

Kirkwood Meadows Public Utility District Planning Committee REGULAR MEETING AGENDA

NOTICE IS HEREBY GIVEN that the Planning Committee of the Kirkwood Meadows Public Utility District has called a Regular Meeting of the Committee to be held on **Wednesday, May 15, 2024 at 3:00 PM** video/teleconference on Zoom at: " <https://us02web.zoom.us/j/83319776349>

HOW TO PARTICIPATE / OBSERVE THE MEETING:

Telephone: Call Zoom at (669) 900-6833 and enter Meeting ID# **833 1977 6349** followed by the pound (#) key.

Computer: Follow this link to join the meeting automatically:
<https://us02web.zoom.us/j/83319776349>

Mobile: Open the Zoom mobile app on a smartphone and enter Meeting ID# **833 1977 6349**

ACCESSIBILITY INFORMATION:

Committee meetings are accessible to people with disabilities and others who need assistance. Individuals who need special assistance or a disability-related modification or accommodation (including auxiliary aids or services) to observe and/or participate in this meeting and access meeting-related materials should contact the District, at least 48-hours before the meeting at (209) 258-4444. Advanced notification will enable the District to swiftly resolve such requests and ensure accessibility.

#

The Agenda for this Regular Meeting is:

- 1) **Large Propane Users Fuel Switching.** Discussion & possible action.
- 2) Next Meeting/Staff Recommendation: *Wednesday, June 19, 2024 - 3:00pm.*

The Kirkwood Meadows Public Utility District is an equal opportunity provider and employer.

In compliance with the Americans with Disabilities Act, if you are a disabled person and you need a disability-related modification or accommodation to participate in this meeting, please contact the District at (209) 258-4444, by email to info@kmpud.com. Requests must be made as early as possible, and at least two business days before the meeting.

Large Propane Users Fuel Switching

Background:

The Planning Committee has been discussing fuel switching as a component of the District's strategic goal. In January, the Planning Committee reached out to the largest propane users and invited their participation in the March Planning Committee meeting to discuss issues and ideas surrounding fuel switching at their facilities.

As a follow up to this meeting, the Planning Committee created a list of questions and requested feedback so that the committee can better understand the opportunities and challenges that exist for each customer.

Customer Feedback:

The following information was solicited:

1. Please describe the type of facility (boiler, furnace, etc.) associated with these accounts.
2. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
3. Are you planning to update your heating systems within the next 5 years?
4. Have you analyzed replacement options and replacement costs for your equipment?
Please share any quotes for electrification you may have received and barriers to implementation.
5. Are you considering adding cooling systems to your facilities?
6. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)

A summary of the feedback, along with a copy of the emails from customers that contain additional comments, is attached.

Prepared By:

Erik Christeson

	Kirkwood Mountain Resort 12959	Kirkwood Mountain Resort 13001	Kirkwood Mountain Resort 16491	Kirkwood Mountain Resort 16742	Kirkwood Mountain Resort 17010	Kirkwood Mountain Resort 17121	Kirkwood Mountain Resort 17143	The Meadows 16466	Meadowstone 17390 17410	Mountain Club 17098	The Lodge 16955 13525
Type of Facility	Boiler (2)	Boiler (2)	Furnace (5)	Furnaces Kitchen Equip. Water Heaters	Snowmelt Boiler	Boilers (4) Water Heaters (2)	Furnaces (11) Kitchen Equip.	Boiler (4)	High and Low efficiency boilers	Awaiting Response	Boiler
Age	<1 year	<1 year	<3 years	Furnaces: 7 years Kitchen Equip: 5-17 years	26 years	Boilers: <1 year (2) 3 years (2) Water Heaters: 3 yrs	Furnaces: 1 year (2) 24 years (9) Kitchen Equip: varies	35 years	Varies	Awaiting Response	Unknown
Remaining Useful Life	15 years	15 years	12 years	Furnaces: soon Kitchen Equip: Unknown	Unknown	Boilers: 12-15 years Water Heaters: 12 yrs	Furnaces: soon Kitchen Equip: Unknown	0 years	0-30 years	Awaiting Response	Many years
Capacity	155,000 BTU each	155,000 BTU each	400,000 BTU (1) 150,000 BTU (2) 75,000 BTU (3)	Unknown	2,300,000 BTU	Boilers: 155,000 BTU each Water Heaters: ~150,000 BTU each	Furnaces: 100,000 BTU each	Unknown	Unknown	Awaiting Response	Unknown
Future Plans (Heat)	None	None	None	Electric options may be considered	None	Electric options may be considered	Electric options will definitely be considered	Unknown	Considering HE propane replacement	Awaiting Response	None
Electrification Quotes	None	None	None	None	None	None	None	None	None	Awaiting Response	None
Barriers to Implementation	N/A	N/A	N/A	Unknown	N/A	N/A	N/A	Unknown	Sufficient electric capacity. High temperature requirements for existing baseboard system. Outside mounting location. Converting existing glycol system.	Awaiting Response	N/A
Future Plans (Cooling)	None	None	None	None	None	None	None	None	None	Awaiting Response	None
Incentives	Engineering support Equipment selection	Engineering support Equipment selection	Equipment selection	Engineering support Equipment selection	Engineering support Equipment selection	Engineering support Equipment selection	Unknown	Reduction in Electric Rate	Yes - see email 3	Awaiting Response	N/A
Additional Comments	Yes - see email 1	Yes - see email 1	Yes - see email 1	Yes - see email 1	Yes - see email 1	Yes - see email 1	Yes - see email 1	Yes - see email 2	Yes - see email 3	No - See email 4	No - see email 5

Erik Christeson

From: Sean Groover <Sgroover@vailresorts.com>
Sent: Monday, April 15, 2024 10:55 AM
To: Erik Christeson
Subject: RE: Propane fuel switching

From: Sean Groover
Sent: Monday, April 15, 2024 10:25 AM
To: echisteson@kmpud.com
Cc: Gregory Kiskinen <GKiskinen@vailresorts.com>
Subject: Propane fuel switching

Erik, I have the following info for the accounts you mentioned. A couple included electrical, but I stayed with the propane on those accounts.

12959:

Renwick A boiler room. 2 boilers.

Installed last summer, under one year old. Estimated life 15 years 155K BTUH each

No plan to update soon

No options for electrification at this time

Engineering and equipment selection would be beneficial.

13001:

Renwick B boiler room. Same info as above.

16491:

Vehicle Maintenance shop. Furnaces.

5 furnaces are less that 3 years old. I have the replacement for the final heater in my shop. Estimated 15 years of life for each new one.

1 at 400k btuh, 2 at 150k, 3 at 75k

No electrical options at this time.

Equipment selection would be beneficial.

16742:

Timber Creek/snowshoe thompsons. Furnaces, kitchen equipment, hot water heaters

Furnaces: 2016/2017 end of life is near. Looking at replacement/upgrade with tent upgrade soon.

Kitchen equipment: Varies from 5-17 years old. Upgraded periodically.

Electric options may be considered with operational upgrade.

Engineering and equipment selection would help.

I can get BTUs to you when I return from FTO.

17010:

Ice rink. I believe this would be for our snowmelt boiler. 2300K BTU

Age: @1998. Has had some upgrades, but original boiler.

Not sure how to estimate this one except replacing parts. Pumps look newer, but I don't have a date.

No electrical plan for this.

Engineering and equipment options would help.

17121:

Quad employee housing. Boilers and hot water heaters.

Boilers: 4 at 155k btu. 2 are new this season. 2 are 3 years old. Estimated 12-15 years of life.

Hot water heaters: varies, but 2 at about 150Kbtu. 3 years old. Est. 15 years of life.

No electrical plan now. Possibly replace hot water heaters with electric. Have discussed electric boilers, but the space is rather small for those units.

Engineering and equipment selection.

17143:

Red Cliffs lodge. Furnaces, Kitchen equipment

11 furnaces. 2 are new last year. The others are circa 1999-2000. Plan to replace in the next year or so if possible. 100k btu each.

Kitchen equipment varies.

Definitely can look at electric options for this building.

I do not have 15545 on any of my lists if you can help me with that account. Also, no plans for cooling systems at any location. Let me know what else I can get for you and I'll look into it when I return.

Thanks

Hi Greg,

This January, the KMPUD Planning Committee reached out to Vail as one of our largest users of propane to discuss with you the District's strategic goal to supply reliable power to meet the energy needs of our customers while minimizing the impact on our environment. Our drive to increase the use of electricity in lieu of propane in Kirkwood is a crucial path towards this goal. Account #'s 12959, 13001, 15545, 16491, 16742, 17010, 17121 & 17143

We appreciate your and other Vail staff's participation in our March Planning Committee meeting to discuss the issues surrounding fuel switching from propane to electricity, the engagement and sharing of ideas was a great start.

As a follow up to that meeting, the Planning Committee would appreciate it if you could answer the questions below and provide any further feedback. Please contact me with any further questions.

1. Please describe the type of facility (boiler, furnace, etc.) associated with these accounts.
2. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
3. Are you planning to update your heating systems within the next 5 years?
4. Have you analyzed replacement options and replacement costs for your equipment? Please share any quotes for electrification you may have received and barriers to implementation.
5. Are you considering adding cooling systems to your facilities?
6. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)

We look forward to your assistance and replies and will keep you informed of when the Planning Committee will next discuss this topic.

Sean Groover

Building Maintenance Manager
Kirkwood Mountain Resort
209.258.7305



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Erik Christeson

From: AT&T Yahoo Mail <taylor.art@sbcglobal.net>
Sent: Saturday, March 30, 2024 6:48 AM
To: Erik Christeson
Cc: Ron Devore; Sandy Rintoul; Colin Haubrich; Sarah Monnastes; Dave Waddle
Subject: Re: Propane Fuel Switching

1. Are you willing to share your propane usage data with the Planning Committee? **Yes**
2. Please describe the type of facility (boiler, furnace, etc.) associated with these accounts. **Four large boilers**
3. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment. **35 years, zero years left, unknown capacity at this time**
4. Are you planning to update your heating systems within the next 5 years? **Yes**
5. Have you analyzed replacement options and replacement costs for your equipment? Please share any quotes for electrification you may have received and barriers to implementation. **No**
6. Are you considering adding cooling systems to your facilities? **No**
7. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.) **Reduction in electric rate**

Our Board has the following questions for the PUD:

- Are electric boilers feasible for our current delivery system?
- Could we have 2 electric boilers and 2 back up (old) propane boilers?
- How much would rebates offset purchase and installation costs?
- Would the PUD give us a cost break on electricity to make the switch more palatable? Some calculations have electric costing 3X more than propane.
- If the new boilers last 40 years like the current ones, what is the future of propane?

On Tuesday, March 26, 2024 at 09:45:37 AM PDT, Erik Christeson <echristeson@kmpud.com> wrote:

Hi Art,

This January, the KMPUD Planning Committee reached out to The Meadows as one of our largest users of propane to discuss with you the District's strategic goal to supply reliable power to meet the energy needs of our customers while minimizing the impact on our environment. Our drive to increase the use of electricity in lieu of propane in Kirkwood is a crucial path towards this goal. Account # 16466

We appreciate your participation in our March Planning Committee meeting to discuss the issues surrounding fuel switching from propane to electricity, the engagement and sharing of ideas was a great start.

As a follow up to that meeting, the Planning Committee would appreciate it if you could answer the questions below and provide any further feedback. Please contact me with any further questions.

1. Are you willing to share your propane usage data with the Planning Committee?
2. Please describe the type of facility (boiler, furnace, etc.) associated with these accounts.
3. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
4. Are you planning to update your heating systems within the next 5 years?
5. Have you analyzed replacement options and replacement costs for your equipment? Please share any quotes for electrification you may have received and barriers to implementation.
6. Are you considering adding cooling systems to your facilities?
7. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)

We look forward to your assistance and replies and will keep you informed of when the Planning Committee will next discuss this topic.

Regards,

Erik M. Christeson, P.E.

General Manager

Kirkwood Meadows Public Utility District

(209) 258-4444

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Erik Christeson

From: Bryce Wehan <bwehan@pyramidpeakproperties.com>
Sent: Tuesday, March 26, 2024 10:47 AM
To: Erik Christeson
Subject: Re: Propane Fuel Switching

On the residential side: One idea we did not talk much about is how instant electric water heaters could be utilized. Its difficult with the high increase in water temp per gallon. And wont work well for tubs unless there is a secondary heater to finish the job. But its an option for sure.

1. Are you willing to share your propane usage data with the Planning Committee?
 - a. yes, pending formal board approval
 2. Please describe the type of facility (boiler, furnace, etc.) associated with this account.
 - a. High and low efficiency propane boilers servicing Radiant baseboards and fan coils.
 3. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
 - a. New HE = ~25-30 years
 - b. Old Aspen commercial boilers = 0-5 years
 4. Are you planning to update your heating systems within the next 5 years?
 - a. yes for aspen
 5. Have you analyzed replacement options and replacement costs for your equipment? Please share any quotes for electrification you may have received and barriers to implementation.
 - a. yes, for HE propane replacement.
 - b. no for Electrical option
 - i. barriers =
 1. enough electricity to the 5th floor boiler room
 2. Radiant baseboards require high temp, ~160 F, versus more easily obtainable 120-125 F
 - a. Direct electric resistors i have been told have trouble releasing heat at the higher temps in a closed loop
 - b. Heat pumps I have been told have trouble creating that kind of temperature differential as well.
 - i. So a heat pump with a large buffer tank still wont work unless we supplement with a source that gets it from 125 -> 160.
 - ii. Hybrid HE propane / Electric boilers?
 1. Electric boiler first, and at some specific engineered trigger Propane boiler kicks on?
 2. Not sure how this works if the closed loop is always higher, ~140-155F.
 3. air flow if air-to-air exchangers mean the units will have to mounted outside on flat roof. is feasible.
 4. Unit in place conversion versus electrifying glycol system is not fledged out.
 - a. Lounge could be converted likely, but hallways and stairwells are mor difficult to bypass glycol loop..
6. Are you considering adding cooling systems to your facilities?

- a. No
- 7. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)
 - a. Engineering analysis
 - b. Walkthrough and proposal of range of option available for those of us who just don't know all the options available.
 - c. KMPUD pays for upgraded electrical line from a transformer if needed.
 - d. KMPUD installs High heat glycol loop throughout valley for HOAs to tap into.
 - i. Low heat? Then HOAs bump the remainder with heat pumps?
 - 1. eg: supplying a ground source loop for HOAs and residents to tap.
 - e. helping residents convert breaker panels for increased slots and relays that an owner could tap electric baseboard heaters to or mini-splits
 - f. Helping each HOA navigate and update to their bylaws or CC&Rs. For gaining a path around the major concerns over heat pumps and noise pollution.

The Weather Is Sweet,

Bryce Wehan
 (530) 665-8293
 DRE #02160478
 Pyramid Peak Properties

Vacation Rentals & Home Sales
 In Lake Tahoe & High Sierra

From: Erik Christeson <EChristeson@kmpud.com>
Sent: Tuesday, March 26, 2024 9:40 AM
To: Bryce Wehan <bwehan@pyramidpeakproperties.com>
Subject: Propane Fuel Switching

Hi Bryce,

This January, the KMPUD Planning Committee reached out to Meadowstone and Sun Meadows 3/4 as some of our largest users of propane to discuss with you the District's strategic goal to supply reliable power to meet the energy needs of our customers while minimizing the impact on our environment. Our drive to increase the use of electricity in lieu of propane in Kirkwood is a crucial path towards this goal.

We appreciate your participation in our March Planning Committee meeting to discuss the issues surrounding fuel switching from propane to electricity, the engagement and sharing of ideas was a great start.

As a follow up to that meeting, the Planning Committee would appreciate it if you could answer the questions below and provide any further feedback. Please contact me with any further questions.

- 9. Are you willing to share your propane usage data with the Planning Committee?
- 10. Please describe the type of facility (boiler, furnace, etc.) associated with this account.
- 11. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
- 12. Are you planning to update your heating systems within the next 5 years?

13. Have you analyzed replacement options and replacement costs for your equipment? Please share any quotes for electrification you may have received and barriers to implementation.
14. Are you considering adding cooling systems to your facilities?
15. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)

We look forward to your assistance and replies and will keep you informed of when the Planning Committee will next discuss this topic.

Regards,
Erik M. Christeson, P.E.
General Manager
Kirkwood Meadows Public Utility District
(209) 258-4444
www.kmpud.com

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Erik Christeson

From: Lynn Keane <lynnkeane@msn.com>
Sent: Wednesday, March 27, 2024 5:53 PM
To: Erik Christeson
Cc: Nate Whaley; 'John Reiter'; Ben Hutchinson; jbarstad@kirkwoodcp.com; 'adam craig'; 'Jon Frick'
Subject: Re: Propane Fuel Switching

Hi Eric,
Thank you for the email.

I'm sharing your email with the MC BOD and KPS. As I said in the meeting, I'm new to the BOD and was at the meeting mostly to listen since this entire subject is far beyond my scope of knowledge and experience.

I will ask the board how best to address your questions and we will get back to you.

Thank you again, and we look forward to being part of the discussion.

Sincerely,
Lynn Keane

From: Erik Christeson <EChristeson@kmpud.com>
Sent: Tuesday, March 26, 2024 1:44 PM
To: lynnkeane@msn.com <lynnkeane@msn.com>
Subject: Propane Fuel Switching

Hello Lynn,
This January, the KMPUD Planning Committee reached out to The Mountain Club as our largest user of propane to discuss with you the District's strategic goal to supply reliable power to meet the energy needs of our customers while minimizing the impact on our environment. Our drive to increase the use of electricity in lieu of propane in Kirkwood is a crucial path towards this goal. This is in reference to Account # 17098.

We appreciate your participation in our March Planning Committee meeting to discuss the issues surrounding fuel switching from propane to electricity, the engagement and sharing of ideas was a great start.

As a follow up to that meeting, the Planning Committee would appreciate it if you could answer the questions below and provide any further feedback. Please contact me with any further questions.

1. Are you willing to share your propane usage data with the Planning Committee?
2. Please describe the type of facility (boiler, furnace, etc.) associated with these accounts.
3. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
4. Are you planning to update your heating systems within the next 5 years?
5. Have you analyzed replacement options and replacement costs for your equipment? Please share any quotes for electrification you may have received and barriers to implementation.
6. Are you considering adding cooling systems to your facilities?

7. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)

We look forward to your assistance and replies and will keep you informed of when the Planning Committee will next discuss this topic.

Regards,

Erik M. Christeson, P.E.

General Manager

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Erik Christeson

From: Thomas Franscioni <tfranscioni@tlak-hoa.com>
Sent: Tuesday, March 26, 2024 10:00 PM
To: Erik Christeson
Cc: board@tlak-hoa.com; Jarl Berntzen; Michael Jarrard
Subject: Re: Propane Fuel Switching

Erik

We are currently satisfied with our propane boiler and expect many more years of service out of it. From what we can gather it is not economically feasible for us to make the switch to an electric boiler anytime soon.

Tom Franscioni
President
The Lodge HOA

Sent from my iPhone

On Mar 26, 2024, at 9:55 AM, Erik Christeson <EChristeson@kmpud.com> wrote:

Hello Lodge Board,

This January, the KMPUD Planning Committee reached out to the Lodge as one of our largest users of propane to discuss with you the District's strategic goal to supply reliable power to meet the energy needs of our customers while minimizing the impact on our environment. Our drive to increase the use of electricity in lieu of propane in Kirkwood is a crucial path towards this goal. This is in reference to Account #s 16955 & 13525

We had good participation in our March Planning Committee meeting to discuss the issues surrounding fuel switching from propane to electricity, the engagement and sharing of ideas was a great start.

As a follow up to that meeting, the Planning Committee would appreciate it if you could answer the questions below and provide any further feedback. Please contact me with any further questions.

1. Are you willing to share your propane usage data with the Planning Committee?
2. Please describe the type of facility (boiler, furnace, etc.) associated with these accounts.
3. Please provide the age, estimated remaining useful life, and capacity of each piece of equipment.
4. Are you planning to update your heating systems within the next 5 years?
5. Have you analyzed replacement options and replacement costs for your equipment?
Please share any quotes for electrification you may have received and barriers to implementation.
6. Are you considering adding cooling systems to your facilities?

7. Besides direct funding (rebates) for equipment replacement, what types of other incentives would be most beneficial to you in making a switch from propane to electricity? (E.g. engineering analysis, equipment selection, etc.)

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Regards,

Erik M. Christeson, P.E.

General Manager

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