

# Power Cost Equalization Then and Now

Presentation to House Finance Committee

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# Alaska's Early Electrification

1890 Population – 32,000

1900 Population – 64,000

- ▶ Juneau (AEL&P established in 1893) and Sitka had hydro late 1890s
- ▶ Nome – Gold Rush
- ▶ Cordova – Copper/Kennecott
- ▶ Katalla – Oil fields
- ▶ Anchorage Tent City – 900kW in 1916, Eklutna 1929

FDR established the REA in 1935

- ▶ Palmer led the way – MEA was formed in 1940
- ▶ Kodiak Electric organized in 1942
- ▶ Golden Valley began in 1946
- ▶ Chugach Electric incorporated in 1948
- ▶ Naknek Electric started up in 1960
- ▶ Most rural hub communities were energized in the 60s

# Village Electrification

Villages were small, scattered, hard to reach

- Some got seasonal power from schools or stores
- Homes self-powered with small generators, wind, batteries
- There was no Alaska Energy Authority – nor RCA
  - Alaska Power Authority formed in 1972
  - APUC established 1970
- Virtually no village central station service before 1960

# Seeking The Way Forward

Gov. Hickel appointed a Task Force in 1965

- Willie Hensley, Diane Carpenter, Jimmy Hoffman, Morris Thompson and David Peterson
- They identified the Cooperative model as the best fit
- AVEC was incorporated in 1967
- REA (now RUS) was highly skeptical
  - Non-contiguous service areas
  - Distant HQ was an issue
  - Operating Agreements with local Municipalities
    - Hundreds of villages established 2<sup>nd</sup> and 3<sup>rd</sup> class cities
  - 80% of residents had to sign up for service
  - BIA (schools) contracted as anchor tenants

# Before TAPS

Almost no transmission in Alaska

- Chugach electric owned a line (built in 1968) from the Beluga gas field to Anchorage
- Subsidized natural gas heated and lit South Central
- Fairbanks relied on local heavy oil and coal
- Diesel fuel was the primary energy source elsewhere

Very little hydropower

- Eklutna (1929) – 30 MW, serving ML&P, MEA, CEA
- Cooper Lake (1955) – 20 MW, serving CEA
- Snettisham – 52 MW (now 78MW), serving Juneau
- ~20 MW of small projects scattered throughout SE Alaska

# Then Came Oil - 1977

The State began to spend its newfound wealth

- A transmission line to Fairbanks was started
- The Susitna mega-project design was started
- The Bradley Lake project was started
- Kodiak, Valdez, Ketchikan, Wrangell and Petersburg began work on 4 hydro-projects
- Studies were commissioned to identify projects to reduce the cost of electricity throughout Alaska

# Evolution of PCE

- 1980 - Power Production Cost Assistance Program
- 1981- Power Cost Assistance Program, designed to self-extinguish in five years
- 1984 – Power Cost Equalization established
  - Utilities that used diesel for 75% of power in 1983
  - Cost of power equalized to the average of Anchorage, Fairbanks and Juneau – 8.5 cents/kwh
  - Costs above 52.5 cents were not covered
  - All users were eligible for the first 750 kWh used
  - Community Facilities get PCE on all kWh used

# AVEC Today

- Hooper Bay, Nulato, Old Harbor electrified in 1968
- 58 villages (recently added Yakutat, Bethel)
  - 20 with renewables
- 49 power plants
- 32,000 population –
  - 38% of PCE population served
  - 41% of total PCE disbursed
  - Shageluk (smallest) 77
  - Bethel (largest) 6,224
  - Anchorage 294,356
- 92% Alaska Native



# Why are we subsidizing Rural Alaska?

- This was the compromise reached in 1984, when the Legislature recognized there was no other answer to bring affordable power to rural Alaska
- In 1985, PCE utilities paid \$1.17/gallon for diesel – 25x the cost of Railbelt gas at \$0.35/mcf
- Billions of dollars were spent or committed to reduce power costs for urban Alaska and communities fortunate to have hydropower
- Railbelt communities have continued to benefit from heavily subsidized natural gas since the 60s. Taxes are still capped at \$0.177 per mcf

# The PCE Endowment Fund

- Established in FY2000 via HB446
  - **PCE was underfunded for 15 years (FY92 – FY07)**
- Invested to achieve 7% (now 5%) return
- \$100M from CBR in FY01
- \$84M from sale of 4 Dam Pool hydroprojects in FY02
- \$182.7M in FY07
- \$400M in FY12
- Value as of 3/31/21 \$1.13B
  - \$74.1M earnings in FY19
  - \$48.3M earnings in FY20
  - \$54.6M withdrawn in FY21 (PCE and Municipal Assistance)
- After PCE, returns fund Municipal Assistance, Renewable Energy Grants, RPSU and BFU projects

# How PCE is Funded

- The Governor's budget for AEA includes PCE
  - The funding source is identified
  - Until 2014, it was entirely or mostly General Funds
- Legislature decides on the final amount and source
- If appropriation is less than needs, PCE rates are prorated
  - Between 1992 and 2007, PCE was prorated 15 times
- The Endowment Fund was intended to replace GF
  - Because of the three-year averaging, GF supplemented EF earnings until 2014
  - There have been no draws on GF since FY14
- PCE has cost \$424M since FY08; \$349M from the EF

# The Mechanics of PCE

- 75% of power in 1983 must have been from diesel
- Utility submits detailed cost and operational data to RCA
- RCA determines eligible costs and computes PCE
- Utility bills customers per their tariff rates
  - PCE credit is applied to the bill
  - Consumer is responsible to pay bill after PCE credit
- Utility bills State (AEA) for all PCE credited
  - Utility submits detailed billing records
- Utility files required annual report with RCA
- Fuel cost updates are submitted as cost changes
- RCA reviews non-fuel costs every 3 – 5 years

# Between 1985 and 2020

- The floor is up 143% to 20.63 cents
- The ceiling was raised from 52.5 cents to \$1.00
- Eligible electricity has been reduced 1/3 to 500 kwh
- 6,000+ commercial customers no longer get PCE
- Fuel cost up 127% but efficiency is also up 32%
  - Fuel cost per kWh went from \$.1033 - \$.1901
- Non-fuel costs per kWh are up 37% (less than 1% p.a.)
  - \$.141 in '85 to \$.193 in '20
- PCE cost in FY86 \$17.8 million
- PCE cost in FY20 \$29.0 million

# Program Changes since FY86

	FY86	FY20
Alaskans served (thousands)	62	82
Total Sales in GWh	225	456
PCE Eligible Sales	108	131
Percentage Eligible	48%	29%
Fuel Cost per Gallon	\$1.17	\$3.07
Fuel Consumed – Million Gallons	21	28
Fuel Cost – Millions	\$23	\$87
Non-Fuel Cost – Millions	\$32	\$88
Total Utility Cost – Millions	\$55	\$174
Total PCE – Millions	\$17.8	\$29.0
<b>Percent of Total Costs</b>	<b>32.4%</b>	<b>16.6%</b>

# Does Most of PCE go to “Overheads?”

## FY20 Program Statistics

Fuel Costs	\$86,638,172
Non-Fuel Costs	<u>\$87,853,342</u>
Total Electricity Cost	\$174,491,514
Total PCE Disbursed	\$29,006,012
Percent of Fuel Costs	33.5%
Percent of Total Costs	16.6%
Electricity receiving PCE	29.0%

# Thank You!

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