The background is a light blue gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

BENEFICIAL ELECTRIFICATION FOR IPEC COMMUNITIES – A STUDY PREPARED BY THE ALASKA CENTER FOR ENERGY AND POWER (ACEP)

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INSIDE PASSAGE ELECTRIC COOPERATIVE

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CAN IPEC AND ITS MEMBER-CONSUMERS BENEFIT FROM HEAT PUMP DEPLOYMENT IN ITS COMMUNITIES?

- FOR THE LAST TWO DECADES, IPEC HAS FOCUSED ON REDUCING COSTS AND RATES BY REDUCING COSTS OF GENERATION. WE'VE DONE THIS BY DEPLOYING GRANT-FUNDED HYDRO PROJECTS TO DISPLACE COSTS OF DIESEL-GENERATION. IPEC IS CURRENTLY ABOUT 81% DIESEL-DEPENDENT (BEFORE THE KAKE HYDRO PROJECT COMES ONLINE NEXT MONTH)
- THIS ENTAILED, AT FIRST, ATTEMPTING TO BUILD INTERTIES BETWEEN HYDRO COMMUNITIES AND IPEC'S COMMUNITIES (E.G., JUNEAU TO HOONAH, AND KAKE TO PETERSBURG)
- THESE ATTEMPTS PROVED UNECONOMIC DUE TO HIGH COSTS OF INTERTIES, THE TWO-COUNTY RULE, AND OTHER REGULATORY AND COST-PROHIBITIVE BARRIERS
- THUS, IPEC SHIFTED ITS FOCUS TO BUILDING SMALL RUN-OF-RIVER HYDRO PROJECTS CLOSE TO ITS SERVICE AREAS/LOAD CENTERS

IPEC HAS SUCCEEDED IN REDUCING AND STABILIZING RATES BY PURCHASING AND DEVELOPING SMALL HYDRO PROJECTS CLOSE TO ITS COMMUNITIES

- THE “10-MILE HAINES HIGHWAY” PROJECT WAS PURCHASED (WITH GRANT FUNDS) FROM THE DEVELOPER, AND PROVIDES 60% OF POWER REQUIREMENTS FOR CHILKAT VALLEY AND KLUKWAN
- IPEC BUILT THE GARTINA FALLS HYDRO PROJECT NEAR HOONAH, WHICH PROVIDES ABOUT 30% OF HOONAH’S ELECTRIC REQUIREMENTS
- IPEC IS IN THE PROCESS OF COMPLETING THE GUNNUK CREEK HYDRO PROJECT IN KAKE, WHICH IS ESTIMATED TO PROVIDE 55% OR MORE OF KAKE’S ELECTRIC REQUIREMENTS
- IPEC HAS THREE OTHER HYDRO PROJECTS ON ITS RADAR: THAYER CREEK HYDRO FOR ANGOON, WATER SUPPLY CREEK FOR HOONAH, AND POTENTIAL FOR JENNY CREEK NEAR KAKE.
- ALL OF THESE PROJECTS MUST BE FINANCED PRIMARILY WITH GRANT FUNDS. GRANTS ARE MUCH HARDER TO OBTAIN TODAY, DUE TO STATE OF ALASKA FISCAL UNCERTAINTY, AND LESS FUNDING AVAILABLE/TIGHT RESTRICTIONS ON THE FEDERAL SIDE
- IT MUST BE NOTED THAT FOR RESIDENTIAL AND COMMUNITY FACILITY CUSTOMERS RECEIVING POWER COST EQUALIZATION (PCE), THOSE RATE SAVINGS/ BENEFITS GO TO THE STATE THROUGH REDUCED PCE SUBSIDIES TO IPEC’S MEMBERS. HOWEVER, THE BUSINESSES, CHURCHES, AND SCHOOLS RECEIVE RATE BENEFITS FROM MORE HYDRO IN THE MIX. THESE CONSUMERS ARE OFTEN THE ECONOMIC DRIVERS OF THE COMMUNITIES.

THE QUESTION NOW IS, CAN IPEC OFFER A RATE STRUCTURE FOR HEAT PUMPS IN ITS COMMUNITIES THAT WILL MAKE IPEC AND ITS MEMBER-CONSUMERS BETTER OFF?

- IPEC HAS AN OPPORTUNITY TO INCREASE ITS SALES, THE DEMAND-SIDE OF THE COST EQUATION, BY OFFERING A LOWER RATE FOR THE 501ST KWH AND ABOVE FOR THOSE WHO INSTALL HEAT PUMPS, WHICH USE ELECTRICITY TO OPERATE
- AT LAST, IPEC CAN POTENTIALLY WORK ON INCREASING ELECTRIC KWH SALES, THEREBY FOCUSING ON THE ECONOMIES OF SCALE SIDE OF REDUCING COSTS TO MEMBER-CONSUMERS. THIS IS DUE TO NEW TECHNOLOGY – HEAT PUMPS TO DISPLACE HEATING COSTS FROM FOSSIL-FUELS
- THE STUDY, PREPARED BY THE ALASKA CENTER FOR ENERGY & POWER (ACEP), SUGGESTS WE CAN PROVIDE NET BENEFITS TO IPEC AND ITS MEMBER-CONSUMERS
- THE STUDY IS PRELIMINARY AND HAS NOT BEEN TESTED. HOWEVER, IT LOOKS PROMISING

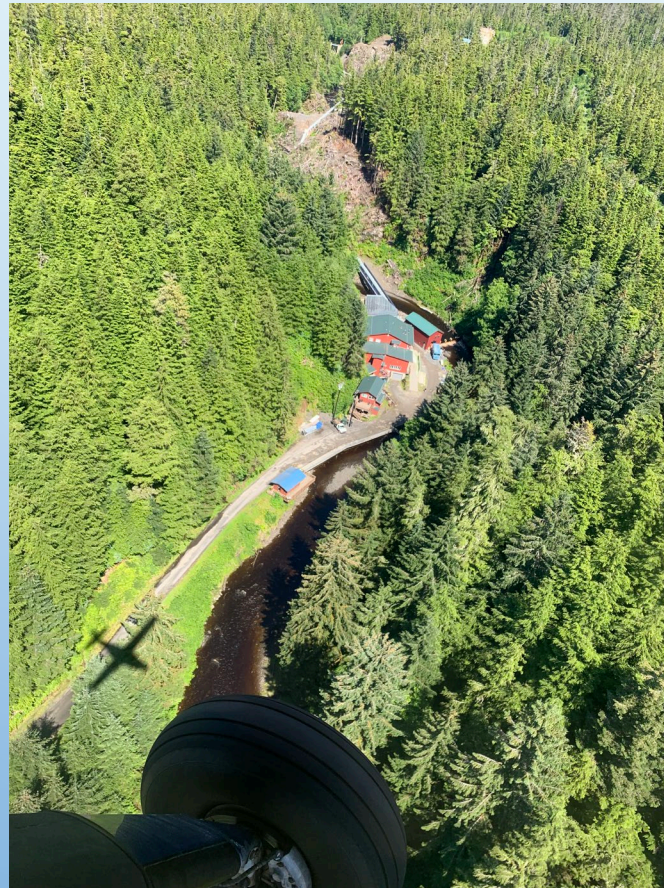
IPEC FACTS LIMIT WHAT WE CAN DO TO INCREASE SALES TO MEMBER-CONSUMERS

- IPEC IS A NON-PROFIT CONSUMER-OWNED AND GOVERNED UTILITY SERVING A TOTAL OF ABOUT 1,350 MEMBER-CONSUMERS FROM FOUR SEPARATE MICROGRIDS: ANGOON, HOONAH, KAKE, AND KLUKWAN/CHILKAT VALLEY. IPEC'S COMMUNITIES HAVE SEEN LITTLE TO NEGATIVE GROWTH OVER THE PAST TWO DECADES, WITH DECLINING SALES DUE TO NEW MORE EFFICIENT TECHNOLOGIES (E.G. LED LIGHTING)
- IPEC HAS ONLY 11 FULL-TIME EMPLOYEES TO SERVE ALL FOUR MICROGRIDS (WITH SEVERAL PART-TIME POSITIONS TO ASSIST AT POWER PLANTS). WE TRY OUR BEST TO LIMIT OVERHEAD COSTS OF SERVICE
- IN SPITE OF THE EFFORTS TO MAINTAIN LOW FIXED COSTS, OUR PER KWH FIXED COSTS ARE ABOUT\$.40/KWH. IF WE SELL MORE POWER, OUR FIXED COSTS PER KWH GO DOWN, THEREBY REDUCING RATES TO ALL OUR MEMBER-CONSUMERS.
- THIS IN CONJUNCTION WITH OUR EFFORTS TO BUILD NEW HYDROS WITH GRANT FUNDS COULD BENEFIT BOTH IPEC AND ITS MEMBER-CONSUMERS THROUGH REDUCED HEATING AND ELECTRIC COSTS

WHERE DO WE “GROW” FROM HERE?

- IPEC BECAME DEREGULATED BY A VOTE OF ITS MEMBER-CONSUMERS, AND THUS CAN POTENTIALLY PROVIDE A DECLINING BLOCK RATE FOR THOSE MEMBERS USING HEAT PUMPS.
- IN 2019, THE AVERAGE IPEC RESIDENTIAL CONSUMER USED ONLY 324 KWH PER MONTH. THAT LEAVES ROOM FOR MAXIMIZING THE AMOUNT OF PCE PER RESIDENTIAL CONSUMER BY ENCOURAGING THE DEPLOYMENT OF HEAT PUMPS (ABOUT 176 KWH PER MONTH TO BE SUBSIDIZED BY PCE, ON AVERAGE).
- A COMPETITIVE RATE SUGGESTED BY ACEP, ABOUT \$.25/KWH FOR SALES ABOVE 500 KWH, AND A DEPLOYMENT OF ABOUT 25% OF RESIDENTIAL CUSTOMERS IN KAKE, COULD RESULT IN POSITIVE NET PRESENT VALUE TO IPEC’S MEMBERS EVEN AFTER TAKING INTO ACCOUNT THE COST OF BUYING AND INSTALLING A HEAT PUMP, AND ASSUMING A COST OF HEATING FUEL OF \$2.76/GALLON
- THE STUDY HAS NOT BEEN TESTED, BUT WE HOPE TO DO A TEST OF ITS FINDINGS IN THE NEAR FUTURE

IN THE MEANTIME, IPEC WILL CONTINUE ITS QUEST FOR
RENEWABLE HYDRO POWER FOR ITS COMMUNITIES
(PICTURES OF GUNNUK CREEK HYDRO)



QUESTIONS?

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