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Exhibit R-2, RDT&E Budget Item Justification: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

Appropriation/Budget Activity 0400: <i>Research, Development, Test & Evaluation, Defense-Wide I BA 4: Advanced Component Development & Prototypes (ACD&P)</i>	R-1 Program Element (Number/Name) PE 0603851D8Z I <i>Environmental Security Technology Certification Program (ESTCP)</i>
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COST (\$ in Millions)	Prior Years ⁽⁺⁾	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
Total Program Element	526.260	72.135	122.737	84.638	-	84.638	113.690	143.793	160.969	161.433	-	-
514: <i>Environmental Security Technology Certification Program</i>	520.260	72.135	122.737	84.638	-	84.638	113.690	143.793	160.969	161.433	-	-

⁽⁺⁾ The sum of all Prior Years is \$6.000 million less than the represented total due to several projects ending

Note

New Start (Y/N): Partial - The Sustainable Technologies and Demonstration Program \$3.000; Climate Resilience Technology Demonstration/Validation Program \$13.094

STED is a new start. It was added by Congress the last three years but is in the request this year. The work characterized as Climate Resilience Technology Dem/Val is an increase to existing work that was categorized as Environment previously. This work is scheduled to increase as efforts to support the Administration's priorities ramp up so we thought it best to call this out as a separate sub-effort to better communicate the distribution of funds.

A. Mission Description and Budget Item Justification

This program supports the Department's initiative Building Sustainable and Long-Term Advantage.

The Environmental Security Technology Certification Program (ESTCP) demonstrates and validates promising and innovative environmental, resilience, and energy technologies that target the most urgent needs of the Department of Defense (DoD). Technologies selected are projected to provide a return on the investment through cost savings and improved efficiencies. The program responds to: (1) Congressional concern over the slow pace of remediation of environmentally polluted sites on military installations, (2) Congressional direction to conduct demonstrations specifically focused on emerging new technologies, and (3) the need to improve defense readiness by reducing the drain on the Department's operation and maintenance dollars caused by environmental restoration, waste management, and the cost of energy. Preference for demonstrations is given to technologies that have successfully completed all necessary research and development objectives, and address the highest priority DoD requirements.

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B. Program Change Summary (\$ in Millions)	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total
Previous President's Budget	73.307	71.429	0.000	-	0.000
Current President's Budget	72.135	122.737	84.638	-	84.638
Total Adjustments	-1.172	51.308	84.638	-	84.638
• Congressional General Reductions	-	-0.402			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	51.710			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-1.172	-			
• Adjustments to Budget Year	-	-	84.638	-	84.638

Change Summary Explanation

FY 2023 funding increase reflects the fact that the FY 2022 President's Budget request did not include out-year funding.

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Exhibit R-2A, RDT&E Project Justification: PB 2023 Office of the Secretary Of Defense										Date: April 2022		
Appropriation/Budget Activity 0400 / 4					R-1 Program Element (Number/Name) PE 0603851D8Z / Environmental Security Technology Certification Program (ESTCP)				Project (Number/Name) 514 / Environmental Security Technology Certification Program			
COST (\$ in Millions)	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	FY 2024	FY 2025	FY 2026	FY 2027	Cost To Complete	Total Cost
514: Environmental Security Technology Certification Program	520.260	72.135	122.737	84.638	-	84.638	113.690	143.793	160.969	161.433	-	-
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Environmental Security Technology Certification Program (ESTCP) demonstrates and validates promising and innovative environmental and energy technologies that target the DoD's most urgent needs. Technologies selected are projected to provide a return on the investment through cost savings and improved efficiencies. The program responds to: (1) Congressional concern over the slow pace of remediation of environmentally polluted sites on military installations, (2) Congressional direction to conduct demonstrations specifically focused on emerging new technologies, and (3) the need to improve defense readiness by reducing the drain on the Department's operation and maintenance dollars caused by environmental restoration, waste management, and the cost of energy. Preference for demonstrations is given to technologies that have successfully completed all necessary research and development objectives, and address the highest priority the DoD requirements.

B. Accomplishments/Planned Programs (\$ in Millions)

	FY 2021	FY 2022	FY 2023
Title: Environmental Technology Demonstration/Validation	45.988	80.561	30.277
<p>Description: Funds are programmed for investments in projects that address priority the DoD environmental requirements. The focus of the program is on live site unexploded ordnance (UXO) in the underwater environment, addressing emerging and recalcitrant cleanup issues, range sustainment technologies, and reducing life cycle costs of the DoD weapon systems by eliminating hazardous materials. Accomplishments/plans are described for each FY below.</p> <p>FY 2022 Plans: Completion of data collection to support development of a new Military Specification (MILSPEC) for shore-side fire extinguishment foams for the DoD use. Completion of technology demonstration to clean firefighting trucks and hangar systems in anticipation of the change-over to polyfluoroalkyl substances (PFAS)-free foams as required by the National Defense Authorization Act for FY 2020. Completion of projects to examine the impact of multiple stressors to marine mammals. Initiation of climate model comparisons to guide installation staff choices and development and demonstration of tools for Threatened and Endangered Species (TES) monitoring to improve training land utilization. Initiate large-scale demonstrations of PFAS destruction technologies in accordance with Congressional direction.</p> <p>FY 2023 Plans: Continued demonstration of firefighting performance of new PFAS-free Aqueous Film Forming Foam (AFFF) alternatives as they emerge from the Strategic Environmental Research and Development Program (SERDP) and/or are introduced by industry.</p>			

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
<p>Demonstration of PFAS destruction technologies for investigation derived wastes. Initial demonstrations of predictive corrosion models. Expansion of efforts to develop tools to guide installation staff as they adapt to the impacts of climate change.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: The decrease reflects the rephasing of funds between FY 2022 and FY 2024.</p>				
<p>Title: Energy Technology Demonstration/Validation</p> <p>Description: Funds are programmed for investments in energy projects that constitute the Installation Energy Test Bed Initiative. This initiative responds to Congressional direction for the Department to increase energy efficiency, reduce installation energy intensity, increase the use of renewable energy, and improve energy security. Emerging energy technologies offer the DoD a cost effective opportunity to meet these requirements on its installations while reducing energy and operational costs. The DoD test bed program validates and tests the operational cost and performance of innovative energy technologies in a real-world integrated building environment so as to reduce risk, overcome the barriers to deployment, and facilitate wide-scale deployment. The test bed program exploits the Department's existing built infrastructure to evaluate energy efficiency and renewable energy technologies under the varied climatic conditions and building types the DoD manages. The test bed's key elements are: 1) competitive selection of new technologies, 2) systematic and consistent evaluation to determine performance, operational readiness and life cycle costs, and 3) development of guidance and design information for future deployment across installations.</p> <p>FY 2022 Plans: Completion of energy storage demonstrations within the DoD microgrids as one component of increased installation energy resilience. Broadening of the energy efficiency technology demonstrations integrated with Utility Energy Services Contract (UESC) to wider variety of Utility Services Companies as a way to facilitate tech transfer of previously-demonstrated energy technologies into wide adoption. Transition demonstrations of microgrid technologies that show promise at test beds to the DoD installations to collect performance data under real-world conditions. Demonstrate technologies for affordable energy assurance at National Guard installations. Demonstrate technologies for moisture control in the DoD buildings. Initiate planning efforts for the infrastructure required for electrical vehicle adoption at the DoD installations.</p> <p>FY 2023 Plans: Continued demonstrations of microgrid technologies that show promise at test beds to the DoD installations to collect performance data under real-world conditions. Complete demonstrations of technologies for affordable energy assurance at National Guard installations and moisture control in the DoD buildings. Complete initial projects on effective planning for electric vehicle (EV) infrastructure and maintenance. Renewed emphasis on technology transition through UESCs.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement:</p>		23.147	39.176	38.267

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B. Accomplishments/Planned Programs (\$ in Millions)		FY 2021	FY 2022	FY 2023
The change reflects the rephasing of funds between FY 2022 and FY 2024.				
<p>Title: Sustainable Technologies Evaluation and Demonstration Program</p> <p>Description: The Sustainable Technology Evaluation and Demonstration (STED) Program demonstrates technologies to address climate mitigation and Executive Order 14057, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability."</p> <p>FY 2022 Plans: Not Applicable</p> <p>FY 2023 Plans: Increase the Sustainable Technology Evaluation and Demonstration (STED) Program focus to address climate mitigation and Executive Order 14057, "Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability." Continue sustainable technology demonstrations at the DoD installations and other federal facilities to demonstrate and validate performance and cost effectiveness of sustainable alternatives. Expand STED Program awareness and outreach by conducting sustainable technology expos at federal facilities and providing sustainable product training to the DoD personnel.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: New Start in FY 2023 to enable implementation of Executive Order 14057.</p>		3.000	3.000	3.000
<p>Title: Installation Climate Resilience Technology Demonstration/Validation</p> <p>Description: Funds are programmed for investments in projects that address priority resilience needs of Department of Defense installations. Accomplishments/plans are described for each FY below.</p> <p>FY 2022 Plans: Initiate efforts to update the Defense Regional Sea Level Rise (DRSL) database to incorporate latest modeling guidance.</p> <p>FY 2023 Plans: Initiate demonstration projects on Impact of Climate Change on DoD Buildings, Climate Impacts on the DoD Water Infrastructure, Analyzing the Impacts of Weather Events on the DoD Installations, and Improving Climate Resilience of the DoD Installation and Surrounding Community Infrastructure.</p> <p>FY 2022 to FY 2023 Increase/Decrease Statement: Additional effort in this Program Area to support of national and Department of Defense emphasis on resilience of operations to climate change.</p>		0.000	0.000	13.094
Accomplishments/Planned Programs Subtotals		72.135	122.737	84.638

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C. Other Program Funding Summary (\$ in Millions)

N/A

Remarks

D. Acquisition Strategy

The ESTCP solicits proposals from all of the DoD organizations, other Federal Agencies, and the commercial sector. Projects are selected based on an annual competitive process through reviews by multi-agency panels.

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

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Support (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Support Contract	C/IDDQ	Noblis : Reston, VA	25.671	2.940	Jan 2019	3.500		3.200	Jul 2022	-		3.200	-	-	32.000
Subtotal			25.671	2.940		3.500		3.200		-		3.200	-	-	N/A

Test and Evaluation (\$ in Millions)				FY 2021		FY 2022		FY 2023 Base		FY 2023 OCO		FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost			
Installation Energy and Water	C/Various	Various : Various	213.702	22.177		38.021		36.795		-		36.795	-	-	-
Weapons Systems and Platforms	C/Various	Various : Various	79.425	10.331		13.722		8.272		-		8.272	-	-	-
Munitions Response	C/Various	Various : Various	56.409	5.727		4.917		4.849		-		4.849	-	-	-
Environmental Restoration	C/Various	Various : Various	93.789	23.356		52.030		8.842		-		8.842	-	-	-
Resource Conservation and Resiliency	C/Various	Various : Various	49.264	4.604		7.547		7.131		-		7.131	-	-	-
Sustainable Technologies Evaluation and Demonstration Program	C/Various	Various : Various	2.000	3.000		3.000		3.000		-		3.000	-	-	-
Installation Climate Resilience	C/Various	Various : Various	0.000	0.000		0.000		12.549		-		12.549	-	-	-
Subtotal			494.589	69.195		119.237		81.438		-		81.438	-	-	N/A

	Prior Years	FY 2021	FY 2022	FY 2023 Base	FY 2023 OCO	FY 2023 Total	Cost To Complete	Total Cost	Target Value of Contract
	Project Cost Totals		520.260	72.135	122.737	84.638	-	-	84.638

Remarks

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Exhibit R-4, RDT&E Schedule Profile: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

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ID	Task Name	Start	Finish	2022				2023				2024	
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
1	FY-21 In-Progress Reviews	9/1/2022	11/30/2022		[Task Bar]								
2	Develop FY-22 Program	1/1/2022	9/30/2022		[Task Bar]								
3	FY-22 In-Progress Reviews	2/1/2023	11/30/2023						[Task Bar]				
4	Develop FY-23 Program	1/1/2023	9/30/2023						[Task Bar]				

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ID	Task Name	Start	Finish	2023				2024				2025	
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2
1	FY 2022 In-Progress Reviews	9/1/2023	11/30/2023										
2	Develop FY 2023 Program	1/1/2023	9/30/2023										
3	FY 2023 In-Progress Reviews	2/1/2024	11/30/2024										
4	Develop FY 2024 Program	1/1/2024	9/30/2024										

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Exhibit R-4A, RDT&E Schedule Details: PB 2023 Office of the Secretary Of Defense **Date:** April 2022

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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<i>In Progress Reviews</i>				
FY 2022 In Progress Reviews	2	2023	1	2024
FY 2023 In Progress Reviews	2	2024	1	2025
<i>Develop Program</i>				
Develop FY 2023 Program	2	2023	4	2023
Develop FY 2024 Program	2	2024	4	2024