including decontamination and decommissioning excess nuclear facilities and disposal of radioactive waste.
Forest Management	1.12	USDA (USFS)	Funds will be distributed to projects that improve bridges and trails and wildfire management for hazardous fuels reductions, and rehabilitation of land.
			Some of the projects will impact watershed restoration.
Non-defense Environmental Cleanup	0.483	DOE	Work will accelerate site cleanup, including decontamination and decommissioning excess nuclear facilities and disposal of radioactive waste.
Uranium Enrichment Decontamination	0.39	DOE	Removal and disposal of large process equipment and demolition of surplus facilities much earlier than originally planned will reduce environmental threats to the areas surrounding the sites.
Lead Hazard Reduction	0.1	HUD	Lead will be removed in older buildings.

Transportation Investments - $48.95 Billion			
Program	**$ Amount (Billion)**	**Agency**	**Potential Environmental Impacts**
Highway and Bridge Construction	27.5	DOT	Updated highways and roads will reduce traffic congestion and could increase/decrease greenhouse gases and other air pollutants. (Assumes majority will be repairs of existing roads.)
			Debris and construction material could be transferred to landfills.
			New roads may increase water runoff and nutrient pollution to waterbodies.
High Speed Rail and Amtrak	9.3	DOT (FRA)	New and renovated rail systems may reduce the number of automobiles on the road and reduce greenhouse gases and other air pollutants.
			Increased mobility may increase suburbanization increase runoff, erosion, and water pollution.
Public Transportation	6.9	DOT (FTA)	The replacement of old buses with efficient ones could reduce greenhouse gases and other air pollutants. $100 million was reserved for the Transit Investments in Greenhouse Gas and Energy Reduction for a discretionary program to support transit capital projects and could reduce greenhouse gas reductions and other air pollutants.
Advanced Car Battery	2.0	DOE	Increased efficiency could reduce greenhouse gases and other air pollutants.
			Fewer car batteries will be disposed into landfills as a result of advanced lithium-ion battery manufacturing and hybrid-electric systems, component manufacturers, and software designers. Lithium-ion batteries can be less toxic than traditional lead and nickel batteries.
State/Local Transportation	1.5	DOT	Highway, transit, rail (passenger and freight) and port infrastructure will help increase mobility with energy efficient technologies and could reduce greenhouse gas emissions and other air pollutants.
			Highway and bridge construction could increase debris and landfill materials.
New Public Rail Systems	0.75	DOT (FTA)	New fixed guide way transit systems (heavy, light, and commuter rail, bus transit, and streetcars) could serve as alternatives to automobiles and airplanes, potentially reducing greenhouse gases and other air pollutants.
			Debris and construction material could be transferred to landfills.
Electric Vehicle Technology	0.4	DOE	An educational initiative for plug-in hybrids and electric infrastructure concepts (truck stop charging station, electric rail, and technician training) will create a market for electric vehicles and could reduce greenhouse gases and other air pollutants.
Federal Vehicle Fleets	0.3	GSA	Funding to acquire greener motor vehicles including hybrids, electric vehicles, and plug-in hybrid vehicles could reduce greenhouse gases and other air pollutants.
State and Local Energy Efficient Vehicle Purchases	0.3	DOE	Light and heavy-duty vehicles, including hybrid, plug-in electric hybrid, hydraulic hybrid, electric, fuel cell, compressed natural gas vehicles, and refueling infrastructure for alternative fuels (biofuels and natural gas) could reduce greenhouse gases and other air pollutants.

Federal and Federally Subsidized Buildings - $18.19 Billion[3]		
Program	**$ Amount (Billion)**	**Agency**
Facilities Improvement and Remediation of Abandoned Mines	.65	USDA (USFS)
Building Construction	.20	USDA (ARS)
Operations and Facilities	.36	DOC (NOAA)
Construction of Research Facilities	.83	DOC (NIST)
Construction of Complexes	5.12	DOD
School Improvements	3.65	ED
Construction and Maintenance	.10	DOE
Construction and Maintenance	.415	HHS (HIS)
Construction and Maintenance	1.5	HHS (NIH)
Construction and IT	.20	DHS
Construction of Land Border Ports	.42	DHS (USC)
Construction and Maintenance	.98	DHS (USCG)
Construction and Maintenance	.305	DOI (BLM)
Construction and Maintenance	.75	DOI (NPS)
Construction and Maintenance	.14	DOI (USGS)
Construction and Renovation	.25	DOL
Research Equipment and Facilities Construction	.4	NSF
Construction and Maintenance	.025	Smithsonian
Replacement of National Computer Center and IT	.50	SSA
Construction and Maintenance	.20	DOT (FAA)
Hospital Maintenance and Energy Projects	1.05	VA (VHA)
Monument and Memorial Repairs	.15	VA (NCA)

[3] Many offices within EPA potentially could partner with other federal agencies on green projects. The projects listed above represent construction, maintenance, and repair; although the portion allocated toward green projects is not known.