

Volkswagen Environmental Mitigation Trust

APPENDIX D-4
Beneficiary Eligible Mitigation Action Certification

State of Alaska Project 006 – FY19 DERA Genset Replacement

Prepared by



ALASKA ENERGY AUTHORITY

BENEFICIARY ELIGIBLE MITIGATION ACTION CERTIFICATION

Beneficiary Alaska

Lead Agency Authorized to Act on Behalf of the Beneficiary Alaska Energy Authority

(Any authorized person with delegation of such authority to direct the Trustee delivered to the Trustee pursuant to a Delegation of Authority and Certificate of Incumbency)

Action Title:	FY19 DERA Genset Replacement
Beneficiary's Project ID:	34030
Funding Request No:	006
Request Type:	<input checked="" type="checkbox"/> Advance
Payment to be made to:	<input checked="" type="checkbox"/> Beneficiary
Funding Request & Direction:	<input checked="" type="checkbox"/> Attached to this Certification (Attachment A)

SUMMARY

Eligible Mitigation Action Action Type	<ul style="list-style-type: none"> · Appendix D-2 item (specify): _____ <input checked="" type="checkbox"/> Item 10 - DERA Option (5.2.12): <u>nonroad engine for power production</u>
Explanation of how funding request fits into Beneficiaries Mitigation Plan (5.2.1):	
<p>As described in the Alaska Beneficiary Mitigation Plan Amendment, Alaska intends to allocate approximately 15% of the State Trust for the replacement of diesel gensets used for prime power, to be distributed over a period of five federal fiscal years' worth of EPA State DERA funding. Project 006 represents the third federal fiscal year (FY19).</p>	
Detailed Description of Mitigation Action Item Including Community and Air Quality Benefits (5.2.2):	
<p>AEA will use EPA DERA, VW Trust, and other federal and state funds to replace up to five diesel gensets used to generate prime power in the communities of Arctic Village and Chenega Bay. The project will replace antiquated mechanically governed and lower tier prime power diesel genset engines with newer, more fuel efficient Tier 2 and Tier 3 marine engines. Tier 2 and Tier 3 marine engines are equipped with electronically controlled governors and high-pressure common rail fuel systems, which improve performance and reduce emissions. A complete, detailed work plan is attached.</p>	
Estimate of Anticipated NOx Reductions (5.2.3):	
<p>The estimated reduction in NOx emissions is 6.1 short tons annually for the estimated 10 year life of the engines. Once the replacement engines are chosen, the anticipated reduction in NOx will be calculated again and provided in the semi-annual report.</p>	
Identification of Governmental Entity Responsible for Reviewing and Auditing Expenditures of Eligible Mitigation Action Funds to Ensure Compliance with Applicable Law (5.2.7.1):	
<p>Alaska Energy Authority</p>	
Describe how the Beneficiary will make documentation publicly available (5.2.7.2).	
<p>AEA will follow the guidance set forth in Appendix D-3. AEA will make records related to the VW Trust publicly available on AEA's website (http://www.akenergyauthority.org/programs/vwsettlement). Any VW Trust</p>	

records not posted on AEA’s website will be made available to the public under the Alaska Public Records Act (AS 40.25) and the Act’s implementing regulations (2 AAC 96), unless one of the following applies: (1) the records are not “public records,” as defined in AS 40.25.220(3); (2) the records are protected under state or federal law or otherwise exempt from disclosure under AS 40.25.120(a); (3) the records are excluded from the Act under another state statute; or (4) the records are readily available for public inspection—e.g., available on the Internet or “during state business hours in an agency’s office or in a public library,” 2 AAC 96.100(b). (The Alaska Public Records Act does not require AEA “to compile or summarize” records or “to manipulate its data to create new records.” 2 AAC 96.210.)

Describe any cost share requirement to be placed on each NOx source proposed to be mitigated (5.2.8).

Each engine replacement will be funded by a portion of EPA State DERA (50%), State of Alaska capital funds (17%), and Volkswagen State Trust (33%). A detailed budget is included in Attachment D and the EPA DERA work plan (Attachment E).

Describe how the Beneficiary complied with subparagraph 4.2.8, related to notice to U.S. Government Agencies (5.2.9).

Pursuant to subparagraph 4.2.8, within 30 days of the filed Notice of Beneficiary Designation listing Alaska as a Beneficiary of the State Trust, the Alaska Energy Authority provided a copy of the State Trust agreement to all federal agencies that have custody, control, or management of land within or adjacent to Alaska (National Park Service, US Forest Service, US Fish and Wildlife Service, Bureau of Land Management) via certified mail.

If applicable, describe how the mitigation action will mitigate the impacts of NOx emissions on communities that have historically borne a disproportionate share of the adverse impacts of such emissions (5.2.10).

Research shows there is no safe level of exposure to diesel particulate matter. Power generation in rural Alaska depends on diesel engines, often operating in the center of a village, close to homes, workplaces, the school, and health clinic. These engines run 24 hours a day seven days a week. The proximity of power plants to residents in their everyday life poses a health risk. Rural Alaska communities are majority Alaska Native and have some of the lowest median incomes in the state and the highest cost of living. Replacing the engines in these facilities with ones that meet more stringent emission requirements will reduce emissions production and exposure of the residents to harmful pollutants. In addition, the improved engine efficiency will require less fuel, further reducing harmful emissions, and with the added benefit of lowering the cost of energy for the residents.

**ATTACHMENTS
(CHECK BOX IF ATTACHED)**

<input checked="" type="checkbox"/>	Attachment A	Funding Request and Direction
<input checked="" type="checkbox"/>	Attachment B	Eligible Mitigation Action Management Plan Including Detailed Budget and Implementation and Expenditures Timeline (5.2.4).
<input checked="" type="checkbox"/>	Attachment C	Detailed Plan for Reporting on Eligible Mitigation Action Implementation (5.2.11).
<input checked="" type="checkbox"/>	Attachment D	Detailed cost estimates from selected or potential vendors for each proposed expenditure exceeding \$25,000 (5.2.6). [Attach only if project involves vendor expenditures exceeding \$25,000.]
<input checked="" type="checkbox"/>	Attachment E	DERA Option (5.2.12). [Attach only if using DERA option.]
<input type="checkbox"/>	Attachment F	Attachment specifying amount of requested funding to be debited against each beneficiary’s allocation (5.2.13). [Attach only if this is a joint application involving multiple beneficiaries.]

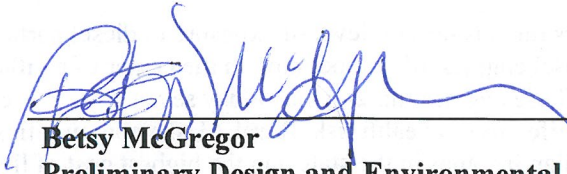
CERTIFICATIONS

By submitting this application, the Lead Agency makes the following certifications:

1. This application is submitted on behalf of Beneficiary Alaska, and the person executing this certification has authority to make this certification on behalf of the Lead Agency and Beneficiary, pursuant to the Certification for Beneficiary Status filed with the Court.
2. Beneficiary requests and directs that the Trustee make the payments described in this application and Attachment A to this Form.
3. This application contains all information and certifications required by Paragraph 5.2 of the Trust Agreement, and the Trustee may rely on this application, Attachment A, and related certifications in making disbursements of trust funds for the aforementioned Project ID.
4. Any vendors were or will be selected in accordance with a jurisdiction's public contracting law as applicable. (5.2.5)
5. Beneficiary will maintain and make publicly available all documentation submitted in support of this funding request and all records supporting all expenditures of eligible mitigation action funds subject to applicable laws governing the publication of confidential business information and personally identifiable information. (5.2.7.2)

DATED:

4/30/2020



Betsy McGregor
Preliminary Design and Environmental Manager

Alaska Energy Authority
[LEAD AGENCY]

for

Alaska
[BENEFICIARY]

ATTACHMENT B
Project Management Plan
Schedule and Milestones

Milestone	Date
AEA directs funding	Mar 2020
Project sponsor enters into contracts, purchase orders, etc. START	Dec 2019
Project sponsor enters into contracts, purchase orders, etc. COMPLETE	Jun 2020
Project installations START	Jul 2020
Project installations COMPLETE	Jan 2021
AEA reports project completion	Jan 2022

Please see the attached FY19 DERA workplan (Attachment E) for detailed project information.

Budget

Budget Category	EPA State DERA Allocation	Voluntary Match (VW State Trust)	Mandatory Match (State RPSU)	TOTAL
1. Personnel	\$ 27,725	\$ 18,483	\$ 9,242	\$ 55,450
2. Fringe Benefits	\$ 13,797	\$ 9,197	\$ 4,600	\$ 27,594
3. Travel	\$ 12,250	\$ 8,166	\$ 4,084	\$ 24,500
4. Supplies				\$ -
5. Equipment				\$ -
6. Contractual				\$ -
7. Program Income				\$ -
8. Other: Subaward Grants	\$ 404,114	\$ 279,662	\$ 139,828	\$ 823,604
9. Total Direct Charges	\$ 457,886	\$ 315,508	\$ 157,754	\$ 931,148
10. Indirect Charges	\$ 15,376			\$ 15,376
Total	\$ 473,262	\$ 315,508	\$ 157,754	\$ 946,524
Percent by funding source	50%	33%	17%	

Projected Trust Allocations

	2019			2020			2021
	Project 001	Project 002	Project 003	Project 004	Project 005	Project 006	
1. Anticipated annual project funding request to be paid through the Trust	\$497,449	\$321,711	\$2,169,317	\$2,066,925	\$1,009,498	\$315,508	
2. Anticipated annual cost share	\$1,076,051	\$936,063	\$57,600	\$112,992	\$15,000	\$631,016	
3. Anticipated total project funding by year (line 1 plus line 2)	\$1,573,500	\$1,257,774	\$2,226,917	\$2,179,917	\$1,024,498	\$946,524	
4. Cumulative Trustee payments made to date against cumulative approved beneficiary allocation	\$0	\$497,449	\$819,160	\$2,988,477	\$5,055,402	\$6,064,900	
5. Current beneficiary project funding to be paid through the Trust (line 1)	\$497,449	\$321,711	\$2,169,317	\$2,066,925	\$1,009,498	\$315,508	
6. Total funding allocated to beneficiary, inclusive of current action by year (line 4 plus line 5)	\$497,449	\$819,160	\$2,988,477	\$5,055,402	\$6,064,900	\$6,380,408	
7. Beneficiary share of estimated funds remaining in Trust	\$8,125,000	\$8,125,000	\$8,125,000	\$8,125,000	\$8,125,000	\$8,125,000	
8. Net beneficiary funds remaining in Trust, net cumulative beneficiary funding actions (line 7 minus line 6)	\$7,627,551	\$7,305,840	\$5,136,523	\$3,069,598	\$2,060,100	\$1,744,592	

ATTACHMENT C

Detailed Plan for Reporting on EMA Implementation

The Alaska Energy Authority (AEA) will provide detailed reporting on the FY19 DERA genset replacement project (Project 006) on its public VW website and will fulfill its reporting obligations to Wilmington Trust.

AEA's VW website (<http://www.akenergyauthority.org/programs/vwsettlement>) was created specifically to provide information related to the Trust, settlement documents, and Alaska's plans for disbursement, funding opportunities, and implementation information. In order to provide transparency and accountability, AEA will post timely updates on information, including but not limited to:

- General information on the Partial Consent Decrees and State Trust Agreement
- Alaska Beneficiary Mitigation Plan
- Request for Applications (RFAs) as funding opportunities arise
- Public records supporting funding requests AEA submits to the Trustee and all public records supporting expenditures of the Trust Fund, subject to confidentiality laws, until the Termination Dates of the State Environmental Mitigation Trust Agreement.
- Contact information

AEA will periodically evaluate the implementation of the Beneficiary Mitigation Plan and EMAs to determine if revisions to the plan are necessary to achieve the goals outlined in the plan. Any changes to the plan will be posted on AEA's VW website for at least 30 days prior to implementation.

In addition, the State will also comply with the reporting requirements listed in the Environmental Mitigation Trust Agreement for State Beneficiaries in subparagraph 5.3:

For each Eligible Mitigation Action, no later than six months after receiving its first disbursement of Trust Assets, and thereafter no later than January 30 (for the preceding six-month period of July 1 to December 31) and July 30 (for the preceding six-month period of January 1 to June 30) of each year, each Beneficiary shall submit to the Trustee a semiannual report describing the progress implementing each Eligible Mitigation Action during the six-month period leading up to the reporting date (including a summary of all costs expended on the Eligible Mitigation Action through the reporting date). Such reports shall include a complete description of the status (including actual or projected termination date), development, implementation, and any modification of each approved Eligible Mitigation Action. ... These reports shall be signed by an official with the authority to submit the report for the Beneficiary and must contain an attestation that the information is true and correct and that the submission is made under penalty of perjury. To the extent a Beneficiary avails itself of the DERA Option described in Appendix D-2, that Beneficiary may submit its DERA Quarterly Programmatic Reports in satisfaction of its obligations under this Paragraph as to those Eligible Mitigation Actions funded through the DERA Option. The Trustee shall post each semiannual report on the State Trust's public-facing website upon receipt.

ATTACHMENT D
Detailed cost estimate

Budget Category	EPA State DERA Allocation	Voluntary Match (VW State Trust)	Mandatory Match (State RPSU)	TOTAL
1. Personnel	\$ 27,725	\$ 18,483	\$ 9,242	\$ 55,450
2. Fringe Benefits	\$ 13,797	\$ 9,197	\$ 4,600	\$ 27,594
3. Travel	\$ 12,250	\$ 8,166	\$ 4,084	\$ 24,500
4. Supplies				\$ -
5. Equipment				\$ -
6. Contractual				\$ -
7. Program Income				\$ -
8. Other: Subaward Grants	\$ 404,114	\$ 279,662	\$ 139,828	\$ 823,604
9. Total Direct Charges	\$ 457,886	\$ 315,508	\$ 157,754	\$ 931,148
10. Indirect Charges	\$ 15,376			\$ 15,376
Total	\$ 473,262	\$ 315,508	\$ 157,754	\$ 946,524
Percent by funding source	50%	33%	17%	

Subaward Grant Summary

Budget Category	EPA State DERA Allocation	Voluntary Match (VW State Trust)	Mandatory Match (State RPSU)	TOTAL
Subaward Summary for Anvik, Alaska (PJ 350374)				
Freight				\$ -
Contractual				\$ -
Material and Engines	\$ 103,093	\$ -	\$ 55,511	\$ 158,604
Subaward Total	\$ 103,093	\$ -	\$ 55,511	\$ 158,604
Subaward Summary for Arctic Village, Alaska (PJ 350375)				
Freight	\$ 9,379	\$ 8,390	\$ 2,631	\$ 20,400
Contractual	\$ 64,093	\$ 57,331	\$ 17,976	\$ 139,400
Material and Engines	\$ 82,851	\$ 74,111	\$ 23,238	\$ 180,200
Subaward Total	\$ 156,323	\$ 139,832	\$ 43,845	\$ 340,000
Subaward Summary for Chenega Bay, Alaska (PJ 350376)				
Freight	\$ 8,682	\$ 8,390	\$ 2,428	\$ 19,500
Contractual	\$ 59,326	\$ 57,330	\$ 16,594	\$ 133,250
Material and Engines	\$ 76,690	\$ 74,110	\$ 21,450	\$ 172,250
Subaward Total	\$ 144,698	\$ 139,830	\$ 40,472	\$ 325,000

ATTACHMENT E
FY19 DERA Workplan

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 available¹.

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.

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 disproportionately 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 AEA's 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 Category	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 fringe	\$ 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 communities² 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 person, 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 grant³. 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.