

ARMY RDT&E BUDGET ITEM JUSTIFICATION (R2 Exhibit)

May 2009

BUDGET ACTIVITY		PE NUMBER AND TITLE			
4 - Advanced Component Development and Prototypes		0603779A - Environmental Quality Technology - Dem/Val			
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	26474	15304	4770	Continuing	Continuing
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4632	8798	4770	Continuing	Continuing
E17 ARMY ENVIRONMENTAL SOLUTIONS PROGRAM (CA)	2330				2330
E21 POLLUTION PREVENTION TECHNOLOGY DEM/VAL	1251	526			1777
E23 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) PILOT IN DOD	2330	398			2728
EN4 PLASMA ENERGY PYROLYSIS SYSTEM (PEPS)		797			797
EP1 ENVIRONMENTAL QUALITY TECH DEM/VAL (CA)	15931	4785			20716

A. Mission Description and Budget Item Justification: There is a broad application potential for environmental quality technology (EQT) to be applied to multiple Army weapon systems and installations. However, technology must be demonstrated and validated (total ownership cost and performance data identified) before potential users will consider exploiting it. Therefore, this program element includes projects focused on validating the general military utility or cost reduction potential of technology when applied to different types of infrastructure, military equipment or techniques. It may include validations and proof-of-principle demonstrations in field exercises to evaluate upgrades or provide new operational capabilities. The validation of technologies will be in as realistic an operating environment as possible to assess performance or cost reduction potential. EQT demonstration/validation is systemic; i.e., applies to a class of systems (e.g., tanks or aircraft) or to a Department of Army-wide, multiple site/installation problem (e.g., unexploded ordnance detection and discrimination). This program will address, and eventually resource, programs in each of the environmental quality technology pillars (restoration, conservation, compliance, and pollution prevention). Work must be endorsed by potential users and supported by a state-of-the-art assessment (i.e., "technology is heading for user to implement").

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0603779A - Environmental Quality Technology - Dem/Val

B. Program Change Summary

	FY 2008	FY 2009	FY 2010
Previous President's Budget (FY 2009)	18580	5355	4814
Current BES/President's Budget (FY 2010)	26474	15304	4770
Total Adjustments	7894	9949	-44
Congressional Program Reductions	-287	-51	
Congressional Rescissions			
Congressional Increases		10000	
Reprogrammings	8700		
SBIR/STTR Transfer	-519		
Adjustments to Budget Years			-44

Change Summary Explanation - Funding:

FY 2008 - There were 3 congressional interest projects reprogrammed to Program Element 0603779A: Hawaii Undersea Military Munitions Assessment, Biowaste to Bioenergy, and Vanadium Technology Program.

FY 2009 - There were 5 congressional interest projects (totalling \$6.000 million) added: Battlefield Asset Decontamination System (BARDS) (\$1.600 million), Plasma Energy Pryolysis System (PEPS) Clean Fuels (\$.800 million), Battlefield Plastic Biodiesel (\$1.600 million), Renewable Energy Testing Center (\$1.600 million), and the Demonstration/Evaluation Project at Travis Air Force Base (Note to develop a greenhouse gas inventory and footprint utilizing a web-based Environmental Management Information System (EMIS)) (\$.400 million). In addition, there was a program increase (\$4.000) to support the National Defense Center for Environment and Energy (NDCEE) Program.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology - Dem/Val			PROJECT 035
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
035 NATIONAL DEFENSE CNTR FOR ENVIRO EXCELLENCE-NDCEE	4632	8798	4770	Continuing	Continuing

A. Mission Description and Budget Item Justification: The National Defense Center for Environmental Excellence (NDCEE) was established by Congress in 1990 with a directive to "serve as a national leadership organization to address high priority environmental problems for the Department of Defense (DoD), other government organizations, and the industrial community." The NDCEE Program is a national resource for developing and disseminating advanced environmental technologies. The NDCEE is used to demonstrate environmentally acceptable technology to industry; validate new technology prior to transferring that technology; and assist in the training of potential users as part of that technology transfer process. The NDCEE is a DoD resource for environmental quality management and technology validation. This program is managed by the Army on behalf of the Office of the Assistant Deputy Under Secretary of Defense for Environment (ADUSD-E). In May 2008, the program name was redesignated to the National Defense Center for Energy and Environment to ensure that the Center's mission recognizes and addresses the strategic interdependence of energy and environmental technology requirements within an overall sustainability framework in support of our installations, weapons systems and war fighters. This name change also directly supports the DoD's proactive implementation of Executive Order 13423, "Strengthening Federal Environmental, Energy and Transportation Management."

Our broadly encompassing and growing mobile, personal and stationary advanced energy technology requirements include infrastructure, alternative and synthetic fuels, surety, renewables, storage, distribution, advanced power, micro-grids, transportation, systems integration and others. Further, to train as we fight, validated energy and environmental technologies need to be available, and implemented at our power projection bases and training areas. The NDCEE will continue to research, demonstrate and transfer these technologies supporting our integrated Environment, Safety and Occupational Health (ESOH) and energy objectives with full consideration of the triple bottom line of mission, environment and community.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Management and operations of the NDCEE by the prime contractor.	2300	2300	2300
Industrial base integration, operation of the NDCEE environmental technology facility, and environmental information analysis.	500	500	500
Conduct demonstration/validation of environmentally acceptable technologies that enhance military readiness and reduce production, operating, and/or disposal costs.	1582	5277	1687
NDCEE Government program management during contract negotiations and execution and during project formulation, execution, and technology transfer.	250	475	283
Small Business Innovative Research/Small Business Technology Transfer Programs		246	
Total	4632	8798	4770

B. Other Program Funding Summary Not applicable for this item.

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BUDGET ACTIVITY	PE NUMBER AND TITLE	PROJECT
4 - Advanced Component Development and Prototypes	0603779A - Environmental Quality Technology - Dem/Val	035

C. Acquisition Strategy The NDCEE is a national asset focused on DoD applications that include technology transfer to appropriate DoD organizations. The NDCEE fosters an outreach program to describe its products and capabilities that include publication of results and participation in professional meetings, symposia, conferences, and appropriate coordination with industry. The management strategy for the NDCEE centers on a DoD Executive Advisory Board (EAB) chaired by the DoD NDCEE Executive Agent on behalf of the ADUSD (ESOH) and composed of senior DoD leadership to oversee NDCEE operations. The EAB is supported by an EAB Working Group (EABWG) that includes staff members from each of the offices represented on the EAB. The EABWG coordinates all NDCEE activities and reports back to the EAB Principals. The EABWG is, in turn, supported by a Technical Working Group (TWG) that addresses the details of NDCEE program execution. The contracting strategy of the NDCEE is based on using an NDCEE Contracting Officer's Representative to validate all the contractual portions of the NDCEE and by technical monitors (TM) to oversee the technical aspects of each contracted task. A prime contractor operates NDCEE test facility(s) to validate environmentally compatible technologies on a representative "shop floor". The NDCEE accounts for and conducts work for: (1) direct funded Army tasks; (2) reimbursable tasks from within DoD and from other Government agencies; and (3) Congressionally directed and funded tasks.

ARMY RDT&E COST ANALYSIS (R3)

May 2009

BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
4 - Advanced Component Development and Prototypes			0603779A - Environmental Quality Technology - Dem/Val							035		
I. Product Development	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Not applicable.								-78			-78	
Subtotal:								-78			-78	
II. Support Costs	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Technical Data	C; CPFF	Concurrent Technologies Corporation (CTC), Johnstown, PA	12500	2800	2-3Q	2800	2-3Q	2800	2-3Q	Cont.	Cont.	Cont.
Subtotal:			12500	2800		2800		2800		Cont.	Cont.	Cont.
III. Test And Evaluation	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract
Development Testing	C; CPFF	Concurrent Technologies Corp.	2466								2466	2466
Development Testing	C; CPFF	Concurrent Technologies Corp.	14690	1582	3Q	5523	3Q	1765	3Q	Cont.	Cont.	Cont.
Subtotal:			17156	1582		5523		1765		Cont.	Cont.	Cont.
IV. Management Services	Contract Method & Type	Performing Activity & Location	Total PYs Cost	FY 2008 Cost	FY 2008 Award Date	FY 2009 Cost	FY 2009 Award Date	FY 2010 Cost	FY 2010 Award Date	Cost To Complete	Total Cost	Target Value of Contract

ARMY RDT&E COST ANALYSIS (R3)

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BUDGET ACTIVITY			PE NUMBER AND TITLE							PROJECT		
4 - Advanced Component Development and Prototypes			0603779A - Environmental Quality Technology - Dem/Val							035		
Program Management Support	Allotment	Office of the Assistant Sec Army (Installations and Environment)	3431	250	4Q	475	4Q	283	4Q	Cont.	Cont.	Cont.
Subtotal:			3431	250		475		283		Cont.	Cont.	Cont.
Project Total Cost:			33087	4632		8798		4770		Cont.	Cont.	Cont.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology - Dem/Val			PROJECT E17
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
E17 ARMY ENVIRONMENTAL SOLUTIONS PROGRAM (CA)	2330				2330

A. Mission Description and Budget Item Justification: Addressing installation, environmental and renewable energy requirements associated with military operations (FY2004 National Defense Appropriations Conference Report). This is a new Congressional interest project.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Congressional Add - Western Hemisphere Information Exchange Program (WHIX)	2330		
Total	2330		

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology - Dem/Val			PROJECT E21
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
E21 POLLUTION PREVENTION TECHNOLOGY DEM/VAL	1251	526			1777

A. Mission Description and Budget Item Justification: This project supports Advanced Component Development and Prototypes of new and reformulated paints, paint removers, cleaners and other surface coating materials and processes for weapon systems production and maintenance operations. The project increases operational sustainment and warfighter training capabilities by reducing soldier health risks, environmental impacts and compliance enforcement actions against installations while increasing coatings performance and standardization across the Army. Materials and processes demonstrated under this project are inherently compliant with all applicable National Emissions Standards for Hazardous Air Pollutants that regulate surface coating activities, thereby eliminating the need for Army installations to incur hundreds of millions of dollars in expenses to purchase, install and operate air pollution control devices. Together with project 0603804A, Logistics and Engineer Equipment - Adv Dev (K42), this project transitions advanced technologies developed under 0603728A, Environmental Quality Technology Demonstrations (025). The project tests and evaluates Sustainable Painting Operations for the Total Army (SPOTA) at facilities that produce and maintain Combat Support/Combat Service Support systems, Ground Combat Vehicles and other Army equipment. The project expedites technology transition from the laboratory to operational use by demonstrating the capabilities of new materials and processes to fulfill the performance requirements outlined in Material Specifications, Depot Maintenance Work Requirements, Technical Manuals and other technical data. Test and evaluation activities are executed by Research, Development and Engineering Command (RDECOM) centers and laboratories in cooperation with the affected Life Cycle Management Commands, Program Executive Offices and Program Managers. Materials and processes are being demonstrated at ten different Army facilities in order to minimize the disruption of materiel maintenance operations at any one facility.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Qualify, validate and approve reformulated Chemical Agent Resistant Coating (CARC) systems and other non-CARC paints and surface coatings	751	273	
Qualify, validate and approve hazardous air pollutant (HAP) free solvents, thinners and cleaners	300	100	
Qualify, validate and approve chemical paint removers containing no methylene chloride or other HAPs	150	93	
Qualify, validate and approve reformulated sealants and adhesives for high-use applications	50	45	
Small Business Innovation Research/Small Business Technology Transfer		15	
Total	1251	526	

<u>B. Other Program Funding Summary</u>	FY 2008	FY 2009	FY 2010	To Compl	Total Cost
0603728A, Environmental Quality Technology Demonstrations (025)	3411	3610	3640		10661
0603804A, Logistics and Engineer Equipment - Adv Dev	5972	5190	2951	465	14578

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BUDGET ACTIVITY	PE NUMBER AND TITLE				PROJECT
4 - Advanced Component Development and Prototypes	0603779A - Environmental Quality Technology - Dem/Val				E21
(K42)					
0605857A, Environmental Quality Technology Mgmt Support (06I)	340	272	275	67	954

Comment:

C. Acquisition Strategy The project transitions demonstrated technology directly into the Army supply system by having National Stock Numbers assigned/reassigned and immediately made available for procurement by the Defense Logistics Agency and the General Services Administration. As acquisition program managers approve the new materials and processes for use on their systems, technical writers are specifying them in the appropriate technical publications. The project is managed by the Director of the Environmental Acquisition and Logistics Sustainment Program at the Headquarters, U.S. Army RDECOM.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology - Dem/Val			PROJECT E23
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
E23 ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) PILOT IN DOD	2330	398			2728

A. Mission Description and Budget Item Justification: The Environmental Management System (EMS) Pilot in Department of Defense (DOD) is a new Congressional interest project. The project is to demonstrate and validate EMS internet-based software applications at Defense sites in order to better manage environmental information and reduce compliance burdens of installations.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Demonstrated and validated EMS internet-based software applications at Department of Defense (DoD) installation sites.	2330	387	
Small Business Innovation Research/Small Business Technology Transfer		11	
Total	2330	398	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology - Dem/Val			PROJECT EN4
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
EN4 PLASMA ENERGY PYROLYSIS SYSTEM (PEPS)		797			797

A. Mission Description and Budget Item Justification: This project addresses the use of high temperature Plasma Energy Pyrolysis Systems (PEPS) gasification process, with the primary focus on converting opportunity feedstock(s) to high quality Synthesis Gas (syngas) that can be subsequently converted to usable fuels for the Army. The specific goal of the PEPS Clean Fuels Program is to build an operational unit to gather data to demonstrate the efficiency, environmental compliance, and cost competitiveness of the gasification process for fuel applications. The objective of this task - Phase 4, is to continue to perform additional Risk Reduction Testing needed to further demonstrate and validate the applicability of PEPS gasification technology to a range of applications requiring elevated pressures and alternate plasma torch gas compositions.

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
Perform risk reduction testing to demonstrate and validate the applicability of PEPS gasification technology.		774	
Small Business Innovative Research/Small Business Technology Transfer Program		23	
Total		797	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.

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BUDGET ACTIVITY 4 - Advanced Component Development and Prototypes		PE NUMBER AND TITLE 0603779A - Environmental Quality Technology - Dem/Val			PROJECT EP1
COST (In Thousands)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	Cost to Complete	Total Cost
EP1 ENVIRONMENTAL QUALITY TECH DEM/VAL (CA)	15931	4785			20716

A. Mission Description and Budget Item Justification: Environmental Quality Technology Dem/Val Adds (CA) - Congressional directed Army Environmental quality technology projects that address critical requirements, reduce out-year costs, and support long-term sustainability. This includes compliance, conservation, restoration and installation pollution prevention technologies. There are 5 new congressional interest projects (totalling \$5.200 million) added: Battlefield Asset Decontamination System (BARDS) (\$1.600 million), Battlefield Plastic Biodiesel (\$1.600 million), Renewable Energy Testing Center (\$1.600 million), and the Demonstration/Evaluation Project at Travis Air Force Base (\$.400 million)

<u>Accomplishments/Planned Program:</u>	<u>FY 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>
There are 5 new congressional interest projects (totalling \$5.200 million) added: Battlefield Asset Decontamination System (BARDS) (\$1.600 million), Battlefield Plastic Biodiesel (\$1.600 million), Renewable Energy Testing Center (\$1.600 million), and the Demonstration/Evaluation Project at Travis Air Force Base (\$.400 million)	15931	4651	
Small Business Innovative Research/Small Business Technology Transfer Programs		134	
Total	15931	4785	

B. Other Program Funding Summary Not applicable for this item.

C. Acquisition Strategy Not applicable for this item.