FISCAL YEAR 2019

STATE CLEAN DIESEL GRANT PROGRAM

WORK PLAN AND BUDGET NARRATIVE TEMPLATE

INSTRUCTIONS: States and territories applying for FY 2019 DERA State Clean Diesel Grant Program funding must use this template to prepare their Work Plan and Budget Narrative.

Please refer to the FY 2019 STATE CLEAN DIESEL PROGRAM INFORMATION GUIDE for full Program details, eligibility criteria and funding restrictions, and application instructions.

****

SUMMARY PAGE

Project Title: Alaska Clean Diesel Project FFY19

Project Manager and Contact Information

Organization Name: Alaska Energy Authority

Project Manager: Rebecca Garrett

Mailing Address: 813 W. Northern Lights Blvd, Anchorage, AK 99503

Phone: 907-771-3042

Fax: 907-771-3044

Email: rgarrett@akenergyauthority.org

WORK PLAN UPDATED FEBRUARY 2020

Project Budget Overview:

	FY 2019
EPA Base Allocation	$315,508
State or Territory Voluntary Matching Funds (if applicable)	$315,508
EPA Match Incentive (Bonus) (if applicable)	$157,754
Mandatory Cost-Share	$157,754
TOTAL Project Cost	**$946,524**
Other Leveraged Funds	$

Project Period

October 1, 2019 – September 30, 2021

Summary Statement

Alaska Energy Authority (AEA) will issue up to five subaward grants to replace up to ten prime power diesel engines in the rural Alaska communities. A prioritized list of potential communities is attached to this work plan.

AEA will consult with the Alaska Department of Environmental Conservation (ADEC) Division of Air Quality and will comply with all applicable emissions regulations.

Rural communities in Alaska are not connected to the electrical grid and must generate their own electricity. Small diesel power plants are used for this purpose. These plants have at least

one diesel engine running continuously. Rural Alaska communities rely on these engines for their prime power; however, many of these power plants use older technology, high emitting engines.

This grant will partially fund replacement of up to twenty-five non-certified and lower tier diesel engines with Tier 2 and 3 marine engines, and low PM emitting nonroad engines. These engines will be installed because of their proven reliability, fuel economy, and because they are as clean or cleaner than non-road Tier 3 engines.

Past DERA State Clean Diesel Program projects can be found at: http://www.akenergyauthority.org/Programs/DERA

This work plan includes EPA's concurrence with AEA's State of Alaska DERA Implementation Plan, Waiver Request submitted May 23, 2019 and supported by the EPA in a letter dated June 27, 2019. This waiver is summarized below:

1. Reduced mandatory cost-share using 2018 Tribal DERA cost-share requirements for projects benefiting rural Alaska Tribes
2. Replace stationary prime power Nonroad Engines and Equipment with certified Tier 2 & Tier 3 marine engines
3. Replace larger stationary prime power Nonroad Engines and Equipment (generally larger than 550 HP) with Tier 0, Tier 1 and Tier 2 low PM emitting engines
4. Exceed administrative cost cap due to Alaska's unique logistic and technical support requirements

****

SCOPE OF WORK

AEA will use DERA funds to complete up to ten diesel engine repower and/or replacements. The repowers/replacements will replace antiquated mechanically governed and lower tier prime power diesel genset engines with newer, more fuel efficient Tier 2 and Tier 3 marine and low PM emitting nonroad engines. These engines are equipped with electronically controlled governors, which improves performance and reduces emissions. In accordance with EPA's approved waiver, DERA funds will be used to purchase engine/generators and associated equipment. Equipment includes freight, labor engineering and materials needed to install the cleaner engines and implement required upgrades to interface the engines with the existing power plants cooling, fuel, switchgear and exhaust systems. Where remanufactured or rebuilt engines are used they will be "certified Tier compliant" by conformance with 40 CFR 1068.120 as explained in the EPA-420-F-12-052 document.

The repowered and replacement gensets will continue to perform the same function as the existing non-certified engine. Engines for generator repower and replacement will be selected to provide the optimum reliability and fuel economy for the available engine horsepower.

The Alaska Energy Authority (AEA) has developed a community priority list of potentially eligible engines for DERA replacement. Should a selected community drop out, an engine not meet DERA requirements, or an appropriate replacement engine cannot be procured, AEA will select another community from the priority list. When a new community is identified, a community-specific emission table and budget will be submitted to the EPA Project Officer for approval. AEA is matching the 2019 EPA grant with Volkswagen, state, local, and other funding as available[1].

For engines temporarily out of service, the utility's intent to return the engine to service will be documented, in addition to the FFY19 eligibility requirements. The replaced engine blocks will be rendered permanently disabled and disposed of in the local landfill.

In rural Alaska, communities are not connected to an electric grid and must generate power in their local community. Small diesel power plants are used across the state for this purpose. These plants have at least one diesel engine running continuously. The engines and generators must be absolutely reliable to provide consistent power to the residents to ensure health and welfare.

Although the air quality in rural Alaska is typically quite good, power plants are often located in the center of these communities, exposing residents to the pollution from them. This grant will assist AEA in taking action to meet the goal of reducing exposure to criteria pollutants, hazardous air pollutants, as well as reducing greenhouse gas emissions, while maintaining the economic vitality of the state.

AEA will consult with the Alaska Department of Environmental Conservation (ADEC) Division of Air Quality to ensure compliance with applicable emissions regulations. ADEC requested AEA take over as the lead granting authority to administer Alaska's State Clean Diesel Program per the letter from State Commissioner Larry Hartig to Gina McCarthy dated April 15, 2016. EPA approved this request by letter dated May 11, 2016.

AEA's Circuit Rider/Technical Assistance group work with local organizations that operate their own electric utilities. These organizations are very small, often serving as few as one hundred customers, sometimes fewer. Being so small, the organizations often experience technical and administrative challenges due to the lack of economies of scale or specialized skills.

AEA maintains a database of the electric utilities it supports through its Rural Power System Upgrade (RPSU) program. The database was created in 2001, updated in 2012, and continues to be updated to reflect the current status of operating diesel gensets in Alaska communities. The RPSU power plant database contains detailed information on over 560 diesel gensets in 171 communities throughout rural Alaska. This database is used to identify communities with diesel engines eligible for repower and/or replacement using DERA funds.

[1] Other contributions may come from the Denali Commission and local utilities.

Most rural communities in Alaska are federally recognized Alaskan Native Tribes. This work plan is based on the waiver request submitted (and approved by) the EPA that includes the use of an 80% EPA / 20% State cost share split, as allowed for in the Tribal Clean Diesel program.

AEA will issue subaward grants using a combination of funding from DERA, voluntary match (VW), State funds, and other contributions. Using these grant funds, AEA on behalf of the community, or the community, will hire an engineering firm with expertise in remote Alaska power generation and experience with DERA programmatic requirements to prepare specifications, assist with materials and engine/generator procurement, and integrate the electronically controlled engines into the existing power plant switchgear. Rebecca Garrett (AEA Project Manager) will oversee the grant to ensure the communities comply with all Clean Diesel Program requirements.

This project will take place in five steps:

- Task 1: Confirm each rural community has a DERA eligible engine and submit emission tables and updated budget to Project Officer.
- Task 2: Design and identify specifications – Procure contractual assistance for design of the engine/generator installations and development of specifications specific to each installation.
- Task 3: Engine/generator procurement – Purchase engines, generators and associated equipment, including any required assembly and testing.
- Task 4: Transport – Ship engines/generators and materials to the communities.
- Task 5: Installation and commissioning – Install generator repowers / replacements, and obtain assistance to integrate the electronically controlled engines with the existing switchgear, fuel, exhaust and cooling systems. If requested, AEA staff will offer technical assistance during startup and commissioning of the engines.

Throughout the project, AEA will provide administrative project management and in the case of a managed subaward grant, AEA procurement staff will prepare the request for proposals or invitation to bid. AEA will also manage the EPA Clean Diesel grant to ensure all grant requirements are met.

Timeline

The project timeline is shown below based on an EPA Clean Diesel grant execution date of October 1, 2019 to September 30, 2021.

				2019			2020												2021								
	Days	Start	Finish	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
	731	10/1/2019	9/30/2021																								
T1	90	10/1/2019	12/30/2019																								
T2	180	12/1/2019	4/30/2020																								
T3	60	5/1/2020	6/30/2020																								
T4	120	7/1/2020	10/30/2020																								
T5	100	9/1/2020	1/15/2021																								

Time is allowed after Task 5 for the closeout and project schedule float.

Fund disbursement methods

AEA will subaward the EPA DERA, Volkswagen Settlement funds, State RPSU, and other funds if applicable to the communities. AEA will ensure each grantee secures the services of an engineering firm licensed in the state of Alaska with specific knowledge of remote Alaska power generation and is experienced with DERA program and procurement requirements. AEA will work hand in hand with the communities to expend the grant funding and State or local match to purchase and install eligible equipment. AEA will report activities and expenditures to EPA.

EPA DERA Programmatic Priorities

All of the projects proposed in this work plan will take place in rural Alaska native communities. The reason for this selection is outlined below using previous DERA program priorities:

1. **Maximize public health benefits**

   Power generation in rural Alaska depends on diesel engines, often operating in the center of a village, close to homes, workplaces, and the school. The proximity of power plants to these buildings may pose an increased health risk. Replacing older engines in these facilities with ones that meet more stringent emission requirements will reduce emissions production. In addition, improved efficiency will require less fuel, again reducing emissions, and with the added benefit of lowered costs. In rural communities, diesel fuel can cost up to $10 a gallon. Any savings on fuel is a significant cost savings.

2. **Most Cost Effective**

   It is in the best interest for Alaska to support projects that are cost effective and meet the most urgent need. The engines selected for replacement are non-certified, mechanically governed and lower tier diesel engines that are dirty and inefficient compared to the newer DERA replacement engines.

3. **Population density**

   Setting priorities based on overall population in Alaska is difficult. Seventy percent of the population lives in larger populated areas facing air quality challenges similar to other areas in the country. The other thirty percent of the Alaska population lives in small

communities and remote, rural villages, some with serious air quality problems. These smaller areas are often at a disadvantage due to technological and funding shortfalls, despite having air quality concerns.

As mentioned above, although the communities benefiting from this grant are not densely populated areas by typical urban standards, the proximity of the diesel power plant to residences, schools and other community buildings mean that residents may be more exposed to exhaust from the power plant than they would be in an urban city.

The AEA program targets communities with engines that fit within the DERA criteria and where they fall on the project ranking list. In addition to replacing equipment, upgrading the systems provides emission improvements.

4. **Disproportionate quantity of air pollution from diesel**
   Alaska is unique in its diesel use. Power in rural villages is typically generated from diesel in small systems, thus using a disproportionally large quantity of diesel.

5. **Include certified engine configuration or verified technology that has a long expected useful life**
   Power generation in rural communities is expensive compared to more urban areas. To help contain costs, engines in the power plants must use technology that will last. All engines used under the DERA grant will be configurations that have been proven to be reliable and long-lived.

6. **Maximize the useful life of any certified engine configuration or verified technology used or funded by the eligible entity**
   Record drawings will be prepared for each grantee documenting the completed work. Operations and Maintenance (O&M) manuals will be updated and incorporate manufacturer's recommended maintenance and service intervals for all generation equipment. AEA will continue to provide technical support (as requested) through its Circuit Rider Maintenance program to assist communities to maximize the useful life of the installed generation equipment.

7. **Conserve diesel fuel**
   Installing newer certified, more efficient engines will both reduce the emissions per quantity of fuel combusted, as well as produce electricity more efficiently further reducing emissions, as well as saving money. In most rural communities, diesel is well over $4 per gallon and can be significantly higher in many. Occasionally, a community may experience a fuel shortage if fuel transport is delayed. Again, increased fuel efficiency can make existing stored supplies last longer, reducing the chances of shortages.

EPA's Strategic Plan Linkage and Anticipated Outcomes/Outputs & Performance Measures

1. **Linkage to EPA Strategic Plan**
   The fuel efficiency and emission reductions that result from this project support EPA's primary objective of improving air quality and ensuring areas meet high air

quality standards. The project will improve tribal air quality by replacing engines in native Alaska villages. Greenhouse gas emission reductions will result from improved fuel efficiency of the engines.

2. **Outputs**

The expected outputs from this project include:

1. Decommission up to twenty-five non-certified and lower tier engines and replace them with certified marine Tier 2 and Tier 3, and low PM emitting nonroad engines,
2. Reduce air pollutants, and
3. Improve fuel efficiency.

The following table shows the proposed replacement engines for each community. *Equipment and installation costs are approximate.*

Community	Existing Engine	Replacement Engine
Anvik	Cummins LTA 10 (Uncontrolled) 168 kW Prime	Detroit Diesel S60 (Nonroad Tier 1) 200 kW Prime
Arctic Village	John Deere 6081AF001 (Uncontrolled) 130 kW Prime	John Deere 6068AFM85 (Tier 3 Marine) 150 kW Prime
Arctic Village	John Deere 6068TF250 (Uncontrolled) 115 kW Prime	John Deere 4045AFM85 (Tier 3 Marine) 100 kW Prime
Arctic Village	John Deere 6068TF250 (Uncontrolled) 115 kW Prime	John Deere 4045AFM85 (Tier 3 Marine) 100 kW Prime
Chenega Bay	Capstone C65 Microturbine (Uncontrolled) 65 kW Prime	John Deere 4045AFM85 (Tier 3 Marine) 100 kW Prime
Chenega Bay	John Deere 4045TFM75 (Tier 2 Marine) 65 kW Prime	John Deere 4045AFM85 (Tier 3 Marine) 100 kW Prime

In Anvik, the State DERA program will replace one mechanical uncontrolled engine (GEN1) and AVEC will replace one Nonroad Tier 1 engine (GEN2) with Detroit Series 60 Low PM emitting engines. The existing mechanical uncontrolled GEN3 will be assigned to emergency backup operations. Anvik uses approximately 35,700 gallons of diesel fuel to generate about 409,000 kWh annually. Resulting emission reductions in Anvik is shown in the table below.

ANVIK

Annual Results (short tons)	NOx	PM2.5	HC	CO	CO2
Baseline Engines	7.60	0.914	0.47	3.38	401.3
Replacement Engines	10.12	0.046	0.09	0.49	354.1
Percent Reduced	-33%	95%	81%	86%	12%

over a 10-year lifespan would have the following savings.

Annual Results (short tons)	NOx	PM2.5	HC	CO	CO2
Baseline Engine	75.99	9.14	4.72	33.82	4013.0
Replacement Engine	101.15	0.46	0.92	4.88	3541.1
Percent Reduced	-33%	95%	81%	86%	12%

Note: the above emissions assume the two replacement engines run 100% of the time.

In Arctic Village, the State DERA program will replace three mechanical uncontrolled engines (GEN's 1-3) with Marine Tier 3 engines. The existing mechanical uncontrolled GEN4 will be assigned to emergency backup operations. Arctic Village uses approximately 48,000 gallons of diesel fuel to generate about 533,000 kWh annually. Resulting emission reductions in Arctic Village is shown in the table below.

ARCTIC VILLAGE

Annual Results (short tons)	NOx	PM2.5	HC	CO	CO2
Baseline Engines	8.62	1.489	0.80	5.54	539.0
Replacement Engines	2.63	0.053	0.09	0.53	503.4
Percent Reduced	70%	96%	89%	91%	7%

over a 10-year lifespan would have the following savings.

Lifetime Results (short tons)	NOx	PM2.5	HC	CO	CO2
Baseline Engines	86.22	14.89	7.99	55.44	5389.9
Replacement Engines	26.28	0.53	0.88	5.26	5034.4
Percent Reduced	70%	96%	89%	91%	7%

Note: the above emissions assume the marine engines will run 100% of the time.

In Chenega Bay, the State DERA program will replace one uncontrolled microturbine (GEN1) and one Marine Tier 2 engine (GEN3). Chenega will replace one uncontrolled microturbine (GEN2). All replacement engines will be Marine Tier 3 engines. Chenega Bay uses approximately 30,250 gallons of diesel fuel to generate about 250,000 kWh annually. Resulting emission reductions in Chenega Bay is shown in the table below.

CHENEGA BAY

Annual Results (short tons)	NOx	PM2.5	HC	CO	CO2
Baseline Engine	1.34	0.043	0.01	0.03	329.9
Replacement Engine	1.23	0.025	0.04	0.25	262.5
Percent Reduced	8%	42%	-389%	-848%	20%

over a 10-year lifespan would have the following savings.

Annual Results (short tons)	NOx	PM2.5	HC	CO	CO2
Baseline Engine	13.38	0.43	0.08	0.26	3299.2
Replacement Engine	12.33	0.25	0.41	2.47	2625.3
Percent Reduced	8%	42%	-389%	-848%	20%

Note: the above emissions assume marine engines run 100% of the time.

3. **Outcomes**
   Expected outcomes will be submitted to the EPA project officer once sites have been confirmed and replacement engines selected. This will include emission calculations using the EPA web-based DEQ tool, and include estimated lifetime total project cost and cost effectiveness.

   - **Short-term outcomes** – Up to twenty-five existing prime power, non-certified and lower tier diesel engines will be taken out of service, and replaced with cleaner, more fuel efficient certified marine Tier 2 and Tier 3, and low PM emitting nonroad engines. Engine replacements will lead to immediate reductions in diesel fuel use and decreased emissions.

   - **Medium-term outcomes** – The new electronically controlled certified marine engines and low PM emitting nonroad engines will save diesel fuel along with associated reductions in exhaust emissions.

   - **Long-term outcomes** – AEA anticipates that diesel engines will continue to be used for many years in rural Alaska for prime power generation. The estimated useful life of a DERA engine in a prime power application is 60,000-hours, over a 10-year period. Replacing older technology engines with newer, cleaner and more efficient engines will provide fuel savings, emission reductions and health benefits for many years.

4. **Performance Measures**
   AEA is in the unique position of administering the Power Cost Equalization (PCE) program. 194 rural Alaskan utilities participate in the program providing monthly reporting of production and financial statistics. This allows AEA to monitor the performance and efficiency of engines replaced under the DERA program.

Project Partners

AEA will continue to consult with the Alaska Department of Environmental Conservation (ADEC) Division of Air Quality to ensure compliance with all applicable emissions regulations. AEA will continue to partner with the Denali Commission to support and expand the reach of the DERA program statewide.

Sustainability of State Program

In Alaska, the cost of fuel and energy are the highest in the nation. Through on-going programs, AEA works with rural communities to assist them in maintaining reliable power supplies while reducing costs.

AEA maintains a website that includes information on diesel reduction projects funded through DERA grants. AEA will keep this website updated with details on this new DERA funding within 60 days of the receipt of the grant. The posting will include the amount of the grant and a description of the technology being funded.

Quality Assurance and Quality Control

This project does not involve data generation or other measures requiring quality assurance and quality control plans or procedures.

Funding Restrictions

No EPA awarded funding will be used for:

- Costs of emission reductions that are mandated under federal law
- Matching funds for other Federal grants
- Expenses incurred before the project period
- Emissions testing and/or air monitoring activities
- Fueling Infrastructure
- Mandated Measures

****

BUDGET NARRATIVE

Project Budget

This AEA work plan incorporates Alaska's 2019 DERA waiver request, which was submitted for approval May 23, 2019. AEA appreciates that EPA understands the uniqueness of diesel generated prime power in remote areas of Alaska, and has approved the use of certified marine Tier 2 and Tier 3 and low PM emitting nonroad engines for replacement of non-certified and lower tier engines, reduced mandatory cost-share requirement for projects benefiting rural Alaska Tribal people, and increased administrative cost cap due to AEAs greater level of technical support. AEA is using the state DERA and other available funds to assist with engine repowers and genset replacements in rural communities in Alaska that are mostly tribal. Following is the proposed project budget:

Itemized Project Budget					
FFY 2019					
Budget Catagory	EPA Allocation	Mandatory Cost Share (RPSU)	VW Settlement (Voluntary Cost Share)	other contribution	**TOTAL**
1. Personnel	$ 27,725	$ 9,242	$ 18,483		**$ 55,450**
2. Fringe Benefits	$ 13,797	$ 4,600	$ 9,197		**$ 27,594**
3. Travel	$ 12,250	$ 4,084	$ 8,166		**$ 24,500**
4. Equipment					**$ -**
5. Supplies					**$ -**
6. Contractual					**$ -**
7. Other: Subaward Gra	$ 404,114	$ 139,828	$ 279,662		**$ 823,604**
8. Total Direct Charges	**$ 457,886**	**$ 157,754**	**$ 315,508**	**$ -**	**$ 931,148**
9. Indirect Charges*	$ 15,376				**$ 15,376**
10. Total (Indirect+ Dire	**$ 473,262**	**$ 157,754**	**$ 315,508**	**$ -**	**$ 946,524**
11. Program Income					
12. Other Leveraged Funds**					

Explanation of Budget Framework

1. **Personnel**
   AEA personnel costs cover the staff time needed to manage the grant, including technical assistance, preparing and submitting regular reports to EPA, preparing and submitting a final report to EPA at the conclusion of the project, providing project and grant oversight, and completing site visits to document project completion. Also included are an AEA project manager, rural electric utility worker and technician staff time to help the subaward grantees, if requested, with start-up and commissioning and connection of the engines/generators.

Note: Only the hourly billable wage totals for each staff position are shown in this table. Fringe benefits are excluded. Billable hourly wage rates include holiday and leave. Reference the next table, “2. Fringe Benefits” for the projects fringe benefits details and totals.

	Federal Fiscal Year 2019 Personnel			
Category	EPA	Voluntary Cost Share (VW)	Mandatory Cost Share (RPSU)	**Total**
Rural Program Manager @100 hours $79.32/hr wage, $36.21/hr fring	$ 3,966	$ 2,644	$ 1,322	**$ 7,932**
Project Manager 600 hrs, $64.46/hr wage, $31.61/hr fringe	$ 19,338	$ 12,892	$ 6,446	**$ 38,676**
Rural Electric Utility Worker 100 hrs, $53.08 hr wage, $27.77/hr fringe	$ 2,654	$ 1,769	$ 885	**$ 5,308**
Technician @ 100 hrs, $35.34hr wage, $22.29hr fringe	$ 1,767	$ 1,178	$ 589	**$ 3,534**
Total	**$ 27,725**	**$ 18,483**	**$ 9,242**	**$ 55,450**

2. Fringe Benefits

Benefits include: Health Insurance, Public Employees Retirement System, Supplemental Benefit System, Medicare, Workers Compensation, and Unemployment. The health insurance rate varies slightly by position type and averages 10%. Below is an estimation of the total project expenditures for fringe benefits for the positions and hours in the previous budget category "1. Personnel".

	Federal Fiscal Year 2019 Fringe Benefits			
Category	EPA	Voluntary Cost Share (VW)	Mandatory Cost Share (RPSU)	**Total**
Health Insurance Premium 10% (avg)	$ 6,380	$ 4,253	$ 2,127	**$ 12,760**
Public Employees Retirement System 22%	$ 4,390	$ 2,927	$ 1,463	**$ 8,780**
Supplemental Benefits System 6.13%	$ 881	$ 587	$ 294	**$ 1,762**
Medicare 1.45%	$ 200	$ 133	$ 67	**$ 400**
Workers Compensation 1.01%	$ 1,394	$ 929	$ 465	**$ 2,787**
Unemployment 0.40%	$ 552	$ 368	$ 184	**$ 1,104**
Total	**$ 13,797**	**$ 9,197**	**$ 4,600**	**$ 27,593**

3. Travel

This budget includes two trips for one person to each of the up to eight communities[2] to perform site visits and help the subaward grantees and their contractor with any technical assistance needed. Travel is budgeted based on experience within the region. With these presumptions, costs are broken down as follows. Round trip airfare $1000, ground transportation per visit $500, per diem $60/day, lodging $90/night. Presumed each trip is for two days with an overnight stay (two days of per diem) a total of sixteen total trips by AEA staff to the communities will be needed. The AEA staff that will travel to the sites include the technical Rural Electric Utility Worker (REUW) who may assist in commissioning the projects, the AEA Program Manager who may troubleshoot installation issues that could arise and the AEA Project Manager for final inspection to ensure all the requirements of the funding have been met. The REUW or Program Manager would also have the expertise to perform a final inspection.

[2] This is budgeted with flexibility depending on subawardees and allowing for a federal site monitor.

Federal Fiscal Year 2019 Travel				
Category	EPA	Voluntary Cost Share (VW)	Mandatory Cost Share	**Total**
Airfare for 1 person, 2 trips per village, 8 villages from Anchorage, 16 roundtrip tickets	$ 8,000	$ 5,333	$ 2,667	**$ 16,000**
Lodging for 1 person, 2 trips per village, 8 villages, 2 nights per trip, $90 per night, 16 nights	$ 1,350	$ 900	$ 450	**$ 2,700**
Per diem for 1 person1, 2 trips per village, 8 villages, 2 days per trips, $60 day, 30 days	$ 900	$ 600	$ 300	**$ 1,800**
Surface transportation, 2 trips per village, 4 villages, 8 rentals includes car/four wheeler, gas, parking, etc $500 per rental	$ 2,000	$ 1,333	$ 667	**$ 4,000**
Total	**$ 12,250**	**$ 8,166**	**$ 4,084**	**$ 24,500**

4. Equipment

There are no Equipment costs associated directly to AEA with this project. DERA funding will be provided to the subaward grantees via a grant agreement and therefore reported to EPA through the "Other" line. Please see line 8. "Other" section below for further breakout.

5. Supplies

There are no Supply costs associated directly to AEA with this project. DERA funding will be provided to the subaward grantees via a grant agreement and therefore reported to EPA through the "Other" line. Please see line 8. "Other" section below for further breakout.

6. Contractual

There are no Contractual costs associated directly to AEA with this project. DERA funding will be provided to the subaward grantees via a grant agreement and therefore reported to EPA through the "Other" line. Please see line 7. "Other" section below for further breakout.

7. Other

AEA will issue subaward grant agreements to up to five rural communities to cover the cost of labor, freight, contractual, material, engineering, and installation as part of the equipment costs associated with this grant[3]. These expenses will be reported to EPA through the "Other" line. Below is a breakout of the budget for these funds

AEA will subaward grant funds to each eligible rural community per the priority list of potential sites. Cost efficiencies occur when multiple engines are purchased for one community or one utility.

The Mandatory Cost Share funds will be in the form of cash (State capital) contributions.

Up to 80% of EPA grant funds and voluntary State match will go towards the engineering, freight, design modifications, purchase and installation of DERA qualified equipment.

[3] The budget estimates are based on number of engines to be repower/replaced, the location of the community and what is known about the power system prior to design.

	Federal Fiscal Year 2019 Subaward **SUMMARY**				
Category	EPA	Voluntary Match (VW)	Mandatory Cost Share (RPSU)	Other	**Total**
Labor	$ -	$ -	$ -		**$ -**
Freight	$ 17,500	$ 11,550	$ 5,950		**$ 35,000**
Contractual	$ 135,000	$ 89,100	$ 45,900		**$ 270,000**
Material and Engines	$ 259,302	$ 171,139	$ 88,163		**$ 518,604**
Combined Totals	**$ 411,802**	**$ 271,789**	**$ 140,013**	**$ -**	**$ 823,604**

	Federal Fiscal Year 2019 Subaward Community Anvik				
Category	EPA (50%)	Voluntary Match (VW) (33%)	Mandatory Cost Share (RPSU) (17%)	Other	**Total**
Labor	$ -	$ -	$ -		**$ -**
Freight (6%)	$ -	$ -	$ -		
Contractual (41%)	$ -	$ -	$ -		
Material and Engines (53%)	$ 79,302	$ 52,339	$ 26,963		**$ 158,604**
Combined Totals	**$ 79,302**	**$ 52,339**	**$ 26,963**	**$ -**	**$ 158,604**

	Federal Fiscal Year 2019 Subaward Community Arctic Village				
Category	EPA	Voluntary Match (VW)	Mandatory Cost Share (RPSU)	Other	**Total**
Labor	$ -	$ -	$ -		**$ -**
Freight	$ 10,000	$ 6,600	$ 3,400		**$ 20,000**
Contractual	$ 70,000	$ 46,200	$ 23,800		**$ 140,000**
Material and Engines	$ 90,000	$ 59,400	$ 30,600		**$ 180,000**
Combined Totals	**$ 170,000**	**$ 112,200**	**$ 57,800**	**$ -**	**$ 340,000**

	Federal Fiscal Year 2019 Subaward Community Chenega Bay				
Category	EPA	Voluntary Match (VW)	Mandatory Cost Share (RPSU)	Other	**Total**
Labor	$ -	$ -	$ -		**$ -**
Freight	$ 7,500	$ 4,950	$ 2,550		**$ 15,000**
Contractual	$ 65,000	$ 42,900	$ 22,100		**$ 130,000**
Material and Engines	$ 90,000	$ 59,400	$ 30,600		**$ 180,000**
Combined Totals	**$ 162,500**	**$ 107,250**	**$ 55,250**	**$ -**	**$ 325,000**

8. Direct Charges

Total direct charges for the project come to $931,148. This includes funds from EPA DERA, Volkswagen Settlement funds, and Mandatory Cost Share (State capital funds). Estimated $823,604 will be in subaward grants to rural Alaskan communities, and $107,544 will be spent on AEA staff project management, AEA technical assistance, and travel costs.

9. **Indirect Charges**

AEA currently utilizes the 10% de Minimis rate afforded to us under 2CFR 200.414(f) and further detailed in Appendix VII for indirect costs. AEA met internally and with the Denali Commission, our cognizant agency and determined that this method best fits AEA's needs instead of developing and proposing a federally negotiated indirect cost rate. AEA's indirect charge is estimates at $1536 for this award.

10. Total Program Funds

The State of Alaska has chosen to make the full voluntary match to the Federal FY 2019 Clean Diesel grant, totaling $315,508. The matching funds will be used towards eligible Clean Diesel project costs. In addition, the state is providing $157,754 of Mandatory Cost Share. AEA plans to use the Volkswagen settlement funds for the voluntary match ($315,508). State funds are available until the Volkswagen funds are received. The Mandatory Cost Share ($157,754) will come from AEA's Rural Power System Upgrade program, or local community match. The RPSU funds are State monies and allocated by the state legislature. The match funds will be available during the state fiscal years 2020 and 2021. At least 80% of EPA funds and State Match will go towards the repower and replacement equipment, and includes engineering, labor, material, engines and freight.

11. Program Income

The project being conducted under this grant will not generate income.

12. Other Leveraged Funds

This project is expected to leverage Volkswagen Tribal Settlement funds, Denali Commission capital funds, and local community match. As project specific fund sources are identified, project budgets will be developed.