Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604555D8Z *I Operational Energy Capability Improvement - Non S&T*

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
Total Program Element	23.069	38.665	53.726	53.705	-	53.705	55.169	55.934	56.786	57.877	Continuing	Continuing
035: *Operational Energy Prototyping*	23.069	21.169	53.726	53.705	-	53.705	55.169	55.934	56.786	57.877	Continuing	Continuing
036: *Commanding Energy*	-	4.328	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
038: *Powering The Force*	-	5.798	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
054: *Electrifying The Battlespace*	-	7.370	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Operational Energy Capability Improvement—Non S&T (OECI-Non S&T) program is solely dedicated to addressing joint operational energy requirements and providing the solutions pipeline for integrating next-generation power and energy technology across current and emerging Department of Defense (DOD) operational platforms and weapon systems. Investments in OECI-Non S&T transition across multiples services, support current policy objectives, and inform future policy goals.

This program supports the Department's initiatives to build a sustainable long-term advantage for an interoperable, optimally powered, and resilient joint force. The OECI-Non S&T program accelerates transitions of operational energy technologies by more than two years. The program focuses on prioritizing first-of-a-kind successes that increase warfighting capabilities by reducing logistical demand and complexity, increasing commonality for interoperability and resilience, and ensures the warfighter has the energy and understanding to effectively use that power across all domains and levels of engagement.

OECI-Non S&T validates and demonstrates joint, high priority innovative, and cost-effective prototypes, technologies, and methods supporting DOD Operational Energy Strategy/National Defense Strategy addressing known capability gaps. The prototypes meet power and energy requirements mitigating contested logistics challenges through the reduction of operational energy demand and enabling enterprise-wide power and energy visibility.

Exhibit R-2, RDT&E Budget Item Justification: PB 2025 Office of the Secretary Of Defense	Date: March 2024
Appropriation/Budget Activity 0400: *Research, Development, Test & Evaluation, Defense-Wide I* BA 4: *Advanced Component Development & Prototypes (ACD&P)*	**R-1 Program Element (Number/Name)** PE 0604555D8Z *I Operational Energy Capability Improvement - Non S&T*

B. Program Change Summary ($ in Millions)	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total
Previous President's Budget	45.779	53.726	58.489	-	58.489
Current President's Budget	38.665	53.726	53.705	-	53.705
Total Adjustments	-7.114	0.000	-4.784	-	-4.784
• Congressional General Reductions	-11.300	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	5.000	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.814	-			
• Defense-Wide Topline Adjustment	-	-	-4.784	-	-4.784

Change Summary Explanation

FY 2023 received congressionally requested reprogramming: (1) $5.0M increase for field-based airborne power generation systems. Directed investment was awarded on contract Sept 2023.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 035 / *Operational Energy Prototyping*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
035: *Operational Energy Prototyping*	23.069	21.169	53.726	53.705	-	53.705	55.169	55.934	56.786	57.877	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The Operational Energy Capability Improvement—Non S&T (OECI-Non S&T) program is solely dedicated to addressing joint operational energy requirements and providing the solutions pipeline for integrating next-generation power and energy technology across current and emerging Department of Defense (DOD) operational platforms and weapon systems. Investments in OECI-Non S&T transition across multiples services, support current policy objectives, and inform future policy goals.

This program supports the Department's initiatives to build a sustainable long-term advantage for an interoperable, optimally powered, and resilient joint force. The OECI-Non S&T program accelerates transitions of operational energy technologies by more than two years. The program focuses on prioritizing first-of-a-kind successes that increase warfighting capabilities by reducing logistical demand and complexity, increasing commonality for interoperability and resilience, and ensures the warfighter has the energy and understanding to effectively use that power across all domains and levels of engagement.

OECI-Non S&T validates and demonstrates joint, high priority innovative, and cost-effective prototypes, technologies, and methods supporting DOD Operational Energy Strategy/National Defense Strategy addressing known capability gaps. The prototypes meet power and energy requirements mitigating contested logistics challenges through the reduction of operational energy demand and enabling enterprise-wide power and energy visibility.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: OECI-Non S&T	21.169	53.726	53.705
Description: The OECI-Non-S&T program successfully proved its value to the warfighter by: rapidly prototyping, demonstrating, quantifying and validating operational energy capabilities that accelerated transition. FY 2023 Accomplishments: Published the first Tactical Microgrid Standard (TMS) MIL-STD-3071) enabling acquisition of interoperable ground power systems. Developed a microgrid integration prototype testbed designed to accelerate integration with new energy technologies. Congressional Adds were awarded and on contract in FY 2023. These will be utilized to prototype a mobile wind-powered electrical generator platform optimized for operating in austere environments which reduces the energy re-supply risks and enhancing survivability and lethality in contested environments. ***FY 2024 Plans:***			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2024 competitively selected projects include: Energy resource software tool that provides near-real time visibility of US and NATO energy sources to support logistical and combat efforts in the EUCOM theater; Deployable autonomous refueling capability for forward deployed locations; solar cell production technology that will manufacture at an order of magnitude faster than current technologies and use less expensive sourced materials; tactical vehicles with on-board power that reduce the need for towed generators in the battle space; Standardized helicopter, space-based, and vehicle lithium ion batteries that will reduce acquisition costs across DOD; lithium Ion battery-safety technologies that can predict faults within the battery before they occur and eliminate incident propagation between battery cells; a hydrogen fuel cell hybrid UAS prototype that provides longer on-station time and reduces acoustic signatures; deployable energy storage system prototypes that provide high voltage power to forward deployed forces; and energy-sensing technology. Will continue to progress the mobile wind-powered electrical generation platform to transition to a service program of record.			
FY 2025 Plans: FY 2025 project projections include: Aviation efficiencies for propulsion system advances; Airframe designs with operational energy-benefit; Forward-operating refueling and re-powering capabilities; Ground-vehicle power and fuel optimization including optimal resupply in contested environments; Improved on-board power for use and distribution to warfighting systems; Power management for increased survivability (improved signature, anti-idle, and silent operations); Improved vehicle-to-vehicle/vehicle-to-grid microgrid fuel/power optimizations; Operational battery improvements for improving size, weight, safety, and extending reach and operating temperatures; and, Optimizing power and energy utilization in space. Each project will focus on requirements definition and support acquisition strategies ahead of transition to the Services' program offices. Modeling and simulation for each project will support analytical and cost decisions, providing documentation, and Futures' wargaming inputs. Complete the construction and demonstrate the mobile wind-powered electrical generation platform technology to warfighters and assist with transition to a program of record. Prioritize rapidly maturing nuclear operational energy projects for prototyping, demonstration, and validation OECI-Non S&T will continue to perform warfighter demonstrations at both CONUS and OCONUS locations and collect warfighter touchpoint database input to inform Requirements, acquisitions strategies, and validation analytics. This comprehensive approach will assist to accelerate transition of these advanced OE warfighting capabilities across the services.			
FY 2024 to FY 2025 Increase/Decrease Statement: The FY 2024 increase aligns with the growth in advanced technology maturation. With the planned additional funding, OECI-Non S&T will advance commercial Battery Cell standardization for Space and Aviation enabling significant and sustained cost reduction across the acquisition life-cycle, prototype tactical vehicle with a power-generating engine block that will reduce the needs for towed generators in the battle space; standardize helicopter, space-based and vehicle lithium ion batteries; prototype			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
deployable energy storage systems that provide high voltage power to forward deployed forces. Given additional funding, OECI-Non S&T would also expedite the transition of Hydrogen fuel diversification across the battlespace.			
Accomplishments/Planned Programs Subtotals	21.169	53.726	53.705

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

N/A

D. Acquisition Strategy

Operational Energy Capability Improvement—Non S&T (OECI-Non S&T) works with service-specific programs of record (PORs) to ensure funded projects are integrated into their acquisition strategies. The ASD(EI&E) approach integrates across the entire Joint OE community to ensure that Joint Forces have the energy needed to fight and win in contested environments. ASD(EI&E) collaborations include the Service energy offices, other DoD innovation programs (including Defense Innovation Unit), Combatant Commands, Defense Department laboratories, industry and academia.

Each year, the Combatant Commanders (i.e. USINDOPACOM) and the Services Program Executive Offices (PEO) (i.e. PEO Combat Support and Combat Service Support (CS&CSS)) propose projects that will have an impact to the warfighter. Power and energy candidates are ranked by their attributes for warfighter impact and ease of integration into a program of record. The most impactful projects are funded.
OECI-Non S&T has transitioned the following technology:
- Tactical Microgrid Standard (TMS) transitioned to Military Standard (MIL-STD-3071). The Army Joint Program Office for Expeditionary Energy and Sustainment Systems (PM E2S2) implemented this MIL-STD on USMC Small Tactical Electric Power (STEP) for deployable small generators.
- ULTRA Unmanned Aerial Ship (UAS) – Engine Control Unit (ULTRA UAS ECU) provided its optimized fuel injection and spark ignition timing maps to AFRL/RQTC for integration into UAS currently being flown on missions for COCOMs. UAS upgraded with this new ULTRA UAS ECU delivers longer on-station times due to efficient engine controls and less fuel costs. The technology was integrated into a Program of Record under PE 0305205F / Endurance Unmanned Aerial Vehicles.
- Tactical Vehicle Hybridization (TVH) transitioned to the Army's Family of Medium Tactical Vehicles under PE 0604604A. TVH leveraged the DIU rapid procurement with Industry for the prototype development. The program office plans to retrofit over 100,000 vehicles with this technology.
- Dynamic Hydride Vapor Phase Epitaxy (D-HVPE) project doubled the nationwide production of High-Efficiency Photovoltaics. National Renewable Energy Laboratory (NREL), Air Force, and Space Force Program Offices are licensing innovative and cost effective photovoltaic production methods with companies and venture capitalists to increase the domestic industrial base.
- Space to Space Power Beaming prototype transitioned to Air Force Research Lab (AFRL) RXSC for a one year orbital operational test of this capability. Launch, scheduled for FY 2025, will confirm the feasibility of satellite-to-satellite power recharging, extending the effective life of the satellite.
- The capability to meter and monitor energy transitioned the global logistic awareness technology to the Marine Corps CD&I and 3rd MLR. Combatant commanders can remotely manage the logistics of deployed energy and power assets across their area of responsibility.

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

- Sensors for energy monitoring and predictive maintenance were demonstrated with the Army PM-E2S2/C5ISR and the Navy's NAVSEA/NSWC and NAVFAC and transitioned to Navy Aegis Destroyers for immediate integration into shipboard power monitoring.
- Tether power sources that leverage renewable wind energy will contribute to addressing Marine Corps Installation and Logistics Futures power requirements for the austere environments for Marine Corps forward stations and bases.

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

Support ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Support Contract	C/IDDQ	TBD : TBD	1.200	2.400		2.400		2.400		-		2.400	Continuing	Continuing	-
		Subtotal	1.200	2.400		2.400		2.400		-		2.400	Continuing	Continuing	N/A

Test and Evaluation ($ in Millions)

Cost Category Item	Contract Method & Type	Performing Activity & Location	Prior Years	FY 2023 Cost	FY 2023 Award Date	FY 2024 Cost	FY 2024 Award Date	FY 2025 Base Cost	FY 2025 Base Award Date	FY 2025 OCO Cost	FY 2025 OCO Award Date	FY 2025 Total Cost	Cost To Complete	Total Cost	Target Value of Contract
Test and Evaluation	C/TBD	Various : Various	21.869	18.769		51.326		51.305		-		51.305	Continuing	Continuing	-
		Subtotal	21.869	18.769		51.326		51.305		-		51.305	Continuing	Continuing	N/A

	Prior Years	FY 2023		FY 2024		FY 2025 Base		FY 2025 OCO		FY 2025 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals	23.069	21.169		53.726		53.705		-		53.705	Continuing	Continuing	N/A

Remarks

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 035 / *Operational Energy Prototyping*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 036 / *Commanding Energy*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
036: *Commanding Energy*	-	4.328	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OEP is to fund warfighter prototyping, demonstration, and transition that will improve DOD operational effectiveness. As Defense-Wide funding it promotes long term change in DOD capabilities so they are better aligned with the Operational Energy Strategy.

OEP fosters non-S&T innovation to improve operational energy performance and has two key mission aspects. First, to ruggedize, demonstrate, and transition into use operational energy technologies and practices that will improve DOD military capabilities, resiliency, and/or reduce costs. Second, to establish within the military Services sustainable, institutional capability to continue to develop and adopt operational energy innovations.

OEP serves as the program by which operational energy technology advances made under the Operational Energy Capability Innovation program (OECI) can transition to military service acquisition programs without delay and loss of momentum. Transition plans for each successful prototype will be established to ensure that components have time to plan, program, and budget for technology transition to programs of record. Demand for this program is greater than 4 times the funding available ensuring the most competitive programs are awarded to move forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Commanding Energy	4.328	-	-
Description: Operational Energy Prototyping (OEP) continues to identify and demonstrate the most promising, innovative, and cost-effective technologies and methods that address joint high-priority operational energy requirements. OEP solicits proposals from across the DOD and competitively awards projects based on OE impact and programmatic transition. Warfighter feedback is obtained through limited technical assessment, static demonstration, and participation in formal exercises. Transition plans are established for each prototype to ensure support for requirements and acquisition programs of record. OEP invests in prototyping, validations, and demonstrations in four focus areas: (1) support prototype development of new operational energy technologies, (2) carry out formal demonstrations at installations or in conjunction with exercises conducted by the Joint Staff, a combatant command, or a military department, (3) collect cost and performance data to overcome barriers against employing an innovative technology because of concerns regarding technical or programmatic risk, and (4) provide the tools and analysis that quantifies the mission impact of these new technologies.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Commanding Energy - Automated Fuel Reporting and Deployable Metering and Monitoring transitions networked knowledge of energy resources, usage, and combat needs; Tactical Microgrid Standard transitions to the Army and USMC acquisitions offices enabling efficient and optimal energy use across the battlespace; Enhancing energy tools for warfighter mission planning. FY 2023 Accomplishments: In November 2023, OECI-Non S&T delivered a warfighter feedback capability tool during a technology demonstration at Camp Pendleton. The Warfighter Touchpoint Database tool gathers real-time feedback that is shared with government and industry partners to improve the technology and promote accountability and transparency of changes to Requirements, acquisition strategies, and validation analytics. Successfully demonstrated reduced fuel consumption by at least 6% in unmanned aircraft over the Artic Ocean in 4-16 Sep 2023. Demonstrated at Combatant Command locations advanced energy metering and monitoring sensors and tools that provide energy awareness at all echelons.			
Accomplishments/Planned Programs Subtotals	4.328	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 036 / *Commanding Energy*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 in Progress Reviews	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 038 / *Powering The Force*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
038: *Powering The Force*	-	5.798	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OEP is to fund warfighter prototyping, demonstration, and transition that will improve DOD operational effectiveness. As Defense-Wide funding it promotes long term change in DOD capabilities so they are better aligned with the Operational Energy Strategy.

OEP fosters non-S&T innovation to improve operational energy performance and has two key mission aspects. First, to ruggedize, demonstrate, and transition into use operational energy technologies and practices that will improve DOD military capabilities, resiliency, and/or reduce costs. Second, to establish within the military Services sustainable, institutional capability to continue to develop and adopt operational energy innovations.

OEP serves as the program by which operational energy technology advances made under the Operational Energy Capability Innovation program (OECI) can transition to military service acquisition programs without delay and loss of momentum. Transition plans for each successful prototype will be established to ensure that components have time to plan, program, and budget for technology transition to programs of record. Demand for this program is greater than 4 times the funding available ensuring the most competitive programs are awarded to move forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Powering The Force	5.798	-	-
Description: Operational Energy Prototyping (OEP) continues to identify and demonstrate the most promising, innovative, and cost-effective technologies and methods that address joint high-priority operational energy requirements. OEP solicits proposals from across the DOD and competitively awards projects based on OE impact and programmatic transition. Warfighter feedback is obtained through limited technical assessment, static demonstration, and participation in formal exercises. Transition plans are established for each prototype to ensure support for requirements and acquisition programs of record. OEP invests in prototyping, validations, and demonstrations in four focus areas: (1) support prototype development of new operational energy technologies, (2) carry out formal demonstrations at installations or in conjunction with exercises conducted by the Joint Staff, a combatant command, or a military department, (3) collect cost and performance data to overcome barriers against employing an innovative technology because of concerns regarding technical or programmatic risk, and (4) provide the tools and analysis that quantifies the mission impact of these new technologies. Powering the Force – Uncrewed Aerial Vehicle technology transition increases mission on-station time and energy savings with positive climate impact; on-orbit demonstration of wireless power transfer.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2023 Accomplishments: Doubled nation-wide US production capability and reduced production costs by up to 50% of high-efficiency photovoltaic solar cells with first-of-a-kind prototype growth reactor. Validated increased range and duration of Unmanned Aerial Vehicles (UAV) while reducing energy demand through utilizing power and energy from photovoltaic wings, fuel cell applications, and engine efficiency improvements.			
Accomplishments/Planned Programs Subtotals	5.798	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 038 / *Powering The Force*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 in Progress Reviews	2	2023	4	2024

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense			Date: March 2024
Appropriation/Budget Activity 0400 / 4	R-1 Program Element (Number/Name) PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	Project (Number/Name) 054 / *Electrifying The Battlespace*	

COST ($ in Millions)	Prior Years	FY 2023	FY 2024	FY 2025 Base	FY 2025 OCO	FY 2025 Total	FY 2026	FY 2027	FY 2028	FY 2029	Cost To Complete	Total Cost
054: *Electrifying The Battlespace*	-	7.370	0.000	0.000	-	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing
Quantity of RDT&E Articles	-	-	-	-	-	-	-	-	-	-		

A. Mission Description and Budget Item Justification

The mission of the OEP is to fund warfighter prototyping, demonstration, and transition that will improve DOD operational effectiveness. As Defense-Wide funding it promotes long term change in DOD capabilities so they are better aligned with the Operational Energy Strategy.

OEP fosters non-S&T innovation to improve operational energy performance and has two key mission aspects. First, to ruggedize, demonstrate, and transition into use operational energy technologies and practices that will improve DOD military capabilities, resiliency, and/or reduce costs. Second, to establish within the military Services sustainable, institutional capability to continue to develop and adopt operational energy innovations.

OEP serves as the program by which operational energy technology advances made under the Operational Energy Capability Innovation program (OECI) can transition to military service acquisition programs without delay and loss of momentum. Transition plans for each successful prototype will be established to ensure that components have time to plan, program, and budget for technology transition to programs of record. Demand for this program is greater than 4 times the funding available ensuring the most competitive programs are awarded to move forward.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
Title: Electrifying The Battlespace	7.370	-	-
Description: Operational Energy Prototyping (OEP) continues to identify and demonstrate the most promising, innovative, and cost-effective technologies and methods that address joint high-priority operational energy requirements. OEP solicits proposals from across the DOD and competitively awards projects based on OE impact and programmatic transition. Warfighter feedback is obtained through limited technical assessment, static demonstration, and participation in formal exercises. Transition plans are established for each prototype to ensure support for requirements and acquisition programs of record. OEP invests in prototyping, validations, and demonstrations in four focus areas: (1) support prototype development of new operational energy technologies, (2) carry out formal demonstrations at installations or in conjunction with exercises conducted by the Joint Staff, a combatant command, or a military department, (3) collect cost and performance data to overcome barriers against employing an innovative technology because of concerns regarding technical or programmatic risk, and (4) provide the tools and analysis that quantifies the mission impact of these new technologies. Electrifying the Battlespace – Enabling greater industry participation and rapid acquisition of tactical vehicle hybridization and electrification technologies by increasing the types and numbers of tactical vehicles with electric prototypes.			

Exhibit R-2A, RDT&E Project Justification: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

B. Accomplishments/Planned Programs ($ in Millions)	FY 2023	FY 2024	FY 2025
FY 2023 Accomplishments: Prototyped an energy- saving anti-idle, silent watch/silent mobility vehicle that reduces petroleum demand by 20% and extends dismounted warfighter non-refueled operations from 3 days to 5 days.			
Accomplishments/Planned Programs Subtotals	7.370	-	-

C. Other Program Funding Summary ($ in Millions)

N/A

Remarks

D. Acquisition Strategy

N/A

Exhibit R-3, RDT&E Project Cost Analysis: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

Remarks

NA

Exhibit R-4, RDT&E Schedule Profile: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

Schedule Details

	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
Develop Program				
Develop FY 2022 Program	3	2021	1	2022
In Progress Reviews				
FY 2023 In Progress Reviews	2	2023	4	2024

Exhibit R-4A, RDT&E Schedule Details: PB 2025 Office of the Secretary Of Defense		Date: March 2024
Appropriation/Budget Activity 0400 / 4	**R-1 Program Element (Number/Name)** PE 0604555D8Z / *Operational Energy Capability Improvement - Non S&T*	**Project (Number/Name)** 054 / *Electrifying The Battlespace*

Schedule Details

	Start		End	
Events by Sub Project	**Quarter**	**Year**	**Quarter**	**Year**
In Progress Reviews				
FY 2023 in Progress Reviews	2	2023	4	2023