EXHIBIT R-2, RDT&E Budget Item Justification						DATE: February 2006		
APPROPRIATION/BUDGET ACTIVITY REASEARCH DEVELOPMENT TEST & EVALUATION, NAVY / BA 4						R-1 ITEM NOMENCLATURE 0603724N, NAVY ENERGY PROGRAM		
COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	
Total PE Cost	7.510	8.521	1.600	1.586	1.750	1.801	1.857	
0838 NAVY MOBILITY FUELS, CLAIMANT NAVAIR	1.434	1.571	1.600	1.586	1.750	1.801	1.857	
2868 PROTON EXCHANGE MEMBRANE FUEL CELLS	2.701							
9498 MEGAWATT MOLTEN CARBONATE FUEL CELL	3.375							
9999 CONGRESSIONAL ADDS		6.950						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:

0838/Mobility Fuels - This program supports projects to evaluate, adapt, and demonstrate energy related technologies for Navy aircraft and ship operations to: (a) increase fuel-related weapons systems capabilities such as range and time on station; (b) reduce energy costs; (c) apply energy technologies that improve environmental compliance; (d) relax restrictive fuel specification requirements to reduce cos and increase availability worldwide; (e) provide guidance to fleet operators for the safe use of commercial grade or off-specification fuels when military specification fuels are unavailable or in short supply; and make needed periodic changes to fuel specifications to ensure fuel quality and avoid fleet operating problems. This program supports the achievement of legislated, White house, Department of Defense, and Navy Energy Management Goals. It also responds to direction from the Office of the Secretary of Defense, the Secretary of the Navy, and the Chief of Naval Operations to make up-front investment in technologies that reduce future cost of operation and ownership of the fleet and supporting infrastructure.

2868/Proton Exchange Membrane Fuel Cells - This is a Congressional add. Manufacture 12 Proton Exchange Membrane (PEM) Fuel Cell systems, install at Navy facility in Hawaii to be determined (TBD), operate for 12 months, collect and report performance data, remove systems and return sites to original condition. The purpose of the field test is to demonstrate the reliability and life of PEM fuel cell systen that incorporate an advanced membrane electrode assembly that enhances producibility, performance, and reduces cost. The military requirement addressed is the facility requirement for electrical power ar the need to find alternative, affordable energy sources.

9498/Megawatt (MW) Molten Carbonate Fuel Cell Demo - This is a Congressional add. Design and manufacture one 1 MW molten carbonate fuel cell and install at a Navy facility in California TBD, operate 12 months, collect and report performance data. The purpose of the field test is to demonstrate the feasiblity of the molten carbonate fuel cell to interface with the associated power electronics for electrical g connection and provide reliable electrical power. The military requirement addressed is the facility requirement for electrical power and the need to find alternative affordable energy sources.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 0838, NAVY MOBILITY FUELS	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
0838 NAVY MOBILITY FUELS, CLAIMANT NAVAIR	1.434	1.571	1.600	1.586	1.750	1.801	1.857
RDT&E Articles Qty							

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION:This project provides data through engine and fuel system tests which relate the effects of changes in Navy fuel procurement specification properties to the performance and reliability of Naval ship and aircraft engines and fuel systems. This information is required to: (a) determine the extent to which unnecessarily restrictive specification features can be relaxed to reduce cost and increase availability worldwide; (b) provide guidance to fleet operators for the safe use of off-specification or commercial grade fuels when military specificatioin fuels are unavailable or in short supply; and (c) make needed periodic changes to fuel specifications to ensure fuel quality and avoid fleet operating problems while accommodating evolutionary changes in the fuel supply industry. Recent problems with fuel quality have adversely affected ship and aircraft system performance and reliability and resulted in degradation of fuel in storage. The resulting readiness impacts, additional maintenance costs, and the cost of lost equipment, although difficult to quantify, are many times the cost of this product. Over the next decade, the potential for fuel quality related problems will increase because of changing industry practices required to comply with new environmental regulations. This project represents the only investment designed to maintain the Navy's ability to operate as a "smart" customer for fuels that cost over $2.5 B per year for procurement, transport, storeage and consuming and are essential to fleet operations.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**		PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 0838, NAVY MOBILITY FUELS

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.655	.795	.800
RDT&E Articles Qty			

Aircraft Fuels

Performs development, test and evaluation work on Naval aircraft fuels to: a) determine the extent to which unnecessarily restrictive specification features can be relaxed to reduce cost and increase availability worldwide; b) provide guidance to fleet operators for the safe use of military aircraft that include new additives or are from new sources including synthetics; and c) make needed periodic changes to the fuel specifications to ensure fuel quality and avoid fleet operating problems while accommodating evolutionary changes in the fuel supply industry.

Continued development and evaluation of JP-5 copper contamination removal system. Initiated development of an equipment/fuel qualification procedure to evaluate and approve synthetic aircraft fuels. Completed evaluation of impacts of copper contamination on aircraft engine maintenance/performance.

Continue development of a qualification procedure to evaluate and approve utilization of synthetic and ultra clean, low sulfur jet fuels. Continue development and evaluation of JP-5 copper contamination removal system. Initiate development of shipboard-based sensors and instruments to rapidly determine critical jet fuel properties. Implement +100 thermal stability enhancing jet fuel additive across T-45 (Training aircraft fleet) fleet for shore-based application.

Continue development of JP-5 copper contamination removal system. Continue development of a qualification procedure to evaluate and approve utilization of synthetic and ulta-clean, low sulfur jet fuels. Continue development of shipboard-based sensors and instruments to rapidly determine critical jet fuel properties.

Conduct field trial of copper contamination system. Continue development of shipboard-based sensors and instruments to rapidly determine critical jet fuel properties. Continue development of a qualification procedure to evaluate and approve utilization of synthetic and ultra-clean, low sulfur jet fuels.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**		PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 0838, NAVY MOBILITY FUELS

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	.779	.776	.800
RDT&E Articles Qty			

Ship Fuels

Performs development, test and evaluation work on Naval ship propulsion fuels to: a) determine the extent to which unnecessarily restrictive specification features can be relaxed to reduce cost and increase availability worldwide; b) provide guidance to fleet operators for the safe use of off-specification or commercial grade fuels when military fuels are unavailable or in limited supply; and c) make needed periodic changes to fuel specifications to ensure fuel quality and avoid fleet operating problems while accomodating evolutionary changes in the fuel supply industry.

Continued assessment of the feasibility of specifying JP-5 (jet fuel) as the single fuel at sea for use by all Naval Systems (ships, aircraft and ground equipment). Continued review of the F-76 ship distillate fuel specification and test requirements evaluation to remove any unnecessary requirements to increase availability. Completed development and aceptance of commercial fuel specification American Society For teh Testing of Materials (ASTM D6985 Specification For Middle Distillate Fuel Oil- Military Marine Applications). Initiated development of a qualification procedure to evaluate and approve utilization of synthetic and ultr-clean. low sulfur ship fuels.

Complete assessment of the feasibility of specifying JP-5 as the Single Fuel at-sea for use by all Naval Systems (ships, aircraft and ground equipment). Continue development of a qualification procedure to evaluate and approve utilization of synthetic and ultra clean, low sulfur ship fuels. Complete F-76 specification and test requirements evaluation to determine, modify and/or remove any unnecessary requirements to increase availability.

Conduct JP-5 single fuel at sea iniative field trial. Continue development of a qualification procedure to evaluate and approve utilization of synthetic and ultra-clean, low sulfur ship fuels. Initiate development of shipboard-based sensors and instruments to rapidly determine critical ship fuel properties.

Initiate Implementation of JP-5 as Single Naval Fuel At-Sea. Continue development of a qualification procedure to evaluate and approve utilization of synthetic and ultra-clean, low sulfur ship fuels. Continue development of shipboard-based sensors and instruments to rapidly determine critical ship fuel properties.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 0838, NAVY MOBILITY FUELS	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	1.479	1.595	1.607
Current BES / President's Budget:	1.434	1.571	1.600
Total Adjustments	-0.045	-0.024	-0.007
Summary of Adjustments			
Congressional Undistributed Reductions	-0.001	-0.017	
Economic Assumptions		-0.007	0.009
Program Adjustments	-0.044		-0.016
Subtotal	-0.045	-0.024	-0.007

Schedule: Schedules have been added since last President's Budget submit.

Technical: Not Applicable

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost

Not Applicable

E. ACQUISITION STRATEGY:

Not Applicable

Exhibit R-3 Cost Analysis (page 1)									DATE: February 2006			
APPROPRIATION/BUDGET ACTIVITY RDT&E, N / BA 4		PROGRAM ELEMENT 0603724N, NAVY ENERGY PROGRAM				PROJECT NUMBER AND NAME 0838, NAVY MOBILITY FUELS						
Cost Categories	Contract Method & Type	Performing Activity & Location	Total PY s Cost	FY 2005 Cost	FY 2005 Award Date	FY 2006 Cost	FY 2006 Award Date	FY 2007 Cost	FY 2007 Award Date	Cost to Complete	Total Cost	Target Value of Contract
PRODUCT DEVELOPMENT												
Systems Engineering		NRL, WASHINGTON DC		.350	3/1/2005					Continuing	Continuing	
SUBTOTAL PRODUCT DEVELOPMENT				.350						Continuing	Continuing	
Remarks:												
SUPPORT												
SUBTOTAL SUPPORT												
Remarks:												
TEST & EVALUATION												
Devlopmental Test & Evaluation	VARIOUS	VARIOUS		.077	VARIOUS	.795	VARIOUS	.800	VARIOUS	Continuing	Continuing	
Devlopmental Test & Evaluation		SOUTHWEST RESEARCH INSTITUTE, SAN A		.228	3/1/2005					Continuing	Continuing	
SUBTOTAL TEST & EVALUATION				.305		.795		.800		Continuing	Continuing	
Remarks:												
MANAGEMENT												
Program Management Support	VARIOUS	VARIOUS		.779	VARIOUS	.437	VARIOUS	.453	VARIOUS	Continuing	Continuing	
Program Management Support		SOUTHWEST RESEARCH INSTITUTE, SAN A				.339	3/1/2006	.347	3/1/2007	Continuing	Continuing	
SUBTOTAL MANAGEMENT				.779		.776		.800		Continuing	Continuing	
Remarks:												
Total Cost				1.434		1.571		1.600		Continuing	Continuing	
Remarks:												

CLASSIFICATION:

EXHIBIT R4, Schedule Profile

DATE: **February 2006**

APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N / BA-4	0603724N, NAVY ENERGY PROGRAM	0838, NAVY MOBILITY FUELS

Fiscal Year	2005				2006				2007				2008				2009				2010				2011							
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4				
Aircraft Fuels																																
Ship Fuels																																

Exhibit R-4a, Schedule Detail					DATE: **February 2006**			
APPROPRIATION/BUDGET ACTIVITY **RDT&BA-4**	PROGRAM ELEMENT 0603724N, NAVY ENERGY PROGRAM				PROJECT NUMBER AND NAME 0838, NAVY MOBILITY FUELS			
Schedule Profile	2005	2006	2007	2008	2009	2010	2011	
Aircraft Fuels	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	
Ship Fuels	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	1Q-4Q	

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 2868, PROTON EXCHANGE MEMBRANE FUEL CELLS	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
2868 PROTON EXCHANGE MEMBRANE FUEL CELLS	2.701						
RDT&E Articles Qty	12						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 2868/Proton Exchange Membrane Fuel Cells - This is a Congressional add. Manufacture 12 Proton Exchange Membrane (PEM) Fuel Cell systems, install at PWC Pearl Harbor, Hawaii , operate for 12 months, collect and report performance data, remove systems and return sites to original condition. The purpose of the field test is to demonstrate th reliability and life of PEM fuel cell systems that incorporate an advanced membrane electrode assembly that enhances producibility, performance, and reduces cost. The military requirement addressed is the facility requirement for electrical power and the need to find alternative, affordable energy sources.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY		PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME
RDT&E, N /	**BA 4**	**0603724N, NAVY ENERGY PROGRAM**	2868, PROTON EXCHANGE MEMBRANE FUEL CELLS

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	2.701		
RDT&E Articles Qty	12		

2868/Proton Exchange Membrane - Manufacture, installation, operation, and performance evaluation of 12 Proton Exchange Membrane Fuel Cell systems at PWC Pearl Harbor, Hawaii.

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	2.774		
Current BES / President's Budget:	2.701	0.000	0.000
Total Adjustments	-0.073	0.000	0.000
Summary of Adjustments			
Congressional Undistributed Reductions	-0.074		
Congressional Increases	0.001		
Subtotal	-0.073	0.000	0.000

Schedule: Not Applicable.

Technical: Not Applicable.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 2868, PROTON EXCHANGE MEMBRANE FUEL CELLS	

D. OTHER PROGRAM FUNDING SUMMARY:

	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
N/A									

E. ACQUISITION STRATEGY: Program management and acquisition by Naval Air Warfare Center Weapons Division (NAWCWD). Technical management by NAWCWD. Contracting strategy is sole source firm fixed price contract (Hoku Scientific).

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 9498, MEGAWATT MOLTEN CARBONATE FUEL CELL DEMO	

COST ($ in Millions)	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011
9498 MEGAWATT MOLTEN CARBONATE FUEL CELL	3.375						
RDT&E Articles Qty	1						

A. MISSION DESCRIPTION AND BUDGET ITEM JUSTIFICATION: 9498/Megawatt (MW) Molten Carbonate Fuel Cell Demo - This is a Congressional add. Design and manufacture one 1 MW molten carbonate fuel cell and install at MCB Camp Pendleton in California, operate for 12 months, collect and report performance data. The purpose of the field test is to demonstrate the feasiblity of the molten carbonate fuel cell to interface with the associated power electronics for electrical grid connection and provide reliable electrical power. The military requirement addressed is the facility requirement for electrical power and the need to find alternative, affordable energy sources. This was a new start effort in FY05. Project value includes potential for cost savings, environmental mitigation, and energy security for electrical power production.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N / BA 4**		PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 9498, MEGAWATT MOLTEN CARBONATE FUEL CELL DEMO

B. ACCOMPLISHMENTS / PLANNED PROGRAM:

	FY 2005	FY 2006	FY 2007
Accomplishments / Effort / Sub-total Cost	3.375		
RDT&E Articles Qty	1		

9498/Megawatt Molten Carbonate - Design, manufacture, installation, operation, and performance evaluation of one 1 Megawatt molten carbonate fuel cell at MCB Camp Pendleton in California.

EXHIBIT R-2a, RDT&E Project Justification			DATE: February 2006
APPROPRIATION/BUDGET ACTIVITY **RDT&E, N /** **BA 4**	PROGRAM ELEMENT NUMBER AND NAME **0603724N, NAVY ENERGY PROGRAM**	PROJECT NUMBER AND NAME 9498, MEGAWATT MOLTEN CARBONATE FUEL CELL DEMO	

C. PROGRAM CHANGE SUMMARY

Funding:	FY 2005	FY 2006	FY 2007
Previous President's Budget:	3.466		
Current BES / President's Budget:	3.375	0.000	0.000
Total Adjustments	-0.091	0.000	0.000
Summary of Adjustments			
Congressional Undistributed Reductions	-0.092		
Congressional Increases	0.001		
Subtotal	-0.091	0.000	0.000

Schedule: Not Applicable.

Technical: Not Applicable.

D. OTHER PROGRAM FUNDING SUMMARY:	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	To Complete	Total Cost
N/A									

CLASSIFICATION:

EXHIBIT R-2a, RDT&E Project Justification			DATE: **February 2006**
APPROPRIATION/BUDGET ACTIVITY	PROGRAM ELEMENT NUMBER AND NAME	PROJECT NUMBER AND NAME	
RDT&E, N / BA-4	0603724N, NAVY ENERGY PROGRAM	9999, Congressional Adds	

9498		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	3.200	0.000
RDT&E Articles Quantity			1	

One megawatt molten carbonate fuel cell demonstrator--Camp Pendleton

9769		FY 05	FY 06	FY 07
Accomplishments/Effort/Subtotal Cost		0.000	3.750	0.000
RDT&E Articles Quantity			1	

One megawatt molten carbonate fuel cell demonstrator--Pearl Harbor Naval Station