January 24, 2022

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By the Regulatory Commission of Alaska on Jan 24, 2022

Regulatory Commission of Alaska 701 W. 8th Avenue, Suite 300 Anchorage, Alaska 99501

Subject: Tariff Advice Filing 396-121; Compliance with Order U-21-022(2) – Inception Rate for Electric Vehicle Direct Current Fast Charging Stations

Dear Commissioners:

On October 25, 2021, the Regulatory Commission of Alaska (Commission) issued Order No. U-21-022(2) (Order 2) allowing electric utilities to establish inception rates for electric vehicle (EV) direct current (DC) fast charging under a two-part rate structure. The purpose of this filing is to establish EV charging rates on an inception basis for DC fast charging stations at primary and secondary voltage levels that remove demand charge barriers to DC fast charging stations. A similar filing is being submitted by Chugach for the South District under Certificate of Public Convenience and Necessity No. 8 in Tariff Advice No. 518-8. The tariff filing described below is transmitted to you in compliance with Order 2 and the Alaska Public Utilities Commission Act and Sections 3 AAC 48.200 - 3 AAC 48.430 of the Alaska Administrative Code. Chugach requests approval of the following tariff sheets:

TARIFF SHEET NUMBER		CANCELS SHEET NUMBER		SCHEDULE OR	
<u>ORIGINAL</u>	<u>REVISED</u>	<u>ORIGINAL</u>	<u>REVISED</u>	RULE NUMBER	
38	1st Revision	38	Original	Resale of Electricity	
80.1	Original			EV LGS - Secondary	
82.1	Original			EV LGS - Primary	

Chugach has and continues to support the advancement of EVs in Alaska for the benefit of our members and the public at large. Facilitating the use of EVs offers electric utilities the opportunity for increased load growth, reduction in carbon emissions and, when rates are properly constructed, results in increased utilization of electric utility infrastructure. Given the high capital requirements of furnishing electric service, this increased contribution to fixed costs, while ensuring recovery of the incremental cost to provide service, provides for greater benefit to both utilities and the customers that they serve. To achieve these benefits, however, DC fast charging infrastructure must materialize in the Alaska market. In this early stage of market adoption, existing large general service rate structures under a standard three-part tariff creates significant barriers to the advancement of DC fast charging infrastructure.

In Order 2, the Commission approved the DC fast charging rate formula advanced by Chugach, Golden Valley Electric Association, Inc., Homer Electric Association, Inc., and Matanuska

Electric Association, Inc. in a joint petition submitted to the Commission on June 8, 2021. The DC fast charging rate formula preserves each utility's approved cost of service and provides for rate design adjustments that limits the effective average per kWh rate. The cap under the DC fast charging rate formula is established by load factor as determined by each utility. In this way, the rate design changes are made as a carve-out for DC fast chargers. The cost of service study remains intact and rates for DC fast charging correctly remain within the large general service rate class.

Consistent with ordering paragraph 3 of Order 2, and as explained further below, Chugach is requesting approval to set the load factor at a level that establishes the cap at its base residential energy rate.¹ If approved, the inception rate will be in effect for the earlier of a 10-year period or until Chugach receives Commission approval of an alternative rate design for DC fast charging infrastructure after sufficient usage data is available. With this filing, Chugach requests the following:

- 1) Approval to establish large general service tariffs for service to EV DC fast charging stations on an inception basis for service at primary and secondary voltage levels, such that the average base rate (energy and demand charges) within each billing cycle is capped at Chugach's residential base energy rate for monthly billing load factors at or below specific percentages, as described further below. All other large general service rate components remain unchanged.
- 2) Approval to add clarifying language in its operating tariff that EV charging stations are not subject to electric resale restrictions; and,
- 3) A waiver from providing supporting information in conformance with 3 AAC 48.275(b)(3) and 48.540(d), if needed.

This filing is for a new service establishing a tariff for EV DC fast charging stations on an inception basis. This filing will not result in the termination of an existing service, conflict with any other schedule or rate contained in Chugach's operating tariff, or in any other way adversely impact customers or the public. Chugach provides electric service to approximately 113,000 meters on its system, with 31,000 metered locations in the North District and 82,000 metered locations in the South District. Chugach is projecting annual revenues of approximately \$354 million for calendar year 2022. Currently, there are no DC fast charging stations within Chugach's service area, and there is therefore no immediate revenue impact resulting from the inception rate. Based on projected EV adoption rates and the building of DC fast charging infrastructure, the new rate is expected to add additional base rate revenues of approximately \$0.3 million over the next five years. On an annualized basis, the contribution to fixed costs is expected to be below 0.1 percent of base rate revenue. Chugach requests the tariff sheets submitted herein be approved by March 17, 2022.

Summary

From a rates perspective, the primary issue with DC fast chargers is the negative financial impact on station owners due to demand charges combined with the attendant usage characteristics of DC

¹ Attachment 1 is the Chugach Electric Association, Inc. Board of Directors' Motion establishing that the EV inception rate is capped at a load factor that results in an energy rate equivalent to the residential rate.

Commissioners		
Tariff Advice No. 396-121.	Compliance with	Order U-21-022(2)

fast chargers. Rate design addresses the method through which the cost of service is applied to customer bills and consists of many different approaches including customer, volume, and demand charges. The current standard large general service three-part rate design incorporates a demand charge which works to incentivize customers to manage their maximum demand. When customers control or manage their maximum demand in relation to their energy usage, their load factor increases which results in a lower overall average rate. This is desirable for the class as a whole because higher load factors provide more efficient utilization of system assets. In general, however, the hosts of DC fast charging stations cannot directly control the load factor, which is determined by the public using the charging station. Because DC fast chargers are generally used intermittently, over short durations and at high power, the resultant load factor for each charging station can be very low. In turn, the resultant cost on a per-kWh basis under the three-part tariff rate designs can be very high.

Without a DC fast charging rate, developers will be unlikely to develop DC fast charging stations within the Chugach service area due to the high cost of power. For example, if used twice daily to charge an EV 50 kWh, a 100 kW DC fast charger in the North District would cost the owner approximately \$4,450 for demand and energy on their monthly bill, or \$1.49 per kWh. For the South District, the cost would be \$2,340, or \$0.78 per kWh. As another example, a four-unit (250 kW per unit) DC fast charging station with the same usage characteristics in the example above would cost over \$11 per kWh in the North District and \$5.50 per kWh in the South District.

It is unknown how much growth in EV sales will result from the adoption of this tariffed rate; however, Chugach has modeled additional base rate revenue that will result from the inceptionbasis tariff. Assuming the number of EVs added in the Chugach service area each year increases by 20 percent, Chugach estimates additional contribution to its fixed costs of \$0.3 million over the next 5 years.

Chugach conducts state-wide counts of EVs registered in Alaska. Figure 1 shows the growth of battery EVs in both the Chugach service area and in the Railbelt from 2018 through 2021. While the current annual growth rate is high in the Chugach service and Railbelt at 68% and 65%, respectively, battery EVs represent only approximately 0.2% of all vehicles registered in Alaska.²



 $^{^2}$ The Alaska Division of Motor Vehicles' most recent published data (year-end 2020) indicates about 600,000 passenger vehicles and pickup trucks registered and residing in state. The statewide count of battery EVs is 1,273 as of December 31, 2021.

Calculation of DC Fast Charging Rate

The DC fast charging inception rate formula advanced by the utilities and approved by the Commission is:

Inception Rate = [Demand Charge / (Assumed Load Factor * Hours)] + Energy Rate

The methodology removes demand charge barriers to DC fast chargers by establishing a per kWh rate for customer load factors up to a pre-determined level as set by each utility. If the customer's load factor exceeds that pre-determined level, the rate is then based on the utility's large general service rate schedule.

Chugach is requesting approval to set the load factor that results in an average energy rate equivalent to its residential energy charge, which is currently \$0.15274 per kWh for the North District and \$0.13508 per kWh for the South District. The corresponding load factors are 41 percent for the North District and 34 percent for the South District for secondary service, and 39 percent and 36 percent for primary service, respectively. If a customer's load factor exceeds these levels, then the customer will be charged both a demand and energy charge, consistent with the large general service tariff at primary and secondary voltage. At load factors above the limit, the resulting rate (energy and demand charge) on a per kWh basis will be lower than the residential rate. Chugach has structured the new DC fast charging tariff under these parameters.

Figures 2 and 3 below identify average electric rates on a load factor basis for large general service customers on the Chugach system. The horizontal axis on each figure shows the load factor and the vertical axis shows the resultant average energy rate based on current energy and demand rates for the North and South District large general service classes at secondary voltage.





As shown, without the cap, customers with very low load factors pay significantly higher average energy costs. At very low load factors, owners of DC fast chargers may be better off installing their own generation, resulting in unnecessary duplication and the elimination of contributions to utility fixed costs to the detriment of all customers and the utility. This approach does not mean that demand-related costs are not recovered but rather both demand and energy costs are recovered through a single energy charge. In this way, the energy charge specific to the large general service rate class (primary and secondary, as applicable) that was established in each utility's last general rate case proceeding is preserved.

The following principles underlie Chugach's request for Commission approval to cap the DC fast charging rate at the base residential energy rate:

- Removes the demand-charge barrier to DC fast charging infrastructure for public benefit and Chugach is expecting to more than recover the incremental costs to provide the service. The only rate element adjusted is billing demand; all other rate components remain unchanged. Because the inception rate incorporates a demand charge into the energy charge, Chugach is continuing to receive fixed cost contributions to the system.
- Using a load factor that matches the residential rate gives potential owners of DC fast charging stations a more level playing field to add their costs to the rates they charge and remain economically viable.
- From the EV driver's perspective, the rate paid for DC fast charging will likely be somewhat higher due to the station owner adding capital and operating expenses to the rate charged. Although the rate that Chugach charges DC fast charging stations is capped, the actual charges to the public will be market driven.

• Creates a solution that works for the market until the adoption of DC fast charging matures in the marketplace and is administratively efficient for both Chugach and the members who use the rate.

Currently, there are no DC fast chargers on the Chugach system. Chugach expects that removal of the rate barriers to DC fast charging will lead to new installations which will allow Chugach to gather usage data in the evaluation of rate designs for DC fast chargers. The DC fast charging rate is only applicable to incremental loads specific to charging electric vehicles but includes attendant ancillary loads that directly support the charging station, such as security lighting that cannot easily be served by a different meter. Service provided must be separately metered.

Electric Resale Restrictions

Chugach's tariff currently prohibits retail members from reselling electricity: "A retail member shall not sell or otherwise provide electric service furnished by Chugach. This Rule does not prohibit a member from sub-metering for purposes of apportioning costs among tenants or other users." To provide clarity for EV charging station owners, and consistent with ordering paragraph 4 of Order 2 which allows utilities to clarify that electric vehicle charging stations are not subject to restrictions related to the resale of electric service, Chugach is requesting approval to revise its operating tariff to state: "The sale of electric vehicle charging services electricity to a third party from an electric vehicle charging station shall not be considered resale of electricity." This change is identified on Tariff Sheet No. 38.

Request for Waiver of 3 AAC 48.275(b)(3) and 3 AAC 48.540(d), if Needed

Chugach is required under 3 AAC 48.725(b)(3) and 3 AAC 48.540(d) to submit cost justification for implementation of the inception rates. Under the inception rate methodology, Chugach is not changing its existing Commission-approved cost of service studies but rather only the rate design for a subset of new customers is being modified and only under limited (but expected) conditions. The rate design is identical with Chugach's standard large general service class when the customer's load factor exceeds a certain level.³ When the load factor is below this level, the DC fast charging stations are charged a flat per kWh rate that is equivalent to the residential energy rate which includes recovery of both energy and demand-related costs.

Under the inception rate methodology, Chugach is recovering its incremental cost to provide service and is receiving a contribution to fixed costs for system benefit. The inception rate allows Chugach to gather usage information for a period of up to 10-years by which a determination can be made as to whether a separate class of service should be established.

To the extent that additional cost information is needed, Chugach is requesting a waiver from 3 AAC 48.275(b)(3) and 3 AAC 48.540(d) until cost information can be obtain for service to these members. Currently, Chugach is not providing electric service to any DC fast charging stations.

³ The inception rates are identical to the large general service class when the monthly billing load factors exceed 41 percent in the North District and 34 percent in the South District for secondary service, and 39 percent and 36 percent for primary service, respectively.

Description of Tariff Sheet Changes

Tariff Sheet No. 38: New language has been added to clarify that the sale of electric vehicle charging service to a third party from an electric vehicle charging station shall not be considered the resale of electricity.

Tariff Sheet No. 80.1: This sheet has been added to provide rules and inception rates for DC fast charging stations billed under the large general class receiving energy at secondary voltage, and to match the language of the South District tariff (Tariff Sheet No. 87.1.1) as updated in Tariff Advice No. 518-8.

Tariff Sheet No. 82.1: This sheet has been added to provide rules and inception rates for DC fast charging stations billed under the large general class receiving energy at primary voltage, and to match the language of the South District tariff (Tariff Sheet No. 87.1.2) as updated in Tariff Advice No. 518-8.

Questions regarding this filing should be directed to Sean Skaling, Manager, Business and Sustainable Program Development, at 907-762-4192 or sean_skaling@chugachelectric.com.

Sincerely,

CHUGACH ELECTRIC ASSOCIATION, INC.

little V. Mille

Arthur W. Miller Executive Vice President, Regulatory & External Affairs

Attachments

cc: Rob Montgomery, City of Seward

RCA No. 121	1 st Revision	Sheet No.	38	
CHUGACH POWERING ALASKA'S FUTURE	Canceling Original	Sheet No.	38	
Chu	gach Electric Associat	ion, Inc.		

6.15 <u>Resale of Electricity</u>.

A customer shall not sell any of the electric energy furnished by Chugach unless the customer holds a valid certificate of public convenience and necessity issued by the Regulatory Commission of Alaska for retail distribution of electric energy and the customer has executed a contract with Chugach, or is accepting service under a schedule, which specifically authorizes the resale of electricity. This rule does not prohibit a customer from sub-metering for purposes of apportioning costs among tenants, provided the service location meets the terms set forth in Rule 8.6 or 8.7. The sale of electric vehicle charging service to a third party from an electric vehicle charging station shall not be considered the resale of electricity.

6.16 Service Complaints.

A customer may file a complaint with Chugach concerning the adequacy of the electric service provided or the failure of Chugach to comply with the rules and regulations or Rate Schedules established by this tariff. A service complaint may be filed only by a customer, or an authorized representative, who is directly affected by the action or inaction that is the subject of the complaint.

A service complaint may be oral or written and directed to the attention of the Chief Executive Officer of Chugach at 5601 Electron Drive, Anchorage, Alaska, 99518. If the Chief Executive Officer of Chugach requests, the complaint shall be reduced to writing and signed by the customer or an authorized representative. It shall set forth the name, address, and telephone number of the

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RCA No. 121	Original	Sheet No.	80.1	
	Canceling			
CHUCACH POWERING ALASKA'S FUTURE		Sheet No.	80.1	
Chugach Electric Association, Inc.				

LARGE GENERAL SERVICE – ELECTRIC VEHICLE DIRECT CURRENT FAST CHARGING N SECONDARY SERVICE (Over 20 kW)

Available for three-phase secondary service at 480 volts or higher for electric vehicle direct current (DC) fast charging stations. Only electric vehicle charging and ancillary station service loads that are directly applicable to vehicle charging may be served under this tariff. This tariff is available on an inception basis until the earlier of March 17, 2032 or until an alternative tariff is established for DC fast charging service.

Monthly Rate

Customer Charge:	\$92.61	per Month

For billing periods where the customer's load factor is 41.283% or lower, the following rates shall apply:

Demand Charge:	\$0.00	per kW
Energy Charge:	\$0.15274	per kWh

For billing periods where the customer's load factor is greater than 41.283%, the following rates shall apply:

Demand Charge:	\$44.53	per kW
Energy Charge:	\$0.00498	per kWh

Billing Demand

The billing demand shall be the average kW supplied during the 15-minute period of maximum use during the month.

Load Factor

The billing period load factor shall be calculated by dividing the average demand by the billing demand (i.e. (billing period kWh / hours in period) / billing period kW).

Fuel and Purchased Power Cost Adjustment

In accordance with Tariff Sheet Nos. 66 - 70 and 103, additional charges reflecting the actual cost of fuel and purchased power expense will be applied to each billing for service rendered under this schedule.

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RCA No. 121	Original	Sheet No.	82.1
	Canceling	Sheet No.	82.1
POWERING ALASKA'S FUTURE		Sheet NO.	
Chugach Electric Association, Inc.			

LARGE GENERAL SERVICE – ELECTRIC VEHICLE DIRECT CURRENT FAST CHARGING N PRIMARY SERVICE (Over 20 kW)

Available for three-phase primary service for electric vehicle direct current (DC) fast charging stations. Only electric vehicle charging and ancillary station service loads that are directly applicable to vehicle charging may be served under this tariff. This tariff is available on an inception basis until the earlier of March 17, 2032 or until an alternative tariff is established for DC fast charging service.

Monthly Rate

Customer Charge:	\$619.42	per Month	

For billing periods where the customer's load factor is 39.930% or lower, the following rates shall apply:

Demand Charge:	\$0.00	per kW
Energy Charge:	\$0.15274	per kWh

For billing periods where the customer's load factor is greater than 39.930%, the following rates shall apply:

Demand Charge:	\$43.10	per kW
Energy Charge:	\$0.00488	per kWh

Billing Demand

The billing demand shall be the average kW supplied during the 15-minute period of maximum use during the month.

Load Factor

The billing period load factor shall be calculated by dividing the average demand by the billing demand (i.e. (billing period kWh / hours in period) / billing period kW).

Fuel and Purchased Power Cost Adjustment

In accordance with Tariff Sheet Nos. 66 - 70 and 103, additional charges reflecting the actual cost of fuel and purchased power expense will be applied to each billing for service rendered under this schedule.

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Attachment 1

CHUGACH ELECTRIC ASSOCIATION, INC. Anchorage, Alaska

REGULAR BOARD OF DIRECTORS' MEETING AGENDA ITEM SUMMARY

December 15, 2021

ACTION REQUIRED

AGENDA ITEM NO. X.E.

Information Only
X Motion
Resolution
Executive Session
Other

TOPIC

Electric Vehicle DC Fast Charging Rates

DISCUSSION

On October 25, 2021, the Regulatory Commission of Alaska (Commission) issued an order requiring electric utilities seeking to implement DC fast charging inception rates to file a tariff revision that removes barriers to DC fast charging infrastructure. The methodology approved by the Commission is identical with the DC fast charging rate methodology advanced by Chugach Electric Association, Inc., Homer Electric Association, Inc., Golden Valley Electric Association, Inc., and Matanuska Electric Association, Inc. in prior filings to the Commission.

The methodology removes demand charge barriers to DC fast chargers by establishing a per kWh rate for customer load factors up to a pre-determined level as set by each utility. If the customer's load factor exceeds that pre-determined level, the rate is then based on the utility's large general service rate schedule.

Chugach is proposing to match the load factor with the residential energy rate, which is currently \$0.13508 per kWh for the South District and \$0.15274 per kWh for the North District. The corresponding load factors for the DC fast charging rate are 41 percent for the North District and 34 percent for the South District for secondary service, and 39 percent and 36 percent for primary service, respectively. If a customer's load factor exceeds these levels, then the customer will be charged under the applicable large general service tariff that includes both a demand and energy charge. At the higher load factor levels, the resulting rate on a per kWh basis will be lower than the residential rate.

EVs present a significant opportunity to increase utilization of Chugach's electric infrastructure and Chugach supports the rapid expansion of the number of EVs in its service area for the benefit of all members. Setting the price to match residential rates encourages the adoption of electric vehicles throughout Southcentral Alaska by removing demand charge barriers to DC fast charging infrastructure. This inception rate will be in effect for the earlier of a 10-year period or until Chugach receives approval of an alternative rate design for DC fast charging infrastructure.

MOTION

Move that the Board of Directors authorize the Chief Executive Officer to file inception rates for DC fast chargers with the Regulatory Commission of Alaska such that the energy charge is fixed at the residential rate for North District customer load factors of 41 percent and 39 percent for secondary and primary service, and for South District customer load factors of 34 percent and 36 percent for secondary and primary service.