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**Exhibit R-2, RDT&E Budget Item Justification:** PB 2021 Office of the Secretary Of Defense **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide I BA 4: Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603851D8Z I <i>Environmental Security Technology Certification Program (ESTCP)</i>
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COST (\$ in Millions)	Prior Years <sup>(+)</sup>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total	FY 2022	FY 2023	FY 2024	FY 2025	Cost To Complete	Total Cost
Total Program Element	420.186	41.058	68.572	61.345	-	61.345	57.178	57.162	58.011	59.202	Continuing	Continuing
514: <i>Environmental Security Technology Certification Program</i>	414.186	41.058	68.572	61.345	-	61.345	57.178	57.162	58.011	59.202	Continuing	Continuing

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

**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 targets the Department of Defense (DoD) 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 DoD requirements.

**B. Program Change Summary (\$ in Millions)**

	<u>FY 2019</u>	<u>FY 2020</u>	<u>FY 2021 Base</u>	<u>FY 2021 OCO</u>	<u>FY 2021 Total</u>
Previous President's Budget	41.925	66.572	64.282	-	64.282
Current President's Budget	41.058	68.572	61.345	-	61.345
Total Adjustments	-0.867	2.000	-2.937	-	-2.937
• Congressional General Reductions	0.000	-			
• Congressional Directed Reductions	0.000	-			
• Congressional Rescissions	0.000	-			
• Congressional Adds	0.000	2.000			
• Congressional Directed Transfers	0.000	-			
• Reprogrammings	0.000	-			
• SBIR/STTR Transfer	-0.860	-			
• Other Program Adjustments	0.000	-	-0.292	-	-0.292
• Cancelled Acct	-0.007	-	-	-	-
• Economic Assumption	0.000	-	-0.067	-	-0.067
• Defense Wide Review Adjustment	0.000	-	-2.578	-	-2.578

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<b>Appropriation/Budget Activity</b> 0400: <i>Research, Development, Test &amp; Evaluation, Defense-Wide</i> / BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 Program Element (Number/Name)</b> PE 0603851D8Z / <i>Environmental Security Technology Certification Program (ESTCP)</i>	

**Change Summary Explanation**

The decrease of \$0.292 million is the result of planned program changes in OUSD(A&S).

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Office of the Secretary Of Defense										<b>Date:</b> February 2020		
<b>Appropriation/Budget Activity</b> 0400 / 4					<b>R-1 Program Element (Number/Name)</b> PE 0603851D8Z / <i>Environmental Security Technology Certification Program (ESTCP)</i>				<b>Project (Number/Name)</b> 514 / <i>Environmental Security Technology Certification Program</i>			
<b>COST (\$ in Millions)</b>	<b>Prior Years</b>	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>	<b>FY 2022</b>	<b>FY 2023</b>	<b>FY 2024</b>	<b>FY 2025</b>	<b>Cost To Complete</b>	<b>Total Cost</b>
514: <i>Environmental Security Technology Certification Program</i>	414.186	41.058	68.572	61.345	-	61.345	57.178	57.162	58.011	59.202	Continuing	Continuing
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 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 DoD requirements.

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

	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
<b>Title:</b> Environmental Technology Demonstration/Validation	23.843	39.226	36.245	-	36.245
<b>Description:</b> Funds are programmed for investments in projects that address priority 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 DoD weapon systems by eliminating hazardous materials. Accomplishments/plans are described for each FY below.					
<b>FY 2020 Plans:</b> Continued investments in detection, quantification and remediation of per- and polyfluorinated alkyl substances (PFAS), large-scale demonstration of low-frequency acoustic systems for underwater UXO detection and classification, monitoring technologies to facilitate the management of threatened and endangered species, and surface preparation for corrosion control. New investments in fire management technologies for DoD Installations and demonstration of alternative formulations for Aqueous Film Forming Foam (AFFF) are also planned.					
<b>FY 2021 Base Plans:</b> Transition of additional projects focused on detection, quantification and remediation of per- and polyfluorinated alkyl substances (PFAS) from SERDP development, complete two large-scale demonstrations of low-frequency					

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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851D8Z / <i>Environmental Security Technology Certification Program (ESTCP)</i>	<b>Project (Number/Name)</b> 514 / <i>Environmental Security Technology Certification Program</i>			
<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>					
	<b>FY 2019</b>	<b>FY 2020</b>	<b>FY 2021 Base</b>	<b>FY 2021 OCO</b>	<b>FY 2021 Total</b>
acoustic systems for underwater UXO detection and classification, and development of an Infrastructure Resiliency Arctic Engineering Design Tool. Expansion of the demonstration efforts for alternative formulations for AFFF as new agents are developed in SERDP.  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> The decrease of \$2.981 million is the result of funding reprioritization to emphasize PFAS and AFFF replacement demonstrations.					
<b>Title:</b> Energy Technology Demonstration/Validation  <b>Description:</b> 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 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 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.  <b>FY 2020 Plans:</b> Demonstration in FY 2020 will continue the emphasis on cyber-security as it relates to installation energy savings and security. ESTCP continues to demonstrate technologies and monitoring schemes that are able to obtain Authority-to-Operate on DoD networks and develops a Department-wide strategy for implementation.  <b>FY 2021 Base Plans:</b> Demonstrations will focus on energy storage within DoD microgrids as one component of increased Installation energy resilience. Continued emphasis on Energy Efficiency Technology Demonstrations Integrated with Utility Energy Services Contracts (UESC) as a way to facilitate tech transfer of previously-demonstrated energy technologies into wide adoption.  <b>FY 2020 to FY 2021 Increase/Decrease Statement:</b>	17.215	27.346	25.100	-	25.100

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<b>Exhibit R-2A, RDT&amp;E Project Justification:</b> PB 2021 Office of the Secretary Of Defense	<b>Date:</b> February 2020
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<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851D8Z / <i>Environmental Security Technology Certification Program (ESTCP)</i>	<b>Project (Number/Name)</b> 514 / <i>Environmental Security Technology Certification Program</i>
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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2019	FY 2020	FY 2021 Base	FY 2021 OCO	FY 2021 Total
The increase of \$2.246 million is the result of the planned completion of a series of micro-grid demonstrations at installations throughout the country.					
<b>Title:</b> Sustainable Technologies Evaluation and Demonstration Program	0.000	2.000	0.000	0.000	0.000
<b>Description:</b> Congressionally mandated Evaluation and Demonstration Program					
<b>FY 2020 Plans:</b> Continue efforts to develop and demonstrate sustainable technologies and integrate them into the defense supply chain.					
<b>FY 2021 Base Plans:</b> None					
<b>FY 2021 OCO Plans:</b> None					
<b>FY 2020 to FY 2021 Increase/Decrease Statement:</b> Congressional addition for FY20					
<b>Accomplishments/Planned Programs Subtotals</b>	41.058	68.572	61.345	0.000	61.345

**C. Other Program Funding Summary (\$ in Millions)**  
N/A

**Remarks**

**D. Acquisition Strategy**  
ESTCP solicits proposals from all 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 2021 Office of the Secretary Of Defense** **Date:** February 2020

<b>Appropriation/Budget Activity</b> 0400 / 4	<b>R-1 Program Element (Number/Name)</b> PE 0603851D8Z / Environmental Security Technology Certification Program (ESTCP)	<b>Project (Number/Name)</b> 514 / Environmental Security Technology Certification Program
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<b>Support (\$ in Millions)</b>				<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Support Contract	C/IDDQ	Noblis : Reston, VA	19.791	2.940	Jan 2019	2.940	Jan 2019	2.940	Jan 2019	-		2.940	Continuing	Continuing	19.650
<b>Subtotal</b>			19.791	2.940		2.940		2.940		-		2.940	Continuing	Continuing	N/A

<b>Test and Evaluation (\$ in Millions)</b>				<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>			
<b>Cost Category Item</b>	<b>Contract Method &amp; Type</b>	<b>Performing Activity &amp; Location</b>	<b>Prior Years</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Award Date</b>	<b>Cost</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>
Energy and Water	C/Various	Various : Various	171.313	17.215		28.730		25.100		-		25.100	Continuing	Continuing	-
Weapons Systems and Platforms	C/Various	Various : Various	64.499	5.589		9.337		9.653		-		9.653	Continuing	Continuing	-
Munitions Response	C/Various	Various : Various	42.683	5.142		8.584		7.723		-		7.723	Continuing	Continuing	-
Environmental Restoration	C/Various	Various : Various	76.483	6.483		10.823		10.619		-		10.619	Continuing	Continuing	-
Resource Conservation and Resiliency	C/Various	Various : Various	39.417	3.689		6.158		5.310		-		5.310	Continuing	Continuing	-
Sustainable Technologies Evaluation and Demonstration Program	C/Various	Various : Various	-	-		2.000		-		-		-	Continuing	Continuing	-
<b>Subtotal</b>			394.395	38.118		65.632		58.405		-		58.405	Continuing	Continuing	N/A

	<b>Prior Years</b>	<b>FY 2019</b>		<b>FY 2020</b>		<b>FY 2021 Base</b>		<b>FY 2021 OCO</b>		<b>FY 2021 Total</b>	<b>Cost To Complete</b>	<b>Total Cost</b>	<b>Target Value of Contract</b>		
<b>Project Cost Totals</b>			414.186	41.058		68.572		61.345		-		61.345	Continuing	Continuing	N/A

**Remarks**

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**Exhibit R-4, RDT&E Schedule Profile: PB 2021 Office of the Secretary Of Defense** **Date:** February 2020

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ID	Task Name	Start	Finish	2020				2021				2022		
				Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	
1	FY-19 In-Progress Reviews	9/1/2020	11/30/2020		[Task Bar]									
2	Develop FY-20 Program	1/1/2020	9/30/2020		[Task Bar]									
3	FY-20 In-Progress Reviews	2/1/2021	11/30/2021						[Task Bar]					
4	Develop FY-21 Program	1/1/2021	9/30/2021						[Task Bar]					

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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2021 Office of the Secretary Of Defense		<b>Date:</b> February 2020
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Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
<b><i>In Progress Reviews</i></b>				
FY 2018 In Progress Reviews	2	2019	1	2020
FY 2019 In Progress Reviews	2	2020	1	2021
<b><i>Develop Program</i></b>				
Develop FY 2019 Program	2	2019	4	2019
Develop FY 2020 Program	2	2020	4	2020