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**Exhibit R-2, RDT&E Budget Item Justification: PB 2012 Air Force** **DATE:** February 2011

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604796F: <i>Alternative Fuels</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
Total Program Element	68.350	24.064	-	-	-	-	-	-	-	Continuing	Continuing
645287: <i>Assured Fuels</i>	68.350	24.064	-	-	-	-	-	-	-	Continuing	Continuing

**A. Mission Description and Budget Item Justification**

The Alternative Fuels program manages the certification of current and future alternative fuels for operational use in all legacy and future weapons systems, applicable support equipment, and fuel delivery and storage infrastructure. The alternative fuel types being evaluated and certified include various synthetic fuels, bio-mass derived fuels, and fuel blend technologies. This effort includes complete system evaluations, studies and analysis, subsystem and system-level testing, safety, environmental analysis, fuel stock purchase, fuel storage and transport and other USAF certification costs. Scope of activities include interaction with all USAF weapon system single managers to accomplish complete certification activities for applicable weapon systems. Initiative supports USAF assured fuels effort to decrease US dependence on foreign oil and secure additional fuel-types on which to conduct world-wide operations.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

<b>B. Program Change Summary (\$ in Millions)</b>	<b>FY 2010</b>	<b>FY 2011</b>	<b>FY 2012 Base</b>	<b>FY 2012 OCO</b>	<b>FY 2012 Total</b>
Previous President's Budget	73.020	24.064	-	-	-
Current President's Budget	68.350	24.064	-	-	-
Total Adjustments	-4.670	-	-	-	-
• Congressional General Reductions		-			
• Congressional Directed Reductions		-			
• Congressional Rescissions	-	-			
• Congressional Adds		-			
• Congressional Directed Transfers		-			
• Reprogrammings	-2.390	-			
• SBIR/STTR Transfer	-1.975	-			
• Other Adjustments	-0.305	-			

**Change Summary Explanation**

FY 2010 - adjustments for higher Air Force priorities.

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**Exhibit R-2A, RDT&E Project Justification:** PB 2012 Air Force **DATE:** February 2011

<b>APPROPRIATION/BUDGET ACTIVITY</b> 3600: <i>Research, Development, Test &amp; Evaluation, Air Force</i> BA 4: <i>Advanced Component Development &amp; Prototypes (ACD&amp;P)</i>	<b>R-1 ITEM NOMENCLATURE</b> PE 0604796F: <i>Alternative Fuels</i>	<b>PROJECT</b> 645287: <i>Assured Fuels</i>
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COST (\$ in Millions)	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total	FY 2013	FY 2014	FY 2015	FY 2016	Cost To Complete	Total Cost
645287: <i>Assured Fuels</i>	68.350	24.064	-	-	-	-	-	-	-	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

**A. Mission Description and Budget Item Justification**

The Alternative Fuels program manages the certification of current and future alternative fuels for operational use in all legacy and future weapons systems, applicable support equipment, and fuel delivery and storage infrastructure. The alternative fuel types being evaluated and certified include various synthetic fuels, bio-mass derived fuels, and fuel blend technologies. This effort includes complete system evaluations, studies and analysis, subsystem and system-level testing, safety, environmental analysis, fuel stock purchase, fuel storage and transport and other USAF certification costs. Scope of activities include interaction with all USAF weapon system single managers to accomplish complete certification activities for applicable weapon systems. Initiative supports USAF assured fuels effort to decrease US dependence on foreign oil and secure additional fuel-types on which to conduct world-wide operations.

This program is in Budget Activity 4, Advanced Component Development and Prototypes (ACD&P), because efforts are necessary to evaluate integrated technologies, representative modes or prototype systems in a high fidelity and realistic operating environment.

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

	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
<b>Title:</b> Assured Fuels	68.350	24.064	-	-	-
<b>Description:</b> Certify AF weapon systems (including appropriate support equipment and base-level fuel delivery and storage infrastructure) to operate using any number of alternative fuel stocks.					
<b>FY 2010 Accomplishments:</b> Effort includes laboratory, infrastructure and flight test support for certification activities for the eight remaining USAF platforms using the Fischer-Tropsch (FT) derived synthetic fuel. Final disposition of certification requirements for all USAF Commercial Derivative Aircraft (CDA) using the FT fuel blend will also be completed. Additionally, laboratory and flight test activities supporting certification efforts on three USAF platforms using 50/50 fuel blends comprised of JP-8 and biomass-derived Hydro-treated Renewable Jet (HRJ) fuels will be conducted. Dedicated testing of augmented engines using the HRJ blend will be accomplished using test resources located at Arnold Engineering and Development Center (AEDC) and contractor facilities. Evaluation of infrastructure, toxicology, Environment, Safety and Occupational Health (ESOH) and fire suppression effectiveness of the HRJ blend will also be initiated. Acquisition of supplemental quantities of HRJ fuels is also					

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<b>B. Accomplishments/Planned Programs (\$ in Millions)</b>	FY 2010	FY 2011	FY 2012 Base	FY 2012 OCO	FY 2012 Total
planned. MIL-HBK-510 will undergo revision. Transportation and storage of fuel to test locations will also be supported. Effort includes associated management and support costs.					
<b><i>FY 2011 Plans:</i></b> Efforts will include laboratory and flight test support for certification activities on approximately five USAF platforms, ground support equipment and infrastructure using biomass-derived/HRJ fuel blend. Disposition of certification requirements for all USAF Commercial Derivative Aircraft (CDA) using the HRJ fuel blend will be accomplished. Evaluation of infrastructure, toxicology, ESOH, and fire suppression effectiveness of the HRJ blend will be completed. Acquisition of supplemental quantities of HRJ fuels is also planned. MIL-HBK-510 will undergo revision. Transportation and storage of fuel to test locations will also be supported. Effort includes associated management and support costs.					
<b><i>FY 2012 Base Plans:</i></b>					
<b><i>FY 2012 OCO Plans:</i></b>					
<b>Accomplishments/Planned Programs Subtotals</b>	68.350	24.064	-	-	-

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

<u>Line Item</u>	<u>FY 2010</u>	<u>FY 2011</u>	<u>FY 2012 Base</u>	<u>FY 2012 OCO</u>	<u>FY 2012 Total</u>	<u>FY 2013</u>	<u>FY 2014</u>	<u>FY 2015</u>	<u>FY 2016</u>	<u>Cost To Complete</u>	<u>Total Cost</u>
• Activity Not Provided: <i>Title Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	Continuing	Continuing

**D. Acquisition Strategy**  
Funding may be executed internally within the Agile Combat Support Directorate (ASC/WN) via full and open competition or released to other organizations for alternative fuel certification projects for which they are the Office of Primary Responsibility (OPR). OPRs will determine the most appropriate contract vehicle.

**E. Performance Metrics**  
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.

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**Exhibit R-3, RDT&E Project Cost Analysis: PB 2012 Air Force** **DATE:** February 2011

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<b>Product Development (\$ in Millions)</b>				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-	0.000	0.000	0.000

<b>Support (\$ in Millions)</b>				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Certify Air Force weapon systems to operate using a variety of alternative fuel stocks, purchase/store/transport/analyze fuel, perform system analysis/testing, assess safety impacts, and complete ...	Various	ASC/WNN:AF,	89.746	22.600		-		-		-	0.000	112.346	0.000
Determine compatibility/operability of materials, valves, fuel pumps, Automated Tank Gauging (ATG), distribution pipelines, Fuels Mobility Support Equipment (FMSE) and other applicable storage stab...	Various	AFPET:TBD,	1.836	1.002		-		-		-	0.000	2.838	0.000
<b>Subtotal</b>			91.582	23.602		-		-		-	0.000	115.184	0.000

<b>Test and Evaluation (\$ in Millions)</b>				FY 2011		FY 2012 Base		FY 2012 OCO		FY 2012 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
<b>Subtotal</b>			-	-		-		-		-	0.000	0.000	0.000

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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2012 Air Force		<b>DATE:</b> February 2011
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<b>Exhibit R-4, RDT&amp;E Schedule Profile:</b> PB 2012 Air Force		<b>DATE:</b> February 2011
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<b>Exhibit R-4A, RDT&amp;E Schedule Details:</b> PB 2012 Air Force		<b>DATE:</b> February 2011
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Schedule Details

Events	Start		End	
	Quarter	Year	Quarter	Year
Certification Efforts	1	2010	4	2012
Flight Tests	1	2010	4	2012
Engine Tests	1	2010	4	2012