NANA

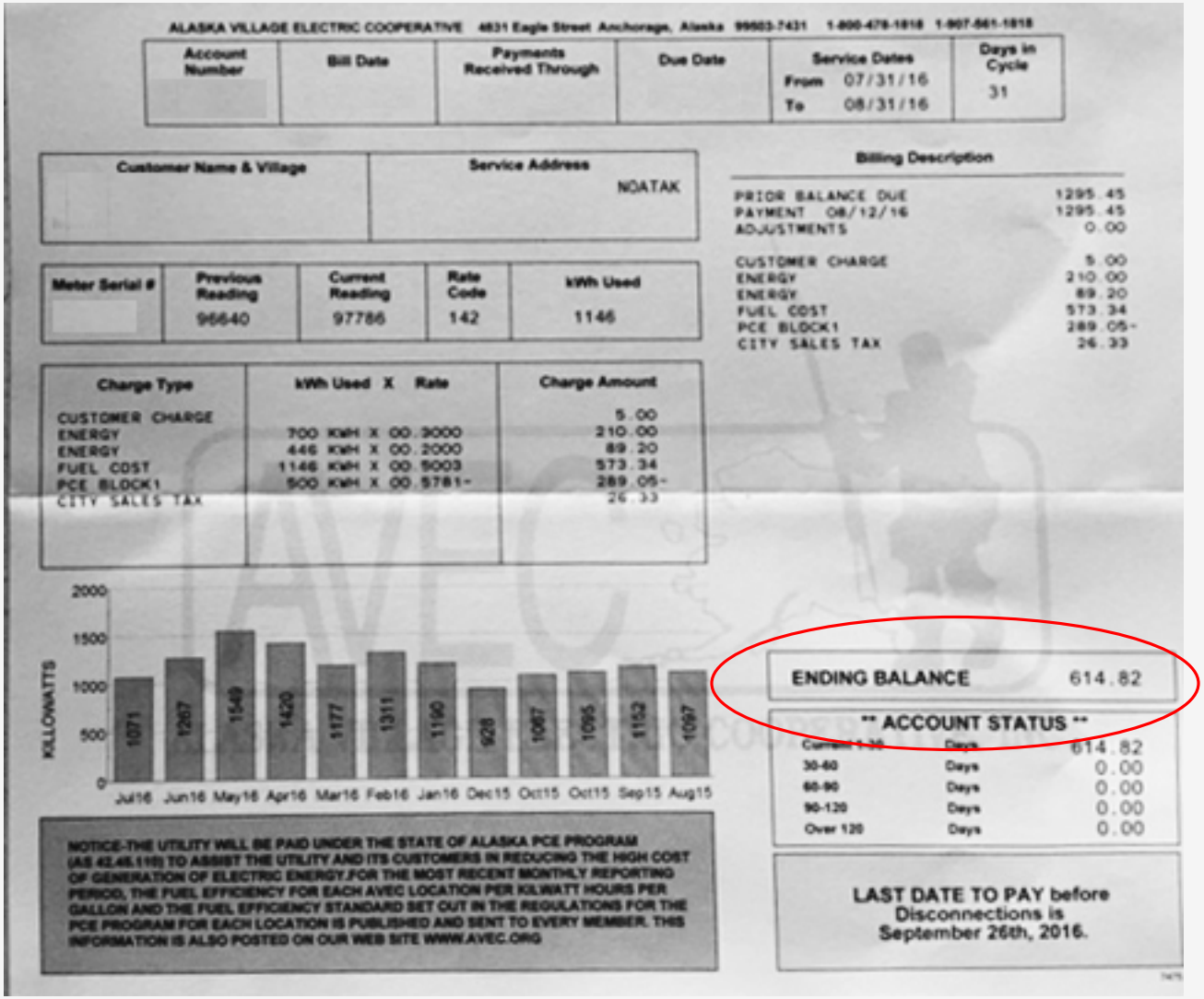
DOE Annual Program Review

NOVEMBER 14-17, 2016 • Denver, Colorado


Arctic Slope
Red Dog Mine
Kivalina
Noatak
Noatak River
Doyon
Kiana
Ambler
Kobuk River
Kotzebue
Noorvik
Kobuk
Shungnak
Selawik
Selawik River
Deering
Buckland
Buckland River
NANA Region
Bering Straits Native Corporation
Arctic Slope
NANA
Doyon
Bering Straits
Calista
CIRI
AHTNA
BBNC
Chugach
Sealaska
Aleut
Koniag

A Remote Region

- No roads and few electrical interties to connect communities
- 61% more expensive than Anchorage
- High cost goods and fuel



ALASKA VILLAGE ELECTRIC COOPERATIVE 4831 Eagle Street Anchorage, Alaska 99503-7431 1-800-478-1818 1-907-561-1818

Account Number	Bill Date	Payments Received Through	Due Date	Service Dates	Days in Cycle
				From 07/31/16 To 08/31/16	31

Customer Name & Village	Service Address
	NOATAK

Meter Serial #	Previous Reading	Current Reading	Rate Code	kWh Used
	96640	97786	142	1146

Charge Type	kWh Used X Rate	Charge Amount
CUSTOMER CHARGE		5.00
ENERGY	700 KWH X 00.3000	210.00
ENERGY	446 KWH X 00.2000	89.20
FUEL COST	1146 KWH X 00.5003	573.34
PCE BLOCK1	500 KWH X 00.5781-	289.05-
CITY SALES TAX		26.33

Billing Description

PRIOR BALANCE DUE	1295.45
PAYMENT 08/12/16	1295.45
ADJUSTMENTS	0.00
CUSTOMER CHARGE	5.00
ENERGY	210.00
ENERGY	89.20
FUEL COST	573.34
PCE BLOCK1	289.05-
CITY SALES TAX	26.33

ENDING BALANCE	614.82

**** ACCOUNT STATUS ****

Current 1-30	Days	614.82
30-60	Days	0.00
60-90	Days	0.00
90-120	Days	0.00
Over 120	Days	0.00

NOTICE-THE UTILITY WILL BE PAID UNDER THE STATE OF ALASKA PCE PROGRAM (AS 42.45.110) TO ASSIST THE UTILITY AND ITS CUSTOMERS IN REDUCING THE HIGH COST OF GENERATION OF ELECTRIC ENERGY.FOR THE MOST RECENT MONTHLY REPORTING PERIOD, THE FUEL EFFICIENCY FOR EACH AVEC LOCATION PER KILWATT HOURS PER GALLON AND THE FUEL EFFICIENCY STANDARD SET OUT IN THE REGULATIONS FOR THE PCE PROGRAM FOR EACH LOCATION IS PUBLISHED AND SENT TO EVERY MEMBER. THIS INFORMATION IS ALSO POSTED ON OUR WEB SITE WWW.AVEC.ORG

LAST DATE TO PAY before Disconnections is September 26th, 2016.

NANA

Inter-Tribal Technical Assistance Energy Providers Network

Energy – Recap of what was accomplished at NANA Regional Corporation

Strategic Energy Plan (SEP)

1. The goal of the NANA SEP is improved energy security through strategic energy planning and improved understanding of available energy options
2. SEP branded as the NWALT Energy Plan to show collaboration and partnerships within the region
3. Energy Steering Committee formed to improve communication on energy issues

Energy – Recap of what was accomplished at NANA Regional Corporation

Energy Option Analysis

Purpose – identify and develop energy resources for each community

1. Six feasible options – wind, hydro, biomass, solar, fossil fuels
   - Low hanging fruit – energy efficiency and conservation
2. Not every village has a renewable energy source nearby
3. Shallow rivers impacting fuel delivery to the Upper Kobuk villages and Noatak

Energy – Recap of what was accomplished at NANA Regional Corporation

NANA/Rural Cap Energy Wise Program

1. Energy Wise Program – merges household-based energy efficiency measures with a community-based outreach and education to reduce energy costs
2. NANA contributed $1.9M to create jobs and perform moderate weatherization upgrades to the homes

Energy – Recap of what was accomplished at NANA Regional Corporation

Energy Summit

The purpose of the Summit –

- For residents of the NWAB communities to become knowledgeable of the current energy crisis and what it means to their communities
- Share and discuss ideas, produce goals and recommendations
- Work collectively to find short and long term energy solutions

Energy – Recap of what was accomplished at NANA Regional Corporation

Energy Survey

1. Community survey questionnaires were developed and completed for all NANA Communities
2. These questionnaires were developed specifically for each community
3. Surveys completed indicated support for renewable energy projects

Energy – What we've learned

Project Timelines

Description	Range in years	Examples
Current	0	Current deployment mix
Immediate	0-1	Conservation, Energy Efficiency, weatherization, biomass, coordination of feasibility studies, assure access to PCE and other energy assistance programs.
Short	1-3	
Mid-term	2-10	Wind, infrastructure development, biomass, and other alternative development.
Long-Term	5-15	Natural Gas, geothermal, large scale infrastructure, development, disruptive technologies
Stretch Goals	15+	Advanced storage technologies

Energy – What we've learned

Data collection

1. State and Federal funding is getting more competitive

2. Data collection is crucial, but can't study to death

    A. 1 year of wind data
    B. 5 years of stream flow
    C. Project performance data for investment payback
    D. TED & ECO meters for Conservation – with NWAB

3. Energy audits, energy assessments, market basket study, etc.

Energy – What we've learned

NANA's Role in energy for our region

1. Project development, including stakeholder coordination
2. Grant writer/fund seeker – innovative approaches
3. Advocating for change in State and Federal policies
4. Infrastructure planner
5. Communicating NWALT energy priorities to stakeholders
6. Update Energy plan
7. Research emerging technologies

Completed Projects

Project	Date	Initial effort from NANA	NANA's $ Contrib.	$ Awarded	Project Man/ Proponent	Status	Next steps/milestones	$ Needed	Comm date	B/C ratio
NANA SEP	10/8/2007	Applied for grant funding	$95,922	$ 100,000.00	NANA	On-going	Strategic Energy Plan Energy Option Analysis Energy Summit Energy Steering Committee formed Energy Survey		Completed	
NANA GAP	10/8/2007	Applied for grant funding	$46,840	$ 149,988.00	NANA	Completed	Geothermal Assessment Report Field trips completed		Completed	
NANA WRAP	10/8/2007	Applied for grant funding	$44,323	$ 149,990.00	NANA	On-going	Wind resource assessment completed Secured funding for turbine installation 2014 turbine installation for Deering and Buckland		2014	
Energy Wise	2011	Partnered with Rural Cap	$1.9M	N/A	Rural Cap	Completed	10.5 villages completed Jobs created Energy education provided Moderate weatherization improvements		2011	
Biomass		Applied for grant funding	Grant app cost	$58,000.00	NANA	Completed	Kobuk River Valley Woody Biomass Feasibility Study		2014	

Current Projects

Project	Date	Initial effort from NANA	NANA's $ Contrib.	$ Awarded	Project Man/Proponent	Status	Next steps/milestones	$ Needed	Comm. date	B/C ratio
Kobuk Biomass	Aug. 2011	Letter of support Land staff support	In-kind staff time	401,873	ANTHC NANA	Completed	Commission wood burning boiler Approved Harvesting plan Create business model	N/A	Mar-15 Project complete	1.17
Cosmos Hills Hydro	Oct. 2008	Received grant from AEA NANA hydrology costs since 2009	500,000	150,000	NANA AVEC	Feasibility	Advance concept design to 65% and start permitting Preparing DOI grant application	500 k 30 M	Jun-15	1.30 - 1.8
Ambler Biomass	Jan. 2015	Letter of support Staff support	In-kind staff time		ANTHC NANA		AEA recommended funding to the legis-lature.	$379,583	Application submitted	
Wind Turbine Installation	Sept. 2007	Received grant from DOE		194,313 10 M	NWAB NWAB	Operating	Deering Wind Turbine Installation Buckland Wind Turbine Installation Noorvik - Hotham Peak concept		Dec. 31, 2015 May-15	0.97
Wind Resource Assessment	Aug. 2013	Shungnak met tower Kivalina met tower Ambler met tower	$20,000		NANA	Collecting data	Complete data collection - Erect Met tower at K-Hill Relocate Shungnak met tower to Ambler		Apr-15 Apr-15 Oct-15	
Kiana HS Energy Audit	June, 2013	Paid for energy assessment audit	$20,000	N/A	NANA AHFC WHPacific	Data analysis	Complete report by Nov. 30, 2013 Seek funding to perform Energy Efficiency Measures on NANA Region Schools Loans vs. Grant	$15,300	Report done by Nov. 30 2014 Completed	N/A
Shungnak Wind Project	Jan-15	Purchased met tower Paid for grant app prep	$5,000		NANA WHPacific		AEA recommended funding to the legislature	$95,00		
Noatak Fuel Haul Project	2011	Applied for grant funding	Grant app cost	$425,000	NANA/NWAB	On-going	Partnered with Cruz Construction for operator training and spills plan dev. Fuel route selected Fuel equipment delivered to Portsite		2015	
Solar Energy Project	2016	Applied for grant funding	Grant app cost	$992,000	NANA	On-going	Receive award, negotiate scope and budget	$592,000	Jul-17	

Inter-Tribal TA Project Objectives

- Two Energy Steering Committee (ESC) meetings per year (instead of one currently)
- A day of technical training/workforce development added to each ESC meeting
- Energy and business planning for individual tribes and the overall region
- Technology reviews for unique arctic applications
- Promote economies of scale in energy & power projects for the NANA Region
- Conduct topical research, including the development of a Regional Energy Authority

Energy – What we've learned

Critical Path / needs

1. Interties between villages

2. Roads

3. Power Cost Equalization Reform – Current formula decreases state subsidy if diesel consumption decreases

    - This current model discourages energy efficiency & renewable energy development

Potential Intertie Routes

- Ambler and Shungnak/Kobuk
- Noorvik-Kiana-Selawik
- Kivalina and Red Dog Port site
- Existing intertie: Shungnak – Kobuk
- Major Challenge: Large Capital Funding

Energy Steering Committee Goals & Outcomes

- Public Private Partnerships
- Village Economic Development
- Fostering Sustainable Behavior
- Roads & Inter-ties
- Powerhouse Upgrades to Integrate RE
- Workforce Development & Skills Training

NANA