

STATE OF ALASKA

REGULATORY COMMISSION OF ALASKA

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Before Commissioners:

T.W. Patch, Chairman  
Kate Giard  
Paul F. Lisankie  
Robert M. Pickett  
Janis W. Wilson

In the Matter of the Tariff Revision Designated )  
As TA 335-8, Filed by CHUGACH ELECTRIC )  
ASSOCIATION, INC. for Approval of the Power ) TA 335-8  
Purchase Agreement Between Fire Island Wind, )  
LLC and Chugach Electric Association, Inc. )

COMMENTS OF MUNICIPAL LIGHT & POWER

I. Introduction and summary.

On June 23, 2011, Chugach Electric Association, Inc. ("Chugach") filed Tariff Advice Letter No. TA 335-8 ("TA 335-8"), requesting approval of a power purchase agreement ("PPA") between Fire Island Wind, LLC ("FIW") and Chugach. Chugach also requested authorization to recover the costs of energy purchases under the PPA through Chugach's cost of power adjustment ("COPA"). Chugach further requested that the Commission complete its review and issue a ruling by September 15, 2011.

In response to the Commission's June 24, 2011, Notice of Utility Tariff Filing, the Municipality of Anchorage d/b/a Municipal Light & Power ("ML&P") respectfully submits these comments regarding TA 335-8. For years, ML&P has supported, and continues to support, cost-effective renewable energy projects, including hydroelectric and geothermal projects, as legitimate potential power supply options for Railbelt utilities. ML&P also acknowledges that utility-scale wind power can provide significant ratepayer benefits in those areas that rely on

1 diesel<sup>1</sup> generation, have on-site fuel storage, and have access to sufficient hydroelectric or battery  
2 storage facilities to facilitate efficient integration of wind power.<sup>2</sup> However, ML&P has several  
3 significant concerns regarding the FIW PPA.

4 In summary, ML&P's comments will address the following issues and  
5 recommendations:

6 A. ML&P's interests in this matter.

7 B. TA 335-8 and the PPA do not adequately address integration of FIW energy and  
8 system reliability impacts on other Railbelt utilities. At a minimum, the Commission should not  
9 approve the PPA until it resolves precisely how FIW energy will be integrated and regulated into  
10 the Railbelt interconnected electrical system ("RIES") and what the costs of that integration and  
11 regulation will be, both to Chugach as well as to ML&P and other Railbelt utilities.

12 1. Background regarding integration and regulation of intermittent wind  
13 energy.

14 2. Necessary integration analyses, procedures, and arrangements have not  
15 been completed.

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19 <sup>1</sup> Areas having diesel generation are well-suited for wind power both because of the high avoided  
20 cost of diesel fuel and because diesel fuel is stored on-site with diesel generation facilities, which  
21 provides flexibility to the purchasing utility for integrating intermittent wind energy.

22 <sup>2</sup> Alaska Village Electric Cooperative, Inc. ("AVEC"), Kodiak Electric Association, Inc.  
23 ("KEA"), Kotzebue Electric Association, Inc. ("KOTZ"), TDX Sand Point Generating, Inc.  
24 ("TDX-SP"), and Golden Valley Electric Association, Inc. ("GVEA") are examples of utilities  
25 that have successfully deployed (or will deploy, in GVEA's case) utility-scale wind power, as a  
26 result of their use of diesel generation and, for KEA and GVEA, their access to favorable  
integration resources like significant hydroelectric generation (KEA) and battery storage (GVEA). As will be explained later, these factors do not exist with respect to Chugach and ML&P.

1                   3.     Depending on how Chugach integrates FIW energy into its control area  
2 (e.g., with the Southcentral Power Plant ("SPP"), the Bradley Lake Hydroelectric Project  
3 ("Bradley Lake"), or other Chugach units), Chugach's integration will impose costs and burdens  
4 on ML&P and its customers.

5                   4.     Due to interconnected operation on the Railbelt, it may not be possible for  
6 Chugach to prevent costs and burdens of FIW integration from being imposed on ML&P.

7                   C.     If the PPA is approved, such approval should be subject to the following  
8 conditions:  
9

10                  1.     Chugach is required to complete an integration study and file it for  
11 Commission approval.

12                  2.     Chugach is required to operate its resources and control area to prevent, to  
13 the extent possible, FIW energy from impacting ML&P system reliability or imposing  
14 integration or regulation costs on ML&P.

15                  3.     Chugach is required to compensate ML&P for any costs incurred by  
16 ML&P resulting from FIW energy impacts.

17                  D.     Comments and Concerns Regarding Commission Precedent and Policy:  
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19                  1.     The Commission's decision in this case will affect future power purchase  
20 agreements and possibly the pricing demands by qualifying facilities ("QFs") seeking to sell  
21 energy to regulated utilities.

22                  2.     The standard of approval for a renewable resource PPA should be  
23 non-discriminatory and not adversely affect end user ratepayers. At a minimum, the  
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Commission should ensure that the purchasing utility is not required to pay more than the utility's avoided cost for nonfirm, intermittent energy.

3. Avoided cost should be based on actual costs or, at a minimum, on reasonably projected long-run costs, and must account for all costs of integration and regulation. Possible future carbon tax legislation and possible future renewable energy credit ("REC") markets are too speculative for reasonable inclusion in avoided cost calculations.

4. While rate stability and generation source diversification can be beneficial, they are not ends in and of themselves. Claimed ratepayer benefits from rate stability and generation source diversification for a given project should be substantiated, quantified, and weighed against the costs.

5. The possibility of FIW's acquisition of federal grant funds should not lower the standard of approval or level of scrutiny that the Commission applies to protect the ratepayers of the purchasing utility and those of other interconnected utilities, particularly for a project that will yield negative or minimal ratepayer savings and environmental benefits.

E. TA 335-8 should be suspended for formal investigation.

## **II. Discussion.**

### **A. ML&P's interests in this matter.**

Generally, ML&P would not comment regarding a power purchase agreement between two other utilities unless it had a particular interest that would be affected by that agreement. In this case, ML&P's comments are motivated by two particular areas of interest.



1 First, reliability of the RIES is a shared responsibility of all of the interconnected  
2 utilities. It is not possible for one of the three REIS control areas<sup>3</sup> to degrade its reliability  
3 without the other control areas being similarly affected. Therefore, if Chugach suffers a loss of  
4 reliability as a result of the output variability of a relatively large (17.6 MW) intermittent  
5 resource like the FIW project, that loss of reliability will be shared among all of the control  
6 areas. Because of interconnected operation on the RIES and shared output rights and cost  
7 responsibility between ML&P and Chugach for some Railbelt generation resources (e.g., SPP  
8 and Bradley Lake), ML&P may incur efficiency losses and operation and maintenance ("O&M")  
9 costs as a result of FIW output variability or Chugach's integration of FIW energy. As a result  
10 of these impacts, ML&P will likely be directly affected by the FIW PPA. These reliability,  
11 efficiency, and cost impacts are discussed in greater detail in later sections. In addition, the  
12 Municipality of Anchorage ("MOA") is a Chugach retail customer and pays approximately  
13 \$4.5 million per year to Chugach in electric utility charges related to the numerous facilities it  
14 operates. With immediate rate increases of between 2.0 percent and 2.2 percent for small general  
15 service and large general service customers, the MOA stands to incur increased costs of \$90,000  
16 to \$99,000 per year as a result of the FIW PPA, and possibly larger increases depending on the  
17 accuracy of Chugach's projected avoided cost analyses.  
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20 Second, ML&P also has a more general interest in ensuring that any precedent or  
21 policy established by the Commission's order in this case is reasonable and based on adequate  
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23 <sup>3</sup> The Railbelt is divided into three control areas, operated by Chugach, ML&P, and GVEA.  
24 Each of these control areas is responsible to limit its inadvertent interchange to within specified  
25 bounds and to contribute in specified amounts to frequency control. In addition to this, the  
26 generating utilities of the RIES are required to contribute specified amounts of spinning and non-  
spinning operating reserve so that the RIES can maintain continuous operation through system  
disturbances.

1 consideration of how it will affect other power purchase agreements in the future. For example,  
2 based on its review of TA 335-8, it appears to ML&P that the FIW PPA price either exceeds  
3 Chugach's avoided cost of energy or is being justified based on a biased and unreasonable  
4 avoided cost calculation methodology. Depending on what standard of approval the  
5 Commission applies, and how it applies it, the Commission's decision regarding TA 335-8 could  
6 impact the pricing methodology of the power purchase agreements of ML&P and other utilities  
7 in the future. In addition, the Commission's ruling in this case may impact future determinations  
8 of avoided cost pricing for mandatory utility purchases from QFs under 3 AAC 50.770.  
9

10 Beyond addressing the ML&P interests identified above, ML&P's comments are  
11 also intended to assist the Commission in assessing the broader regional and policy implications  
12 of relatively large intermittent generation resources on the RIES. ML&P has been involved with  
13 analyzing the potential for wind energy from Fire Island for over seven years, and along with  
14 Chugach and other Railbelt utilities has devoted significant time and resources to reviewing the  
15 advantages, disadvantages, and potential impacts of that energy in the RIES. ML&P's comments  
16 reflect some of the information and concerns that ML&P has acquired during that process.  
17 Similarly, as a Cook Inlet natural gas producer, natural gas pipeline transportation customer, and  
18 initial customer of the Cook Inlet Natural Gas Storage Alaska, LLC ("CINGSA") natural gas  
19 storage facility, ML&P has a uniquely informed perspective regarding the technical and policy  
20 issues implicated by the FIW PPA. Given ML&P's experience in these areas, ML&P hopes its  
21 comments will assist the Commission in the development of a complete record for its decision in  
22 this matter.  
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24

1           B.     TA 335-8 and the PPA do not adequately address integration of FIW energy  
2                 and system reliability impacts on other Railbelt utilities.

3                 1.     Background regarding integration and regulation of intermittent  
4                         wind energy.

5                 In some wind power projects, the wind power seller itself provides supplemental  
6                 non-wind resources (e.g., low-load thermal generation or energy storage facilities) to ensure that  
7                 the wind energy can be integrated effectively and efficiently into the purchasing utility's system.  
8                 One recent, local example of that is Aleutian Wind Energy, LLC, in Sand Point (discussed in  
9                 greater detail later). By contrast, the FIW project consists of wind power units only. As a result,  
10                Chugach (and other interconnected generating utilities) effectively must provide the resources  
11                for integration of FIW output.

12               The RIES is a small grid that does not have the benefit of large amounts of  
13               generation and customer load to buffer the rapid changes in generation that can and will occur  
14               with the introduction of wind generated power from FIW. The Railbelt utilities have over time  
15               developed the technical and operational competencies to be able to predict what the loads will be  
16               and, thus, to be able to schedule their generation (and natural gas deliveries) to balance demand  
17               and maintain grid frequency and voltage within the narrow limits required. Wind power  
18               generation does not follow a pattern like customer load does and it can vary considerably and  
19               unpredictably over a very short span of time. Since all of the generated wind power must be  
20               absorbed into the power grid, and grid generation/load balance must be maintained at all times,  
21               large shifts in wind power output must be absorbed (or regulated) by either curtailing wind  
22               power output (spilling wind), ramping-up or ramping-down conventional generation (thermal or  
23               hydroelectric), or using an energy storage device such as a large grid-sized battery.

1 In the context of integrating wind energy into a control area, "regulation" refers to  
2 having other generation capacity immediately available within the control area in sufficient  
3 capacity and response speed to counteract the variability of wind power and provide constant  
4 frequency regulation and scheduled exchanges with neighboring utilities. The primary potential  
5 means of regulation are thermal generation, hydroelectric generation, wind curtailment, electric  
6 battery storage, or a combination thereof. At present, there is no electric battery storage  
7 available for regulation of FIW energy.<sup>4</sup>  
8

9 For regulation with thermal generation in Southcentral Alaska, one of the main  
10 challenges (among others) is that even if the utility has enough thermal capacity spinning and  
11 immediately available to counteract wind energy variability, the utility must also have significant  
12 flexibility in natural gas supply and transportation to the thermal unit to allow it to adequately  
13 follow the variability of the wind unit's output.<sup>5</sup> In Southcentral Alaska, natural gas supply  
14 contracts and transportation tariffs do not provide that type of flexibility and impose significant  
15 penalties for failing to meet scheduled gas nominations. Thus, natural gas storage that is located  
16 on the same site as thermal generation is generally needed to provide necessary flexibility for  
17 adequate regulation of significant wind energy variability in Southcentral Alaska.<sup>6</sup>  
18

19  
20 <sup>4</sup> This is in contrast to GVEA's planned Eva Creek Wind Project, where ML&P understands that  
21 GVEA will rely on its battery electric storage system ("BESS") to assist with integration of the  
project into the RIES.

22 <sup>5</sup> Fuel supply flexibility is not a significant challenge for utilities that use diesel generation, such  
23 as AVEC, GVEA, KEA, KOTZ, and TDX-SP, as diesel fuel is stored on-site with diesel  
24 generation facilities.

25 <sup>6</sup> Note that remote natural gas storage facilities like that of CINGSA will not provide the  
26 flexibility required because the gas owner will still have to make advance nominations for  
natural gas transportation from the CINGSA storage facility to its thermal generation site.

1 Using hydroelectric generation for regulation has its own challenges, including  
2 (among others): the hydroelectric units in the RIES are limited in their ability to respond to fast  
3 changes in wind unit output; using hydroelectric units to regulate wind energy reduces the  
4 effectiveness of hydroelectric units in maximizing thermal generation efficiency ("hydro/thermal  
5 coordination"); and due to transmission constraints on the Anchorage-Kenai transmission  
6 system, using Bradley Lake to regulate FIW energy will negatively impact the ability of other  
7 utilities to use their share of Bradley Lake capacity for hydro/thermal coordination.

8  
9 **2. Necessary integration analyses, procedures, and arrangements have  
10 not been completed.**

11 During months of review of the FIW project by Chugach, ML&P, and others, the  
12 integration and regulation challenges discussed above were reviewed in significant detail,  
13 including system modeling by Chugach and utility consultants R.W. Beck and Electric Power  
14 Systems, Inc., without finding any resolution that could be effectively implemented without  
15 imposing significant changes and significant costs on RIES utilities. In particular, the utilities  
16 determined that the contractual, economic, and other restrictions associated with integrating a  
17 large intermittent wind project like FIW presented significant implementation obstacles,  
18 particularly when attempting to regulate FIW output within only one control area in the RIES.  
19 ML&P believed that the utilities agreed that, at a minimum, resolving those issues would require  
20 additional, project-specific integration and regulation cost analyses, changes in utility and  
21 inter-utility operating procedures and protocols, and likely significant investment in on-site  
22 natural gas storage or battery equipment. To the best of ML&P's knowledge, none of these  
23 necessary technical and economic analyses have been completed, and certainly have not been  
24 included in TA 335-8.  
25

1           Instead, TA 335-8 and the FIW PPA appear to simply defer these significant  
2 issues to a later time in the PPA's term. The only substantive provisions in the PPA relating to  
3 integration are Section 4.7 (requiring FIW to "use commercially reasonable efforts to observe a  
4 ramp rate restriction of 2.5 MW per minute"); Section 5.6 (allowing Chugach to curtail deliveries  
5 of FIW, but generally requiring Chugach to pay the contract price for the energy so curtailed);  
6 and Section 5.9(c) (stating that under a future "Interconnection and Integration Agreement," FIW  
7 will pay Chugach an "integration charge" of \$10.85 per MWh (1.085 cents per kWh) as FIW's  
8 sole contribution toward the costs of integration and regulation of FIW energy). In TA 335-8,  
9 Chugach admits that "[t]here will be challenges associated with integrating and regulating a wind  
10 resource so that it does not impede the operating efficiency of the existing generation system,"  
11 but naively asserts that the "commercially reasonable efforts to observe a ramp rate" clause in  
12 Section 4.7 of the PPA alone is "the tool" to address all of those challenges. Page 19. TA 335-8  
13 does not explain how the 2.5 MW per minute ramp rate could be enforced or how such a ramp  
14 rate is adequate to protect system reliability and efficiency. Ultimately, Chugach discloses that  
15 significant additional work is required to address the important issues of integration and  
16 regulation: "Chugach will continue to investigate alternative methods, practice, and equipment,  
17 such as batteries and flexible fuel supplies, which will improve the ability to manage the FIW  
18 Project output and future intermittent energy supplies."

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20  
21           If ML&P's customers' interests were not directly at risk and if important  
22 precedent and policy issues were not at stake, ML&P would forgo opining regarding this  
23 alarming lack of clarity regarding such an important, material term of another Railbelt utility's  
24 wind energy power purchase agreement. However, under the current circumstances, ML&P is  
25

1 compelled to note for the record that precisely how FIW energy will be integrated and regulated  
2 into the RIES, and the expected costs of that integration and regulation (for Chugach and other  
3 utilities), should be resolved before the Commission approves a 25-year, \$118 million, power  
4 purchase agreement that will obligate Chugach and its ratepayers to pay those costs and that will,  
5 in practical effect, transfer some of the costs of integration and regulation to ML&P's customers.

6  
7 **3. Depending on how Chugach integrates FIW energy into its control**  
8 **area (e.g., with SPP, Bradley Lake, or other Chugach units),**  
9 **Chugach's integration will impose costs and burdens on ML&P and**  
10 **its customers.**

11 Neither the PPA nor TA 335-8 explains precisely how Chugach will integrate  
12 FIW energy into its system. At a minimum, Chugach should be required to clearly explain how  
13 it plans to regulate FIW output variations and quantify the costs to Chugach and others of that  
14 regulation. As discussed below, Chugach's most likely options for regulation of FIW output will  
15 impose increased costs on ML&P and its customers.

16 As stated earlier, the current RIES grid consists of three control areas operated by  
17 Chugach, ML&P, and GVEA. Generally speaking, each control area uses two automatic  
18 methods for maintaining system frequency at 60 hertz. The first method involves each  
19 generator's automatic prime mover governor control. This typically is the first to respond to a  
20 frequency change, based on the governor droop setting. Droop is expressed as a percentage.  
21 The smaller the percentage, the quicker a unit will respond to a change in frequency. A governor  
22 with a 1 percent droop setting will cause a unit's fuel valve to open or close 100 percent if the  
23 frequency changes by 1 percent. Droop is designed to arrest the frequency change during a  
24 disturbance. The second method uses automatic generation control ("AGC"). AGC uses  
25 computers to monitor the control area's scheduled interchange with other utilities and adjusts  
26



1 generator output to keep the interchange on schedule. AGC is designed to return system  
2 frequency back to 60 hertz after governor droop stops the initial frequency drop.

3 a. SPP.

4 SPP is owned jointly by Chugach (70 percent) and ML&P (30 percent).  
5 However, SPP is in Chugach's control area and Chugach will dispatch that plant. Thus, ML&P  
6 will have to schedule its desired output from Chugach in advance, whereas the Chugach control  
7 area will actually use the entire SPP as part of its control response to any area control error  
8 ("ACE").  
9

10 Because the SPP units will likely be the only Chugach units that are operated  
11 24 hours a day, seven days a week due to their high efficiency, it is likely that Chugach will  
12 attempt to use SPP as the primary generation source to counteract unscheduled output changes of  
13 the FIW project. In such event, SPP will be required to ramp up or down as much as 17.6 MW  
14 (that equates to 9.6 percent of the full output of SPP) whenever the FIW project is operating.  
15 The combustion turbine units at SPP will likely be able to ramp quickly enough to respond to the  
16 power swings, however, this will materially impact wear and tear on the SPP units and greatly  
17 increase the cost of maintaining the units.  
18

19 SPP is designed as a combined-cycle, base load plant. Of its 183 MW total  
20 capacity, 42 MW to 51 MW (14 MW to 17 MW per unit) will be produced from waste heat from  
21 the combustion turbines providing steam to drive a turbine coupled to a generator, plus an  
22 additional four MW to 13 MW available from duct firing. If the plant is required to back down  
23 due to high output from the FIW project, SPP output will need to decrease, which in turn will  
24 result in less power produced from the steam driven generator, which reduces the efficiency of  
25  
26

1 the plant. If the plant is base loaded, as it is designed to be, it will not have the ability to increase  
2 its output to mitigate a decrease in output from the FIW project.

3 The net result is that using SPP, a combined-cycle, base load plant, to regulate  
4 FIW output will reduce the efficiency of SPP output and will increase the O&M costs of the SPP  
5 units. Chugach, as the control area operator and dispatcher of SPP, will operate the plant in this  
6 manner not because it is the most efficient and lowest-cost manner of operating the plant for  
7 Chugach's and ML&P's customers, but because it will be necessary to do so in order to regulate  
8 the variability of FIW output. As a 30 percent owner of SPP, ML&P (and its customers) will  
9 necessarily incur a significant portion of the increased costs resulting from reduced efficiency  
10 and increased operation and maintenance costs. Those impacts on ML&P are not discussed and  
11 certainly not adequately addressed in the PPA or TA 335-8.  
12

13 TA 335-8 states that under a future "Interconnection and Integration Agreement,"  
14 Chugach will receive a 1.085 cent per kWh system integration charge to help offset some of  
15 those costs (ML&P believes this charge is significantly less than the total cost of integration and  
16 regulation). While that might provide some offset to Chugach for integration and regulation  
17 costs, it provides no compensation for the costs incurred by ML&P and its customers.  
18

19 **b. Bradley Lake.**

20 Another potential option for integrating FIW energy into Chugach's control area  
21 is Bradley Lake. By contract, ML&P owns rights to 25.9 percent of the project's output and is  
22 obligated to pay 25.9 percent of its O&M costs. Currently, ML&P and Chugach generally use  
23 Bradley Lake output to meet peak loads as necessary to optimize hydro/thermal coordination. If  
24 Chugach plans to use Bradley Lake to follow FIW output, the following problems arise:  
25

1 First, solely from Chugach's standpoint, Bradley Lake may not be an effective or  
2 efficient method of regulation. That is because of Bradley Lake's inability to follow fast changes  
3 in wind output and because using hydroelectric units to follow the wind will prevent Chugach  
4 from using that hydroelectric output to optimize hydro/thermal coordination.

5 Second, Chugach's use of Bradley Lake to regulate FIW output will impair the  
6 ability of other Bradley Lake participants like ML&P to access their Bradley Lake shares when it  
7 is most valuable for optimizing hydro/thermal coordination. That is because Chugach's use of  
8 Bradley Lake to regulate FIW output (as the Chugach area controller) will "crowd out" other  
9 participants' access to their Bradley Lake shares over the already-constrained Anchorage-Kenai  
10 transmission line.

12 Third, similar to the issues raised above regarding SPP, ML&P will be  
13 responsible for 25.9 percent of the additional O&M costs associated with constantly varying the  
14 output of a large hydroelectric unit to follow FIW output.

15  
16 **c. Other regulation resources.**

17 Other potential options for regulation of FIW output include other generation  
18 units that are owned solely by Chugach, such as those at its Beluga, International, and Cooper  
19 Lake generation plants. Those other options would not impose the same types of costs on  
20 ML&P as would the use of SPP and Bradley Lake (but, like all of Chugach's current regulation  
21 options, they would impose system reliability burdens and costs on ML&P, as discussed in the  
22 next section). However, use of Chugach generation other than SPP or Bradley Lake would  
23 generally increase the cost of integration and regulation to Chugach and its customers due to the  
24 other units' lower efficiencies. Thus, it appears that Chugach will have an incentive to regulate  
25

1 FIW output in ways that systematically impose greater costs and burdens on other generating  
2 utilities like ML&P.

3 **4. Due to interconnected operation on the Railbelt, it may not be possible**  
4 **for Chugach to prevent costs and burdens of FIW integration from**  
5 **being imposed on ML&P.**

6 As discussed above, it is possible that some of the significant regulation impacts  
7 on ML&P resulting from using SPP or Bradley Lake could be mitigated if Chugach were to rely  
8 on other generation units for regulation of FIW output, although that would likely increase  
9 Chugach's cost of regulation. However, even if Chugach chose, or was ordered, to use other  
10 units to attempt to insulate ML&P from cost impacts, that would not eliminate the imposition of  
11 reliability risk, burdens, and costs on ML&P for the following reasons:

12 First, as a result of interconnected operation on the RIES, significant variations in  
13 FIW output (up to 17.6 MW) will automatically engage ML&P's automatic prime mover  
14 governor control systems to help maintain system frequency at 60 hertz. That will occur despite  
15 Chugach's use of AGC because, as was discussed earlier, AGC does not respond until after  
16 much of the burdens of a system disturbance have already been incurred through automatic  
17 governor response. That will, in effect, require ML&P to share in the burden of backing up the  
18 variable output of FIW. Thus, for a relatively large intermittent resource like FIW, it is not  
19 possible for Chugach to completely regulate FIW output to avoid it adversely impacting ML&P.  
20

21 Second, whenever ML&P is required to adjust its output in response to a  
22 disturbance caused by FIW variation, it will impact ML&P's ability to meet its natural gas  
23 production and transportation nominations. ML&P is currently very good at projecting its gas  
24 use, and nominating gas delivery accordingly, a day in advance in six-hour blocks, as required by  
25

1 the pipeline carriers. This 24/7 job requires ML&P to monitor and adjust for changes if required.  
2 Such changes are normally due to a change in scheduled sales to other utilities or a change in  
3 generation mix. These types of changes typically occur with sufficient advance notice to allow  
4 ML&P to keep its gas use within 1 percent of its nominations. When there is an unscheduled  
5 change, e.g., a firm generation unit trip or the loss of a large load, ML&P can be off on its  
6 nomination by a larger percentage and must then re-nominate within an hour or two. Currently,  
7 these are very rare occurrences. However, with the addition of a 17.6 MW intermittent wind  
8 project in the system, ML&P's ability to meet its nominations will be impaired, which increases  
9 ML&P's risk of incurring significant costs and penalties from pipeline carriers for failing to meet  
10 nominations.  
11

12 **C. If the PPA is approved, such approval should be subject to the following**  
13 **conditions:**

14 As stated earlier, ML&P believes that the issue of how FIW energy will be  
15 integrated and regulated into the RIES, and the expected costs of that integration and regulation  
16 (for Chugach and other utilities), should as a matter of prudence be resolved before the  
17 Commission approves a 25-year, \$118 million, power purchase agreement that will obligate  
18 Chugach and its ratepayers to cover those costs and that will, in practical effect, transfer some of  
19 the costs of integration and regulation to ML&P's customers. In addition, at a minimum, the  
20 PPA should not be approved without imposing reasonable conditions to minimize negative  
21 impacts to other Railbelt utilities like ML&P. Through the PPA, Chugach (not FIW) has  
22 obligated itself to be responsible for all costs of integrating and regulating FIW energy in the  
23 RIES (other than the small 1.085 cent per kWh integration charge). Chugach should not be  
24  
25

1 permitted to shift any of those costs to ML&P and its customers. At a minimum, ML&P  
2 recommends the following conditions:

3 1. Chugach is required to complete an integration study and file it for  
4 Commission approval.

5 2. Chugach is required to operate its resources and control area to prevent, to  
6 the extent possible, FIW energy from impacting ML&P system reliability or imposing  
7 integration or regulation costs on ML&P.

8 3. Chugach is required to compensate ML&P for any costs incurred by  
9 ML&P resulting from FIW energy impacts.

10  
11 **D. Comments and concerns regarding Commission precedent and policy:**

12 1. The Commission's decision in this case may affect future power  
13 purchase agreements and possibly the pricing demands by QFs  
14 seeking to sell energy to regulated utilities.

15 In TA 335-8, Chugach correctly states the Commission's current, long-standing  
16 standard of approval for power purchase agreements: That the rates are just and reasonable, that  
17 the load forecasts justify the need for the contract, and that the contract is the most feasible  
18 means of meeting the forecasted load. TA 335-8 at 16, n.10. However, TA 335-8 does not  
19 clearly state or show how the FIW PPA satisfies that standard. Instead, TA 335-8 asserts that  
20 Chugach views the PPA "as within the zone of reasonableness for a pioneering wind project of  
21 this type in Alaska and is confident that the rate impact to consumers is just and reasonable," and  
22 states that the PPA contract price is "on par with Chugach's existing resources after considering  
23 and making reasonable assumptions about fuel costs, fuel availability, carbon cost/risk, value of  
24 the Green Attributes, and similar factors." *Id.* at 16 (emphasis added). As will be discussed  
25  
26

1 later, ML&P believes that the contract price and other costs to Chugach under the PPA clearly  
2 exceed Chugach's avoided cost (unless new, speculative, and unreasonable assumptions are  
3 allowed in calculating avoided cost) and that TA 335-8 does not show that the PPA is the most  
4 feasible means of meeting forecasted load. Thus, it appears that TA 335-8 is implicitly arguing  
5 for a new, lower standard of approval in this case or for a new application of the current standard  
6 that departs from Commission precedent.

7  
8 Accordingly, ML&P is concerned that approval of the FIW PPA, as currently  
9 drafted, will establish an undesirable change in Commission precedent and policy, which will  
10 negatively affect power purchase agreements for ML&P and other utilities in the future.  
11 Specifically, ML&P is concerned that approval of the current FIW PPA will be construed as the  
12 Commission determining that it is just and reasonable for utility customers to be required to pay  
13 greater than avoided cost for nonfirm, intermittent energy or, alternatively, that avoided cost  
14 should be calculated using unreasonable and speculative cost components in order to bias the  
15 analysis in favor of a particular independent power producer ("IPP") resource.

16  
17 If such a precedent were established, it would create a new standard that is even  
18 more preferential for nonfirm energy sellers (and adverse to ratepayer financial interests) than  
19 the current preferential standard of avoided cost pricing for QFs, and expand the applicability of  
20 that standard to sellers that are not even QFs. In that way, such a standard would create  
21 unreasonable expectations by unregulated potential energy sellers that utility purchasers should  
22 be willing to pay greater than avoided cost for nonfirm energy. In addition, it could also be used  
23 as a claimed basis for sellers to file "unreasonable management practice" complaints with the  
24 Commission if a regulated utility declines to enter into a power purchase contract that contains a  
25



1 price that exceeds the utility's avoided cost. Furthermore, such a new standard may, ironically,  
2 discourage unregulated energy sellers from becoming a QF, even if they qualify for QF status.  
3 Finally, the new standard might prompt QFs to demand an expanded definition of avoided cost  
4 that includes unreasonable and speculative cost components similar to those used in TA 335-8.

5 For these reasons, ML&P urges the Commission to thoroughly consider the  
6 impacts that its decision in this case may have for future power purchase agreements with  
7 unregulated IPPs and QFs.  
8

9 **2. The standard of approval for a renewable resource PPA should be**  
10 **non-discriminatory and not adversely affect end user ratepayers. At a**  
11 **minimum, the Commission should ensure that the purchasing utility**  
12 **is not required to pay more than the utility's avoided cost for nonfirm,**  
13 **intermittent energy.**

14 **a. The Commission has the statutory authority to fully review all**  
15 **aspects of the PPA just like any other PPA.**

16 As an initial matter, it is clear that the Commission has the statutory authority to  
17 review the FIW PPA. Alaska Statute 42.05.431(b) states, in relevant part: "A wholesale power  
18 agreement between public utilities is subject to advance approval of the commission." This  
19 statute does not make any exception for agreements where one of the public utilities is exempt  
20 from Commission certification requirements or economic regulation. Because a renewable  
21 energy resource vendor that is exempt from regulation under AS 42.05.711(q), like FIW, meets  
22 the statutory definition of "public utility" (AS 42.05.990(4)(A)), AS 42.05.431(b) requires  
23 advance Commission approval of the FIW PPA. Moreover, nothing in Senate Bill 277,<sup>7</sup> the  
24 legislation that created AS 42.05.711(q), explicitly or by implication amended AS 42.05.431(b)

25  
26 <sup>7</sup> Section 3, Chapter 37, SLA 2010.

1 or provided for a reduced standard or scope of review for wholesale power sales agreements with  
2 exempt sellers.

3 **b. Commission precedent regarding standard of approval.**

4 For a power purchase agreement between a regulated utility and a QF, federal law  
5 and Commission regulation generally require that the contract price be set to be equal to (no  
6 lower than) the utility's avoided cost.<sup>8</sup> This reflects a special, pro-seller preference for the QF,  
7 mandated by federal law, in that it seeks to ensure that all of the financial benefits of the  
8 transaction accrue to the QF (not to the utility or its ratepayers) while leaving the utility's  
9 ratepayers merely economically indifferent to the transaction. That preference is intended to  
10 encourage purchases from renewable resource generators and other sellers that meet the fuel  
11 source and size criteria for QF status. However, even with this preference, the utility is never  
12 required to pay a contract price that exceeds its avoided cost because that would adversely affect  
13 the utility's ratepayers.<sup>9</sup>  
14

15 For power purchase agreements in which the seller is not a QF, the utility is not  
16 required to pay a price that is equal to (no lower than) avoided cost. Thus, a utility can enter into  
17 a power purchase agreement that provides rate savings for the utility's customers by having a  
18 contract price that is lower than the utility's avoided cost. ML&P is not aware of the  
19  
20  
21

22 <sup>8</sup> 16 U.S.C.A. § 824a-3(b); 18 C.F.R. § 292.304(a) and (b); 3 AAC 50.770(c)-(e). "Avoided  
23 cost" is defined as "the costs to an electric utility of electric energy or capacity or both, which,  
24 but for the purchase from the [QF], the utility would generate or purchase from another source."  
3 AAC 50.820(1).

25 <sup>9</sup> See 18 C.F.R. § 292.304(a)(2) ("Nothing in this subpart requires any electric utility to pay more  
26 than the avoided costs for purchases.").

1 Commission ever requiring, or allowing, a regulated utility to enter into a power purchase  
2 agreement under which the contract price exceeds the utility's avoided cost.

3 For non-QF wholesale power sales agreements, the Commission's current,  
4 long-standing standard of approval under AS 42.05.431(b) ensures that ratepayer interests are  
5 protected and has been effectively applied to a variety of firm and nonfirm power supply  
6 resources, including hydroelectric and wind power. Although there was an error in the citation,  
7 footnote 10 of TA 335-8 correctly stated that standard: "The standard for approval of a power  
8 sales contract is that the rates are just and reasonable, that the load forecasts justify the need for  
9 the contract, and that the contract is the most feasible means of meeting the forecasted load."  
10 That quote is from Order No. U-92-11(6) at 11 ("*AIDEA/GVEA*") (citing AS 42.05.381,  
11 AS 42.05.431(b), and 3 AAC 52.470(d)) (Sep. 3, 1992). In *AIDEA/GVEA*, the Commission  
12 approved a long term power purchase agreement under which GVEA agreed to purchase firm  
13 power from a clean coal technology power plant. *Id.*

14  
15  
16 When applying that standard to power purchase agreements with renewable  
17 energy suppliers, such as hydroelectric and wind power, the Commission has relied on whether  
18 the contract price is lower than avoided cost to ensure that ratepayers are not adversely affected.  
19 In Order No. U-97-191(1), Appendix (Staff Memorandum<sup>10</sup>) at 6 (Dec. 15, 1997) ("*Goat Lake*"),  
20 the Commission applied the same standard referenced in *AIDEA/GVEA* when reviewing a long  
21 term power purchase agreement in which two regulated utilities, Alaska Power Company and  
22 Haines Light & Power Company, Inc., agreed to purchase firm hydroelectric power from Goat  
23 Lake Hydro Inc. Notably, in *Goat Lake*, the contract price was expressly set to be equal to (no  
24

25 <sup>10</sup> Staff's memorandum was adopted as the Commission's findings of fact and conclusions of  
26 law. *Goat Lake* at 7.

1 greater than) each of the purchasing utilities' avoided cost to ensure that "no retail rates will be  
2 affected as a result of the PSA . . . ." *Id.*, Appendix at 8.

3 More recently, in 2007 and 2011, the Commission relied on avoided cost when  
4 reviewing a power purchase agreement (and a pricing amendment) under which a regulated  
5 utility, TDX Sand Point Generating, Inc., agreed to purchase nonfirm, intermittent wind energy  
6 from Aleutian Wind Energy LLC. *See* Letter Order No. L0700174, TA 191-230 (May 21, 2007)  
7 and Tariff Action Memorandum ("TAM") (May 16, 2007) ("*TDX-1*"); Letter Order No.  
8 L1100078, TA 213-230 (Mar. 11, 2011) and TAM (Mar. 10, 2011) ("*TDX-2*"). In *TDX-1*, the  
9 seller was a QF, and the power purchase agreement was approved based on a comparison of the  
10 contract rate with the utility's avoided cost "to make sure the customer is not disadvantaged by  
11 the special contract." *TDX-1*, TAM at 4. In that case, the contract price was less than half of the  
12 utility's avoided cost of diesel generation. *Id.* at 6.

13  
14 In *TDX-2*, the seller appeared to no longer be a QF because it had added a  
15 low-load diesel generator to its wind project to help regulate the wind unit's output. *See* *TDX-2*,  
16 TAM at 3. In addition, the contract price was increased for changed costs. The amended power  
17 purchase agreement was approved based on findings that (1) it was "just and reasonable"  
18 because the contract price was less than half of the purchasing utility's avoided cost; and (2) it  
19 was "in the public interest" because the purchasing utility's customers "will experience a  
20 decrease in rates as a result of this PPA, as well as a reduction in diesel emissions." *Id.* at 8  
21 (emphasis added).  
22

23  
24 The precedent discussed above shows that the Commission already has  
25 well-established standards for reviewing wholesale power purchase agreements under  
26

1 AS 42.05.431(b). In addition, those standards have been fairly and effectively applied to energy  
2 purchases from renewable energy sellers, including hydroelectric and wind power facilities, and  
3 in ways that properly focus on the purchasing utility's avoided cost and protecting the utility's  
4 customers from adverse rate impacts. There is no need for the Commission to adopt a new,  
5 lower standard of approval in this case.

6 **c. Non-discrimination and avoided cost.**

7 Other than distinguishing between QF sellers and non-QF sellers, the Commission  
8 should apply its power sales agreement standards consistently and without undue preference for  
9 a particular project. The only preference that the Commission should give, because it is required  
10 under federal law, is enforcing a QF's right to require a utility to pay a contract price that equals  
11 (but does not exceed) its avoided cost. For agreements that do not involve a QF, such as the FIW  
12 PPA, the Commission should apply the same standards that it applied to the agreements in the  
13 cases described above. In so doing, the Commission should focus primarily on whether the  
14 contract price is lower than the utility's avoided cost, as the Commission did in *Goat Lake*,  
15 *TDX-1*, and *TDX-2*. To apply a lower standard in this case would be discriminatory, would fail  
16 to adequately protect ratepayers, and would negatively impact power purchase agreements for  
17 other utilities in the future.  
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1                   3.     Avoided cost should be based on actual costs or, at a minimum, on  
2                   reasonably projected long-run costs, and must account for all costs of  
3                   integration and regulation. Possible future carbon tax legislation and  
4                   possible future renewable energy credit markets are too speculative  
5                   for reasonable inclusion in avoided cost calculations.

6                   a.     Chugach's own data show that the PPA price is very likely to  
7                   substantially exceed avoided cost.

8                   Although it does not expressly analyze "avoided cost," TA 335-8 in effect  
9                   provides the following (although the underlying calculations are not expressly stated in the  
10                  filing):

11                  (1)     On an annual nominal basis, the PPA price will exceed Chugach's avoided  
12                  cost until 2023, based on the RIRP<sup>11</sup> gas price forecast. TA 335-8, Appendix G at 2. If Chugach  
13                  increases the RIRP gas price forecast, the PPA price will exceed avoided cost until 2020. *Id.* at  
14                  3. For the MOA, it will incur rate increases of \$90,000 to \$99,000 per year beginning in the first  
15                  year of the PPA. After the cross-over dates, the PPA price will be less than avoided cost, based  
16                  on Chugach projections. *Id.* at 2 and 3. These results assume that purchases from FIW will  
17                  allow Chugach to avoid \$18.6 million in future carbon taxes and obtain \$1.1 million in  
18                  renewable energy credit ("REC") benefits. *Id.* Carbon taxes and marketable RECs do not  
19                  currently exist and there is no reliable way to calculate the avoided cost impact of these currently  
20                  nonexistent factors.

21                  (2)     On a total net present value ("NPV") basis over the term of the PPA, the  
22                  PPA will result in a net cost increase to Chugach of \$7.7 million, based on the RIRP gas price  
23                  forecast. *Id.* at 2. Using Chugach's increased RIRP forecast, the PPA will result in a total NPV  
24

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25                  <sup>11</sup> Alaska Railbelt Regional Integrated Resource Plan Study, Final Report (Feb. 2010), by Black  
26                  & Veatch ("RIRP").

1 savings of \$3.0 million. *Id.* at 3. Again, both of those estimates assume \$19.7 million of future  
2 avoided carbon taxes and REC benefits.

3 (3) Without the assumed future carbon taxes and REC benefits, the PPA will  
4 result in a total NPV cost increase of \$16.6 million<sup>12</sup> under the RIRP gas price forecast and a  
5 total NPV cost increase of \$5.9 million<sup>13</sup> under Chugach's increased RIRP forecast. *See* at 2 and  
6 3.

7 In summary, even based on Chugach's own assumptions, some of which ML&P  
8 disputes, the FIW PPA contract price will exceed avoided cost for the first seven to 10 years. In  
9 addition, over the term of the contract, the PPA will result in a total NPV cost increase of  
10 \$5.9 million to \$16.6 million before considering possible future effects from carbon taxes and  
11 RECs. The only way the PPA will provide any total NPV savings for Chugach's customers is if  
12 one assumes a high gas price forecast and substantial cost savings from future carbon taxes and  
13 RECs, and even then, the total NPV savings are only \$3.0 million over 25 years. Moreover, in  
14 order for Chugach's customers to obtain these cost savings or cost increases, it is necessary for  
15 FIW to be subsidized with \$43.7 million in federal and state grants.  
16  
17

18 Thus, even based on Chugach's own data, from an avoided cost perspective, it  
19 appears that the FIW PPA will likely result in Chugach's ratepayers paying significantly greater  
20 rates than otherwise would be necessary using Chugach's avoided cost. That is certainly true for  
21 the first seven to 10 years of the PPA. By contrast, in *TDX-1* and *TDX-2*, the wind power PPA's  
22 produced significant avoided cost benefits from the beginning, with the contract price being less  
23

24 <sup>12</sup> \$77,197,260 - \$60,611,058. Appendix G at 2.

25 <sup>13</sup> \$77,197,260 - \$71,346,144. Appendix G at 3.



1 than 50 percent of the utility's avoided cost of diesel generation. Also, in those cases, there were  
2 no speculative assumptions about avoided costs associated with future carbon taxes and RECs.

3 **b. Chugach's avoided cost assumptions and estimates are**  
4 **unreasonable, speculative, and biased.**

5 At present, it is known that Chugach's avoided cost of energy for delivered  
6 nonfirm energy purchases is 6.2 cents per kWh (less the cost of integration and transmission).  
7 See Chugach Tariff Sheet No. 97; Chugach TA 328-8 at 3 (Mar. 29, 2011). The FIW PPA net<sup>14</sup>  
8 contract price is 9.7 cents per kWh (plus the cost of integration and transmission). Comparing  
9 these two known amounts, it is easy to see that the FIW PPA provides a price that significantly  
10 exceeds Chugach's current avoided cost. Due to the actual cost of integration, the total  
11 difference is much greater than the 3.5 cents per kWh (56 percent) difference indicated by  
12 subtraction of these two numbers.

13  
14 TA 335-8 attempts to justify the PPA by looking beyond current avoided cost and  
15 estimating the costs and benefits of the PPA over the 25-year term. That is appropriate.  
16 However, ML&P seriously disagrees with many of the primary assumptions used to calculate  
17 avoided costs in future years and believes that those assumptions significantly bias the analysis  
18 toward overstating avoided cost. Because ML&P may be called upon to estimate its own  
19 avoided costs for similar transactions in the future, ML&P would like to explain its position  
20 regarding those issues for the record.  
21

22  
23  
24  
25 <sup>14</sup> 10.785 cents per kWh (\$107.85 per MWh) contract price, less 1.085 cent per kWh (\$10.85 per  
26 MWh) "integration charge." TA 335-8 at 16.

(1) Gas price forecast.

TA 335-8 uses two gas price forecasts. The first is a Black & Veatch forecast from the February 2010 RIRP. As noted earlier, using that forecast results in total NPV cost increases from the FIW PPA, even with the assumptions regarding future carbon taxes and RECs. ML&P also notes that gas prices in the RIRP forecast are very similar to the gas price projections that Chugach relied on in its avoided cost update filing that it recently submitted to the Commission. See TA 328-8 at 3 (projecting gas prices of \$6.75 per MCF to \$8.74 per MCF between 2013 and 2021) (Mar. 29, 2011).

The second forecast used in TA 335-8 is much higher than the RIRP forecast. That forecast projects gas prices of \$7.12 per MCF to \$13.45 per MCF between 2013 and 2021. See Appendix F at 2. Chugach does not explain why its gas price projection is so much higher in TA 335-8 than it was when it submitted TA 328-8. However, it is clear that TA 335-8's use of the higher gas price forecast is the key assumption driving the results of the cost/benefit analysis in TA 335-8.

Certainly, forecasting future natural gas prices is an imprecise science. However, based on ML&P's knowledge and experience as a Cook Inlet gas producer and significant gas user, ML&P respectfully submits that the RIRP forecast and certainly Chugach's new adjusted RIRP forecast are biased in favor of high gas prices. Among other reasons, it is important to note the following events that have occurred since the RIRP forecast was completed:

(1) The Alaska State Legislature unanimously passed the Cook Inlet Recovery Act ("CIRA"), HB 280, Ch. 16 SLA 2010, which became effective July 9, 2010. Among other

1 things, that legislation provided significant tax credits to incentivize natural gas exploration,  
2 production, and storage in Cook Inlet.

3 (2) Development of CINGSA's natural gas storage project. That project will  
4 significantly alleviate current natural gas deliverability problems and allow Chugach (as well as  
5 ML&P and ENSTAR Natural Gas Company ("ENSTAR")) to purchase gas at prices that are  
6 lower than would otherwise be available without the storage project.

7 (3) Significant increases in Cook Inlet natural gas lease bids received in 2011,  
8 valued at \$11 million (after CIRA went into effect).

9 (4) State of Alaska, Department of Natural Resources, Cook Inlet Natural Gas  
10 Production Cost Study (June 2011).

11 (5) United States Geological Survey, Assessment of Undiscovered Oil and  
12 Gas Resources of the Cook Inlet Region, 2011 (June 2011).

13 (6) Alaska Gasline Development Corp., North Slope-Southcentral Alaska  
14 Natural Gas Pipeline Report (July 2011). The report determined that a state-owned natural gas  
15 pipeline could make North Slope natural gas available to Anchorage utilities in 2019 at an  
16 estimated cost of \$9.63 per MCF.

17 These recent developments tend to support the conclusion that the RIRP gas price  
18 forecast may be too high. In addition, they certainly cast significant doubt on the reasonableness  
19 of Chugach's recent, substantial upward adjustment to the RIRP forecast, which appeared for the  
20 first time in TA 335-8.

(2) Integration costs.

TA 335-8 does not quantify or explain how much additional cost it is projecting for integration and regulation. There is reference to FIW paying Chugach an integration charge of 1.085 cents per kWh, but that is certainly not adequate to cover all of the costs of integration. Appendix G indicates "Gas Balancing Cost" of \$126,536 per year, but that amount is the same for both gas price scenarios. Thus, it clearly does not account for fuel-cost related regulation costs. It is possible that Chugach is accounting for part of those costs through the net heat rate it assumes for the fuel cost savings associated with energy purchases from FIW. See TA 335-8 at 10. There, Chugach states that FIW will displace 48,000 MWh<sup>15</sup> (the entire projected output of FIW) of gas generation per year. Next, Chugach states that energy "equates to 300,000 Mcf per year." The implied heat rate from those numbers is 6.186 MCF per MWh. However, ML&P does not believe that heat rate accurately reflects all of the Chugach costs of regulation. For example, it does not appear to account for the additional cost associated with using simple-cycle generation, as opposed to combined-cycle generation, to respond to FIW variability. That additional cost, alone, could amount to over \$25 per MWh (2.5 cents per kWh).<sup>16</sup> In addition,

<sup>15</sup> 48,565 MWh is the "P50 production level." TA 335-8 at 15. All of the cost/benefit analyses in TA 335-8 assume that level of output. ML&P notes that in the PPA, FIW does not guarantee that level of output. Instead, FIW's "guarantee" is limited to producing 150 percent of the P50 level over a 24-month period, which equates to only 36,424 MWh per year (48,565 x 150% / 2 years).

<sup>16</sup> As an approximate example, if the spinning reserve required to backup FIW generation were provided with 100 percent simple-cycle generation, FIW's assumed 30 percent capacity factor would imply 2.33 MWh of simple-cycle generation for every MWh of FIW output (70 percent / 30 percent x 1 MWh). If the simple-cycle generation requires 1.5 MCF more gas per MWh than combined-cycle generation, that would imply an additional 3.5 MCF of simple-cycle generation gas required for each MWh of FIW output. At \$8.00 per MCF, that would amount to additional gas costs of \$28 per MWh (2.8 cents per kWh), or \$1.344 million per year (\$28 x 48,000

1 heat rate assumptions do not account for the costs of increased O&M on the thermal generation  
2 units or the costs of failing to meet gas nominations. Finally, heat rate assumptions do not  
3 account for the costs of reduced efficiency or increased O&M that will be incurred by ML&P  
4 associated with FIW's variability or Chugach's use of jointly-owned generation for regulation.

5 Based on the data provided in TA 335-8, ML&P believes that the cost/benefit  
6 analysis in the filing understates the cost of integration and regulation, but there is inadequate  
7 data to quantify that understatement. As stated earlier, the FIW PPA should not be approved  
8 without a clear, verifiable explanation of how Chugach will integrate FIW and what the costs of  
9 that integration will be, both to Chugach and other interconnected Railbelt utilities.  
10

11 (3) Carbon taxes and RECs.

12 As stated earlier, even assuming Chugach's gas price forecasts and understated  
13 integration costs, the FIW PPA would result in significant total NPV cost increases, not cost  
14 savings, without the \$19.6 million of cost savings that Chugach assumes for avoidance of future  
15 carbon taxes and REC benefits. TA 335-8 does not provide sufficient data for ML&P to analyze  
16 the assumptions and calculations of these savings. More fundamentally, however, future carbon  
17 taxes and RECs are far too speculative, unknown, and unmeasurable to be included in utility  
18 avoided cost analysis, particularly when those factors alone can mean the difference between  
19 total NPV savings of \$3.0 million and a NPV cost increase of \$5.9 million or the difference  
20 between NPV cost increases of \$7.7 million and \$16.6 million. See Section II.D.3.a above..  
21

22 As the Commission knows, no carbon tax currently exists and has never existed.  
23 In addition, even if Congress or the Environmental Protection Agency ("EPA") someday  
24 MWh/year). Of course, if one uses Chugach's higher forecasted gas prices relied upon in  
25 TA 335-8, the additional cost calculated above would be substantially greater.  
26

1 implemented a carbon tax, there is no reason to simply assume that it would apply to an Alaska  
2 nonprofit electric cooperative. Similarly, there is currently no market for RECs and no reason to  
3 simply assume that one will exist that Chugach can access to offset the increased costs of  
4 purchasing FIW for 25 years.

5           Given the extreme uncertainty regarding these two factors, ML&P suspects that  
6 they are included in TA 335-8 for one of two reasons. The first is simply as a means of  
7 achieving a cost/benefit ratio that shows a positive (although minutely positive) result. The  
8 second is to attempt to indirectly reflect claimed environmental benefits associated with FIW  
9 energy allowing Chugach to claim reductions in greenhouse gas emissions. For reasons  
10 discussed below, neither justifies including such speculative cost estimates in a serious avoided  
11 cost analysis.  
12

13           In addition, whether the FIW PPA, as opposed to high-efficiency natural gas  
14 generation (and possibly new hydroelectric resources in the future), would produce significant  
15 net environmental benefits is far from certain. Without getting into too much detail on this  
16 subject, the following points should be considered: First, in contrast to wind power that  
17 displaces coal or diesel generation, FIW power will displace a minute portion of Chugach's  
18 already-existing and already-spinning natural gas-fired or hydroelectric output. Of course,  
19 displacing hydroelectric generation does not reduce any greenhouse gas emissions, and carbon  
20 emissions from natural gas are the lowest of any fossil fuel used for electric generation.<sup>17</sup>  
21  
22 Second, any accounting of emissions savings that could result from displacing natural gas  
23

24  
25 <sup>17</sup> When Chugach and ML&P's new SPP plant begins operation in late 2013 or early 2014, each  
26 kWh of energy generated from that facility will be produced using 25 percent less natural gas  
than the units that SPP will displace.

1 generation must be reduced by the increased emissions that would result from running  
2 Chugach's (and others') remaining natural gas generation resources in a less efficient, more  
3 erratic manner, with the frequent ramp-ups and ramp-downs that following FIW's intermittent  
4 output would require. Third, a serious net emissions analysis would have to account for the  
5 incremental greenhouse gas emissions that will result from manufacturing, transporting,  
6 installing, operating, and maintaining the FIW project. But for the FIW PPA, those greenhouse  
7 gas emissions would be avoided and, thus, they would need to be subtracted from the emissions  
8 "savings" associated with Chugach producing slightly less natural gas-fired generation over the  
9 term of the contract.  
10

11 Depending on the future course of environmental legislation and technological  
12 advancement, carbon taxes and RECs may become a relevant factor in utility regulation at some  
13 point in the future. However, currently there simply is not sufficient data to attempt to include  
14 estimated future carbon taxes or REC benefits in a serious, credible avoided cost analysis.  
15 Attempting to do so in TA 335-8 merely serves to bias the results significantly in favor of  
16 overestimating avoided cost and underestimating the adverse impacts of the FIW PPA on  
17 customer rates. And in practicality, allowing such speculative estimates to tip the scale in favor  
18 of approving the FIW will result in the MOA paying substantially increased electric service bills  
19 to Chugach, with such increases beginning at \$90,000 to \$99,000 per year.  
20

21 (4) NPV discount rate.  
22

23 TA 335-8 does not disclose or justify the discount rate that is used in the  
24 cost/benefit analyses reflected on pages 2 and 3 of Appendix G. The discount rate used is critical  
25 for the results of the FIW NPV analysis because the costs and savings occur at different times  
26



1 during the 25-year analysis period. In large part, TA 335-8 argues that ratepayer cost increases  
2 during the first seven to 10 years of the term are worth the cost savings that will occur in the last  
3 15 years of the term. Using a discount rate that is too low will overvalue the future year savings  
4 and bias the analysis to overstate total NPV savings. Based on the data provided in TA 335-8,  
5 ML&P was not able to confirm that one discount rate was used in the two NPV analyses shown  
6 in Appendix G. Instead, based on the limited data provided, it appears that the two analyses used  
7 different discount rates (which, if true, would be inappropriate), and that the discount rates range  
8 from 2 percent to 5 percent. If that is correct, ML&P believes that the discount rates are too low  
9 and bias the analysis in favor of overstating NPV savings. This issue should be clearly explained  
10 and evaluated before putting any reliance on TA 335-8's cost/benefit calculations.  
11

12 **4. While rate stability and generation source diversification can be**  
13 **beneficial, they are not ends in and of themselves. Claimed ratepayer**  
14 **benefits from rate stability and generation source diversification for a**  
15 **given project should be substantiated, quantified, and weighed against**  
16 **the costs.**

17 TA 335-8 cites rate stability and generation diversification as significant  
18 justifications for approval of the FIW PPA. In general, ML&P acknowledges that rate stability  
19 and generation source diversification can be beneficial to ratepayers, but it depends on the cost.

20 For example, there is little benefit in a fixed rate if the rate is higher than the  
21 utility's avoided cost. In the instant case, the PPA's fixed rate merely means that Chugach's  
22 customers will pay higher rates in the early years with the hope that rate savings in the later years  
23 will be significant enough to justify the early year rates. Therefore, whether the fixed rate  
24 provides net benefits to Chugach's ratepayers depends on the total NPV results over the term of  
25 the PPA. As was discussed earlier, it is likely that the PPA's contract price will, on balance,

1 produce total NPV cost and rate increases, not savings. In addition, there is at least some risk for  
2 ratepayers associated with fixed price contracts with an unregulated power supplier, resulting  
3 from the fact that the supplier's profits are front-end loaded, whereas the ratepayers' benefits  
4 from FIW purchases occur only in the later years of the contract. This presents a risk that the  
5 supplier might fail financially later in the PPA term, as O&M and repair costs increase. This risk  
6 is even greater when the seller is, like FIW, an unregulated utility, a special purpose entity, and  
7 capitalized with non-recourse financing. See TA 335-8 at 13 and PPA § 2.3(b).

9 With regard to generation source diversification, the main potential ratepayer  
10 benefits are cost reduction and risk reduction. Again, however, it is not enough to simply  
11 assume that the diversification offered by the PPA will produce significant net benefits. Any  
12 benefits from generation source diversification must be evaluated and compared with the costs of  
13 obtaining those benefits. The cost savings from Chugach purchasing FIW energy, instead of  
14 generating additional energy from existing thermal or hydroelectric units, are addressed in the  
15 avoided cost analysis. As discussed earlier, the total NPV impact of the PPA is likely to be a  
16 cost increase, not a cost savings. With respect to risk reduction, the amount of natural gas  
17 generation that FIW will displace is, relatively speaking, very, very small. It will not allow  
18 Chugach to retire any thermal generation units. Due to FIW's intermittent nature, it will also not  
19 allow Chugach to even avoid starting an existing unit or reduce its natural gas nominations. On  
20 the margin, 48,000 MWh per year of FIW energy will not reduce Chugach's risk of having  
21 inadequate natural gas supply or deliverability. Related to this, while it might be tempting to  
22 simply assert that FIW energy will help conserve scarce Cook Inlet natural gas, the fact is that  
23 even using Chugach's unreasonably optimistic estimate of displacing 300,000 MCF of gas per  
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1 year, that level of displacement is, in fact, de minimis compared to Chugach's total annual gas  
2 consumption of 24,000,000 MCF (24 BCF). The value of this displacement further pales when  
3 compared to the approximately 66 BCF of natural gas currently consumed by the local Cook  
4 Inlet utilities on their ratepayers' behalf. Finally, the small net amount of FIW's intermittent  
5 natural gas displacement will not in any way delay the need for importation of liquefied natural  
6 gas ("LNG") into Cook Inlet.

- 8 5. The possibility of FIW's acquisition of federal grant funds should not  
9 lower the standard of approval or level of scrutiny that the  
10 Commission applies to protect the ratepayers of the purchasing utility  
11 and those of other interconnected utilities, particularly for a project  
that will yield negative or minimal ratepayer savings and  
environmental benefits.

12 While TA 335-8 claims many benefits of the FIW PPA, Chugach candidly  
13 acknowledges that the principal reason TA 335-8 was filed was to help FIW obtain an  
14 \$18.7 million federal cash-in-lieu-of-ITC grant ("Section 1603 Grant") for the project: "The  
15 timing of Chugach's decision to proceed with the PPA at this time (and the need for expedited  
16 Commission approval) is driven by a federal grant that will not be available to the development  
17 of the Project if construction does not start in 2011." TA 335-8 at 4. If the PPA provided  
18 meaningful rate savings to ratepayers, ML&P would agree that seeking to obtain grant funds to  
19 help facilitate the project would be a reasonable tactic. However, the possibility of FIW's  
20 acquisition of grant funds should not obscure or bias the fundamental analysis of whether the  
21 rates, terms, and conditions of the PPA itself are just and reasonable, are the most feasible means  
22 of satisfying Chugach's forecasted load, and provide rate savings for ratepayers.

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25 As an initial matter, the following facts regarding the potential grant funds should  
26 be recognized. First, ML&P understands that the key deadline for FIW to qualify for the

1 Section 1603 Grant is not that construction start in 2011, but that the plant be placed in service  
2 by December 31, 2012. Cook Inlet Region, Inc. ("CIRI")/FIW has represented that it has already  
3 completed enough initial work on its project to satisfy the statutory requirement that construction  
4 start by December 31, 2011.

5  
6 Second, the \$25 million State grant for transmission facilities for the FIW project  
7 does not have any timeline for the beginning of construction or when the plant is placed in  
8 service.

9  
10 Third, it should be recognized that the total \$43.7 million of federal and state  
11 grant funding that FIW is pursuing amounts to approximately \$2,500 per kW of installed wind  
12 power capacity (\$43.7 million / 17,600 kW). That is the sought-after subsidy for nonfirm,  
13 intermittent generation that has a projected capacity factor of only 30 percent. At \$2,500 per  
14 kW, those subsidies would be enough to pay the entire installed cost of a state-of-the art,  
15 high-efficiency combined-cycle natural gas generation unit. Such a unit would be a firm,  
16 non-intermittent resource, would require no additional regulation by other units, would require  
17 no payment from ratepayers other than for fuel and O&M costs, and would likely save Chugach  
18 more gas overall than the FIW project, even though such a unit operates using natural gas. More  
19 specifically regarding the issue at hand, ML&P's point is that the FIW project is dependent upon  
20 an extraordinarily large amount of tax-payer funded grants for a PPA that, even with the  
21 sought-after grant funding, will require Chugach's customers to incur increased rates and most  
22 likely increased total NPV costs of between \$5.9 million and \$16.6 million. As tempting as  
23 government grant subsidies are, ML&P respectfully submits that Chugach's customers may not  
24 be able to afford those subsidies.  
25

1           E.     TA 335-8 should be suspended for formal investigation.

2           If approved, the PPA will require Chugach to pay \$117.8 million to FIW over a  
3 25-year term, plus \$13.9 million in transmission, labor, and "gas balancing" costs, or  
4 approximately \$5.3 million per year. Appendix G at 2-3. In addition, ML&P believes that there  
5 will be more integration and regulation costs that have not been properly accounted for in  
6 Appendix G, both for Chugach's customers and those of ML&P and other generating utilities in  
7 the RIES. All of that is required in order to allow Chugach to purchase wind power output that,  
8 under the best of circumstances, will supply only four percent of Chugach's electric  
9 requirements. TA 335-8 at 10. Moreover, Chugach's own data, which ML&P believes are very  
10 optimistic, show that the PPA will very likely result in significant total NPV cost increases over  
11 the term as compared to Chugach meeting its requirements with existing resources. Under these  
12 circumstances, ML&P believes that there are serious and substantial issues to be resolved, which  
13 requires that TA 335-8 be suspended for formal investigation.

14           TA 335-8 requests that the Commission issue its decision in this matter by  
15 September 15, 2011. ML&P would not presume to decide whether the Commission's schedule  
16 would allow for a thorough, thoughtful analysis within that short period of time. However,  
17 ML&P would observe that it recently took the Commission six months after filing to review (on  
18 an extremely expedited basis) and issue a final order regarding CINGSA's certificate of public  
19 convenience and necessity and tariff. In that case, the issue of cost savings for end user  
20 customers was not in dispute, as it clearly is in the instant case. ML&P's only recommendation  
21 in this regard is that the Commission take the time that it needs to thoroughly review the PPA,  
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1 the assertions and evidence offered in support of the PPA, and the impacts that the PPA will have  
2 on ratepayers, including those of ML&P and other generating utilities.

### 3 **III. Conclusion.**

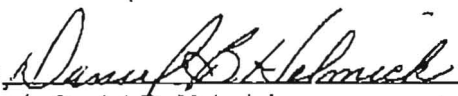
4 Lest its comments be misinterpreted, ML&P would like to again clarify that it  
5 supports cost-effective renewable energy projects as a legitimate power supply option for  
6 Railbelt utilities. ML&P has devoted significant time and resources to evaluating the potential  
7 for the FIW project to assist ML&P in its mission of providing ML&P customers with safe,  
8 reliable, and cost-effective electric utility service. However, ML&P has, after expending  
9 considerable resources and effort analyzing the FIW project, come to the conclusion that the  
10 project is simply not yet capable of providing a power supply under rates, terms, and conditions  
11 that advance the interests of ML&P's customers. This is particularly so given the opportunities  
12 presented by other renewable energy projects that are on the horizon. Those opportunities are  
13 likely to be larger than the FIW project and have capacity factors far superior to that of the FIW  
14 project, resulting in lower-cost and more useful renewable energy resources than the FIW  
15 project.  
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18 Apparently, Chugach has a different perspective regarding the FIW project's  
19 ability to provide benefits to Chugach's customers. ML&P respects Chugach's position and  
20 ordinarily would not submit comments regarding a Chugach PPA to which ML&P is not a party.  
21 However, as a result of interconnected operation of the RIES, the failure of the PPA to  
22 adequately prevent adverse impacts on ML&P and its customers, and the likelihood that this case  
23 will establish Commission precedent and policy in one way or another, ML&P was compelled to  
24 offer its comments for consideration by the Commission.  
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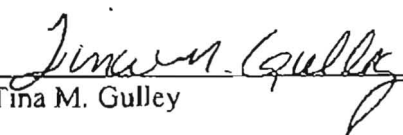
1 At a minimum, ML&P requests that the Commission carefully consider the  
2 interests of the ratepayers (Chugach's as well as those of ML&P and other RIES utilities) during  
3 its review of the FIW PPA. In this regard, ML&P requests that the Commission not approve the  
4 PPA until it resolves precisely how FIW energy will be integrated and regulated into the RIES  
5 and what the costs of that integration and regulation will be, both to Chugach as well as to  
6 ML&P and other utilities. In addition, the Commission should not approve the PPA unless it is  
7 subject to the conditions referenced in Section II.C above. Those conditions are critical to  
8 protecting the interests of non-party entities like ML&P and its customers from incurring costs  
9 and burdens that should be limited to Chugach and FIW.  
10

11 RESPECTFULLY SUBMITTED this 25th day of July 2011, at Anchorage,  
12 Alaska.  
13

14 THE MUNICIPALITY OF ANCHORAGE  
15 D/B/A MUNICIPAL LIGHT AND POWER  
16

16 By:   
17 Daniel B. Helmick  
18 Manager, Regulatory Affairs  
19

19 CERTIFICATE OF SERVICE  
20 I certify that a copy of the foregoing document  
21 were served by U.S. Mail on the persons named  
22 below on the 25th day of July, 2011:  
23

22 By:   
23 Tina M. Gulley  
24

24 Bradley W. Evans  
25 Chief Executive Officer  
26 Chugach Electric Association, Inc.  
27 P.O. Box 196300  
28 Anchorage, Alaska 99519-6300

27 COMMENTS OF MUNICIPAL LIGHT & POWER  
28 -Tariff Advice Letter No. TA335-8  
July 25, 2011  
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(s/MLPCEA-FIWP(7-25-11))

