

**Docket No. U-190818 - Vol. I**

**Investigation into Renewable Natural Gas Programmatic  
Design and Pipeline Safety Standards**

**October 29, 2019**



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BEFORE THE WASHINGTON  
UTILITIES AND TRANSPORTATION COMMISSION

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In Re the Investigation ) Docket U-190818  
into Renewable Natural Gas )  
Programmatic Design and )  
Pipeline Safety Standards )  
)

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WORKSHOP, VOLUME I

Pages 1-155

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Washington Utilities and Transportation Commission  
621 Woodland Square Loop Southeast  
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A P P E A R A N C E S

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- 2
- 3 DAVE DANNER, Chair
- 4 ANN E. RENDAHL, Commissioner
- 5 JAY BALASBAS, Commissioner
- 6 KENDRA WHITE, Energy Policy Advisor
- 7 JASON LEWIS, Transportation Policy Advisor
- 8 PETER MOULTON, Department of Commerce
- 9 AMY ANDREWS, Commission Policy Director
- 10 MARK JOHNSON, UTC Executive Director
- 11 SEAN MAYO, UTC Pipeline Safety
- 12 RAYNE PEARSON, UTC Administrative Law Director
- 13 ANDREW RECTOR, Commission Staff
- 14 REBECCA BROWN, NW Natural
- 15 JOY FRYER, Avista
- 16 JENNIFER SMITH, Avista
- 17 ALYN SPECTOR, Cascade Natural Gas
- 18 KEVIN RICKS, Klickitat PUD
- 19 RALPH EPLING, Sustainable Energy Ventures
- 20 RUSTY WILLIAMS, Cost Management
- 21 MIKE PARVINEN, Cascade Natural Gas
- 22 HALLI CHESSER, NW Natural
- 23 JIM PARVEY, City of Tacoma
- 24 JOHN ROTHLIN, Avista
- 25 BRANDON HOUSKEEPER, PSE
- ANNA CHITTUM, NW Natural
- TED LEHMANN, CMS
- GLENN BLACKMON, Department of Commerce
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- SARAH LAYCOCK, Public Counsel
- LISA GAFKEN, Public Counsel
- DAVID BROUSTIF, King County
- NATASHA SIORES, NW Natural
- TED DRENNAN, NW Natural
- RACHAEL ANDERSON, Avista
- JODY MOREHOUSE, Avista
- WILL EINSTEIN, PSE
- CHAD STOKES, AWEC
- DAVE WARREN, Renewable Hydrogen Alliance
- SAME WADE, Coalition for Renewable Natural Gas
- MICHAEL MULLALLY, PSE
- KARA DURBIN, PSE
- BILL DONAHUE, PSE
- JAYSON ANTONOFF, i-Sustain (phone)
- MICHAEL WHITBY, Avista (phone)
- ED BANKLEA, AWEC (phone)
- BILL EDMONDS, NW Natural (phone)
- MICHAEL SMITH, Impact Bioenergy (phone)

1                   A P P E A R A N C E S (Cont.)

2   CHRIS DAVIS, Governor's Office (phone)

   TOM MURRAY, Vermont Gas (phone)

3   DONALD CHAHBAZPOUR, National Grid (phone)

   ANGUS KING, Summit Utilities (phone)

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1 LACEY, WASHINGTON; OCTOBER 29, 2019

2 11:00 A.M.

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4 P R O C E E D I N G S

5

6 MS. WHITE: Good morning. Welcome to the  
7 Washington Utilities and Transportation Commission  
8 workshop on renewable natural gas, which is docketed as  
9 U-190818.

10 My name is Kendra White. I'm an energy  
11 policy advisor here at the Commission.

12 MR. LEWIS: Sorry. My name is Jason Lewis,  
13 and I'm the transportation policy advisor at the UTC.

14 MS. WHITE: Together Jason and I are  
15 co-leading a Staff investigation into renewable natural  
16 gas. I'll be leading the programmatic design portion of  
17 the investigation and Jason is leading the pipeline  
18 safety standard portion of the investigation.

19 The Staff investigation covers two  
20 interrelated items; RNG offering pursuant to House Bill  
21 1257 and pipeline safety standards. I'll start by  
22 giving a brief overview of 1257.

23 So in addition to other provisions, House  
24 Bill 1257 has two sections that are especially relevant  
25 to today's conversations. First, Section 13 allows

1 natural gas utilities to propose a renewable natural gas  
2 program where costs would be recovered from all retail  
3 customers. This program would be subject to the  
4 Commission's review, and customer charges for this  
5 Section 13 program would be capped at 5 percent of the  
6 amount charged for natural gas.

7           The section -- second section of 51 -- or  
8 sorry, 1257 that's relevant here is Section 14. This  
9 requires natural gas utilities to offer by tariff a  
10 voluntary renewable natural gas service. This tariff  
11 would be to replace any portion of natural gas provided  
12 to the customer. And the tariff may be used with  
13 environmental attributes of RNG paired with natural gas.

14           Across both these two sections of the law,  
15 the UTC has the statutory authority to approve inclusion  
16 of other sources of gas beyond those included in the  
17 bill's definition of renewable natural gas as long as  
18 those sources are produced without fossil fuels. The  
19 Commission is also directed to establish procedures for  
20 banking and transferring environmental attributes to  
21 ensure they are not used for any other purpose.

22           And then I'll let Jason talk about the  
23 pipeline safety standards.

24           MR. LEWIS: Thank you. So as we're looking  
25 at this, one of the fun roles I get to play in this

1 process is looking at the quality standards and overall  
2 safety for the pipeline infrastructure. So it's a  
3 delicate balance as we have these discussions, and so  
4 that will be kind of my focus and some of the areas of  
5 interest for me. So if there's anyone that is  
6 particularly interested in that area, I'll have my  
7 contact information available, and I would appreciate  
8 just reaching out. Thank you.

9 MS. WHITE: So with this background in mind,  
10 the questions that we put in the notice for comment as  
11 well as the format of today's workshop is designed to  
12 set the foundation for future Commission efforts  
13 regarding programmatic design and safety standards. We  
14 also hope that the presentations that we have lined up  
15 for today will provide natural gas utilities and other  
16 stakeholders with some models to consider as you design  
17 your own programs.

18 So which brings me finally to today's  
19 agenda. So we're going to have some brief introductory  
20 comments from the Commissioners and then ask you all to  
21 introduce yourselves. Then we'll have four  
22 presentations. The -- there are three presentations by  
23 renewable natural gas utilities -- or sorry, utilities  
24 that have renewable natural gas programs from elsewhere  
25 in the country. They're going to be sharing an overview

1 of their programs and speaking to the challenges,  
2 opportunities, and lessons learned as they've developed  
3 their programs. They're going to give 15-minute or so  
4 presentations and then we'll have time for Q and A  
5 afterwards.

6 We also have a presentation by Peter Moulton  
7 from the Department of Commerce. He'll be sharing the  
8 Department's statewide analysis on the technical and  
9 economic potential of renewable natural gas in the state  
10 as well as their other recent work on renewable natural  
11 gas standards. As I mentioned, each -- for each of the  
12 four presentations, there'll be 15 minutes of -- of  
13 discussion at the end.

14 Given that the burden falls on the utilities  
15 to design these voluntary tariffs, we request that the  
16 utilities have the first opportunity to ask questions of  
17 course after the Commissioners ask any questions they  
18 may have based on the presentations. Amy Andrews, our  
19 policy director, in the back, she'll have a microphone  
20 and be able to walk around so that those of you who have  
21 questions will be able to make sure we can hear them as  
22 well as others who are calling in on the phone.

23 Also, I'll just say this up front, in case  
24 you want to run out and grab some food, there will be an  
25 opportunity for you all to eat. We're having a working



1 lunch, so feel free to snack on whatever you brought  
2 with you today.

3           After the break, we would like to hear from  
4 each of the natural gas utilities. So, utilities, as  
5 you're listening to the presentations, please be  
6 thinking about your reflections that you will share with  
7 us including what might be relevant to your service  
8 tariff from what you heard as well as how you are going  
9 forward with designing your programs.

10           Finally, we will have an opportunity to  
11 provide comment that's in addition to what has been  
12 already filed in the docket on October 24th and then  
13 we'll close out with next steps.

14           So any questions on today's format or  
15 logistics? I will also mention that there are restrooms  
16 out that direction, there's also drinking fountains out  
17 there, and if we need to evacuate for any reason, feel  
18 free to head out those doors, the glass doors towards  
19 Fred Meyer. It's the safest direction to exit so -- but  
20 any questions?

21           MR. LEWIS: We realize that the microphones  
22 aren't picking up, so we're going to hold really close  
23 to our mouths now.

24           MS. WHITE: Pass it over to you,  
25 Commissioner, Chair Danner.

1                   CHAIRMAN DANNER: Good morning, everyone.  
2 Thank you very much for being here. This is a really  
3 important topic, and we're getting into areas that are  
4 really new to the Commission, new to me. And so I'm  
5 really looking forward to learning a lot today. I  
6 appreciate the written comments that have been submitted  
7 so far. I have read them with great interest. I'd like  
8 to follow up.

9                   I think that it is important as we look at  
10 this, we have to keep an eye on legislative finding  
11 that was in House Bill 1257, that talked about a goal --  
12 or thank you -- of deferring or displacing the need for  
13 natural gas-fired electricity generation and reducing  
14 the direct use of natural gas. Now, that -- that's  
15 intent language. That is not operative language, but  
16 it's something that we are going to have to look at and  
17 find and discuss potential alternatives, and I think RNG  
18 is going to be a big part of that to the extent that RNG  
19 is -- is feasible.

20                   So, again, I look forward to learning a lot  
21 today. It is my hope that when we do the introductions  
22 today, for those of you who are new to our world, that  
23 you can give us a little bit of background about your --  
24 your companies and the service that you provide. Not --  
25 not a -- not an advertisement, but just an informational

1 piece of background.

2 So with that, again, thank you for being  
3 here, and I look forward to the discussion today.

4 COMMISSIONER RENDAHL: And I too am very  
5 happy to see all of you here and that there are folks on  
6 the line. Appreciated all the comments. Very  
7 interesting variety of the comments on this topic. Just  
8 demonstrates the amount of work that we need to do  
9 collectively on this -- on this issue. So thank you for  
10 the comments. Look forward to hearing more conversation  
11 today.

12 COMMISSIONER BALASBAS: All right. Good  
13 morning, everyone. I -- I also want to extend my thanks  
14 for all of you being here and for all of those who are  
15 listening in today. You know, I think the renewable  
16 natural gas, you know, we are starting, you know, at the  
17 very forefront of this here in Washington State, and  
18 we're starting with a very interesting foundation in a  
19 developing industry, and this is new to all of us. And  
20 I think -- I look forward to learning a lot from this.

21 I think it's also important to look at  
22 renewable natural gas as a way to -- you know, to lower  
23 the carbon from our existing natural gas use and -- and  
24 look at this as a good supplement to what we are using  
25 natural gas for today.

1 I do want to extend my thanks to both Kendra  
2 and Jason for their work in putting this workshop  
3 together. Also really appreciate Peter being here, to  
4 you and your colleagues at the Department of Commerce  
5 for all the work that you've all done in the last couple  
6 of years to help set up this conversation as we go  
7 forward.

8 I think it's important that we take our time  
9 to get this right while also keeping in mind that we do  
10 have some legislative requirements to fulfil and  
11 appreciate all the work of the utilities and -- and  
12 other stakeholders who are here. I look forward to the  
13 conversation and working with you all on this.

14 MR. LEWIS: This is our opportunity to do  
15 introduction with a one- or two-sentence background of  
16 why you're here. And if you also don't mind, spell your  
17 last name when you introduce yourselves, that would be  
18 very helpful. Thank you.

19 MS. ANDREWS: Amy Andrews, A-n-d-r-e-w-s,  
20 policy director at the Commission and microphone  
21 chaperon for the day.

22 MS. SMITH: Jennifer Smith, manager of  
23 regulatory policy with Avista.

24 MS. MOREHOUSE: Jody Morehouse, director of  
25 gas supply with Avista.

1 MR. DONAHUE: Bill Donahue, manager of  
2 natural gas resources for Puget Sound Energy, and the  
3 last name is D-o-n-a-h-u-e.

4 MR. EINSTEIN: Will Einstein,  
5 E-i-n-s-t-e-i-n. Director of product development for  
6 Puget Sound Energy.

7 MS. FRYER: Joy Fryer, F-r-y-e-r. I am  
8 product manager for renewables at Avista.

9 MS. ANDERSON: Rachael Anderson, and that's  
10 s-o-n, and I am a natural gas design engineer with  
11 Avista.

12 MR. ROTHLIN: John Rothlin, R-o-t-h-l-i-n.  
13 I'm manager of Washington government relations for  
14 Avista.

15 MR. WARREN: Dave Warren, W-a-r-r-e-n,  
16 representing Klickitat PUD, Renewable Hydrogen Alliance,  
17 and Douglas PUD.

18 MR. RICKS: Kevin Ricks, Klickitat PUD,  
19 R-i-c-k-s. I'm the renewable energy assets manager and  
20 the manager of a 5700 decatherm per day RNG plant and  
21 that's Roosevelt Regional Landfill.

22 MS. SIORES: Good morning. Natasha Siores,  
23 S-i-o-r-e-s. I'm manager of regulatory compliance with  
24 Northwest Natural.

25 MS. CHITTUM: Hi, Anna Chittum,

1 C-h-i-t-t-u-m. I'm the director of renewable resources  
2 for Northwest Natural and I just -- for background for  
3 all of us from Northwest Natural, we are currently  
4 interconnecting three RNG projects and are looking to  
5 procure a lot of RNG for our customers both here and in  
6 Oregon under Oregon Senate Bill 98.

7 MS. BROWN: Rebecca Brown with Northwest  
8 Natural. It's B-r-o-w-n, and I'm in regulatory  
9 compliance.

10 MS. CHESSER: Halli Chesser, C-h-e-s-s-e-r.  
11 I'm a project engineer for Northwest Natural on  
12 renewable natural gas projects.

13 MR. DRENNAN: I'm Ted Drennan with Northwest  
14 Natural. That's D-r-e-n-n-a-n, in the strategic  
15 planning department.

16 MR. STOKES: Good morning. Chad Stokes,  
17 S-t-o-k-e-s, with the Alliance of Western Energy  
18 Consumers.

19 MR. WILLIAMS: Rusty Williams, with Cost  
20 Management Services. W-i-l-l-i-a-m-s.

21 MR. LEHMANN: Ted Lehmann with Cost  
22 Management Services. L-e-h-m-a-n-n.

23 MR. WADE: I'm Sam Wade, W-a-d-e, with The  
24 Coalition for Renewable Natural Gas. We're a national  
25 trade association for the RNG industry and very excited

1 to see this conversation begin.

2 MR. PARVINEN: Mike Parvinen, director of  
3 regulatory affairs with Cascade Natural Gas. That's  
4 P-a-r-v-i-n-e-n.

5 MR. SPECTOR: Alyn Spector, energy  
6 efficiency policy manager for Cascade Natural Gas.  
7 Alyn, A-l-y-n, Spector, S-p-e-c-t-o-r.

8 MR. MULLALLY: Michael Mullally,  
9 M-u-l-l-a-l-l-y, Puget Sound Energy. Manager of the new  
10 product -- in the new products and services group.

11 MS. DURBIN: And I'm Kara Durbin,  
12 D-u-r-b-i-n, and I work in regulatory policy at Puget  
13 Sound Energy.

14 MR. HOUSKEEPER: Brandon Houskeeper,  
15 H-o-u-s-k-e-e-p-e-r. Government affairs at Puget Sound  
16 Energy.

17 MR. EPLING: Ralph Epling, E-p-l-i-n-g.  
18 Sustainable Energy Ventures, RNG development.

19 MR. JOHNSON: Mark Johnson, the COH, and  
20 s-o-n, with the UTC, executive director.

21 MR. MAYO: Sean Mayo, M-a-y-o, and I work in  
22 pipeline safety here at the UTC.

23 MS. PEARSON: Rayne Pearson, and I'm the  
24 administrative law director.

25 MR. RECTOR: Andrew Rector, R-e-c-t-o-r,

1 Commission Staff.

2 MR. LEWIS: I know we have it looks like 15  
3 people on the phone, and I don't have any names, but it  
4 would be great if we could have someone just kick off  
5 the introductions from the phone.

6 MR. ANTONOFF: Sure, this is Jayson Antonoff  
7 with i-Sustain. First name is J-a-y-s-o-n, and  
8 A-n-t-o-n-o-f-f.

9 MR. WHITBY: Michael Whitby with Avista,  
10 W-h-i-t-b-y.

11 MS. GAFKEN: This is Lisa Gafken and Sarah  
12 Laycock with Public Counsel. We will actually be there  
13 in person, we just got stuck behind a car accident on  
14 I-5. So looking forward to the discussion today.

15 MR. BANKLEA: This is Ed Banklea for the  
16 Alliance of Western Energy Consumers, n-k-l-e-a.

17 MR. EDMONDS: Bill Edmonds with Northwest  
18 Natural, E-d-m-o-n-d-s. Director of environmental  
19 management and sustainability.

20 MR. SMITH: Michael Smith with Impact  
21 Bioenergy, director of legal and business development,  
22 and we're a generator -- Spire Energy through small --  
23 digesters, distributive digesters.

24 MR. DAVIS: This is Chris Davis with the  
25 Governor's Office. Policy advisor for Climate and



1 Energy.

2 MR. MURRAY: Tom Murray, M-u-r-r-a-y, from  
3 Vermont Gas.

4 MR. BROUSTIF: David Broustif,  
5 B-r-o-u-s-t-i-f, with King County. Also on my way,  
6 stuck behind a car accident.

7 MS. WHITE: Okay. Thank you all for  
8 introducing yourselves. I know we just got started, but  
9 we're actually going to break. Well, again, we're going  
10 to come back for two hours of presentation, so this is  
11 your chance for food, water, and bathroom. So we will  
12 be reconvening at 12 o'clock. Thank you.

13 (A break was taken from  
14 11:21 a.m. to 12:04 p.m.)

15 MS. WHITE: Okay. It's time for Q and A for  
16 our first speaker. We're going to get started. I  
17 believe our first speaker from National Grid is on the  
18 line, so can you please introduce yourself and feel free  
19 to begin your presentation.

20 MR. CHAHBAZPOUR: Hi, Kendra. I'm here,  
21 Donald Chahbazpour from National Grid.

22 MS. WHITE: Thanks so much. Please free to  
23 start your presentation. Everyone has gathered back in  
24 the room now.

25 MR. CHAHBAZPOUR: Okay. Well, thank you so

1 much for inviting me. I apologize if I sound a little  
2 congested, I have a small cold. And, Kendra, if it's  
3 okay, I have to drop off at 12:30, so can I just speak  
4 for a few minutes and then open up to Q and A, is  
5 that -- is that...

6 MS. WHITE: That's great. Thanks so much.

7 MR. CHAHBAZPOUR: All right. So for those  
8 of you that aren't familiar with National Grid, we  
9 operate in New York, Rhode Island, and Massachusetts.  
10 We're basically six legacy natural gas utilities under  
11 an umbrella. All the states that we operate in are  
12 basically moving away from 80x50 and they're moving  
13 towards really carbon neutrality. And New York just  
14 passed the EL CPA legislation under the Leadership and  
15 Community Act, which is moving New York towards carbon  
16 neutrality by 2050. So we believe that the gas network  
17 can play an integral role in achieving those deep  
18 emission reductions targets, and RNG is a cornerstone of  
19 that visioning.

20 The way we started thinking about RNG  
21 between now and 2030, we look at really biomass as the  
22 primary source of RNG that will really play the -- you  
23 know, the most critical role. And -- but beyond 2030,  
24 hydrogen plays a role beyond that. So the way we think  
25 about it is, between now and 2030, we want to make sure

1 that as much biomass RNG comes into the network. And  
2 beyond that, we're basically laying the foundation that  
3 the hydrogen becomes a player, becomes a component of BP  
4 gas network.

5 So from that perspective, we recently filed  
6 what we call the future of heat rate case among Long  
7 Island utilities, and so there are four components I  
8 want to cover. One of them is green gas power, which is  
9 a voluntary program that allows our customers,  
10 commercial and residential, to pay a premium to purchase  
11 a portion of their gas from RNG heat sources. You will  
12 hear soon from Tom Murray from Vermont Gas that it is  
13 basically that program we would -- could be -- the staff  
14 are pretty positive, which means I'm pretty -- you know,  
15 we are very confident that that program will get  
16 approval --

17 MR. LEWIS: This is Jason Lewis with the  
18 UTC. In order for the court reporter to accurately  
19 capture everything, do you mind just slowing down a  
20 little bit?

21 MR. CHAHBAZPOUR: Sure. Thank you. And I  
22 work out of Brooklyn, so we all speak fast. And in  
23 Brooklyn, people think I actually speak slow.

24 So that program should be operational by  
25 2021 and, again, the GGT is the green gas tariff.

1           The second component that we filed is an RNG  
2 interconnection incentive. So we are trying to give  
3 developers an incentive of about \$500,000 to pay for  
4 the -- part of the infrastructure that goes into  
5 connecting to our gas network. So it's basically  
6 metering odorization and gas analyzers.

7           The third programming of future of heat rate  
8 case is powered gas demonstration project. We're trying  
9 to partner with NREL and DOE and the City of New York to  
10 develop a power gas project where we not only produce  
11 hydrogen, but we also connect with a CO2 stream, most  
12 likely at this point, there'll be a wastewater fuel  
13 plant in New York City to methanize the gas.

14           So from our perspective, we really just want  
15 to learn what does it take to integrate a powered gas  
16 plant into a gas network. There's a lot of lessons that  
17 we need to learn and from our perspective we have a lot  
18 of as you can imagine technical and engineering  
19 questions, how do we start to integrate this kind of a  
20 resource and fuel gas system.

21           The other component is a hydrogen blend  
22 study. There's a lot of literature out there that says  
23 we can blend 10 to 15 percent or even as high as 20  
24 percent of hydrogen directly into your gas network. So  
25 we are doing a study with a local university right here

1 in Long Island to really assess what is that number. Is  
2 it 10, is it 15? We also want to understand what's the  
3 impact on -- on our infrastructure. We have a lot of  
4 bare steel, cast iron is still here, and -- and plastic.  
5 And so we want to understand, you know, can we begin to  
6 introduce hydrogen, you know, if you have cast iron and  
7 bare steel or does it have to be all plastic. So those  
8 are some of the technical questions that we're trying to  
9 address in the rate case.

10 From the perspective if you are looking at  
11 what are the major barriers into the RNG, there are two.  
12 There are two major barriers. One of them is technical,  
13 the other is a policy one. From a technical  
14 perspective, I don't know if you have any project  
15 developers in that room, but if you ask them who's your  
16 biggest barrier, they'll probably say the utilities. We  
17 have been listening to them and kind of said, you know,  
18 they actually have a point, that a lot of developers go  
19 to a utility and we ask for, you know, any connection --  
20 one -- first, if I get a response, that they don't have  
21 one, but if they start giving them the gas quality  
22 specifications, they'll get many different answers.

23 So we got together, we, all of us in New  
24 York State, all the utilities in New York State got  
25 together to develop an interconnection guideline. We

1 brought ABC and RNG Coalition. ABC is American Biogas  
2 Council, RNG Coalition, two industry associations that  
3 will present RNG -- RNG industry and we work with them  
4 to develop this guideline.

5 That guideline, after two years, is now  
6 posted on our website. It was a -- you know, took a  
7 couple of years, but we needed to go through that  
8 process. And we tried to really, you know, apply what  
9 we call good science and common sense to interconnection  
10 guideline. And really it comes down to having  
11 flexibility and recognizing that there is no such, you  
12 know, one size fits all. Again, this becomes very  
13 technical, and if any one of the Commissioners is  
14 interested, you know, I can connect you to our gas  
15 engineering team over time. But it's something that you  
16 will definitely face and we have to address.

17 From the policy perspective, you know, the  
18 biggest barrier to make RNG a reality is that if you  
19 produce RNG today and you -- in the transportation  
20 sector you qualify for RINs. I'm assuming you guys know  
21 what RINs are, which is under EPA's RFS program,  
22 Renewable Fuel Standards, that says a certain percentage  
23 of your gas has to come from renewable sources. And if  
24 it comes from electricity, you generate power with RNG,  
25 you qualify for RECs under RPS, but if you use RNG and

1 heat, you get nothing. You don't generate any  
2 attributes and there's no equivalent on RPS or RFS or  
3 heat. That is a significant barrier.

4           When we have brought this up with EPA, they  
5 completely agree with us, but they will say that, you  
6 know, in the -- the transportation sector it's a federal  
7 jurisdiction, but when it comes to heat, it's going to  
8 be a state solution. So every state has to do this on  
9 its own, and we are talking to our regulators that we  
10 need to start thinking about creating some sort of a  
11 thermal RIN or a thermal REC.

12           Without that, and what's happening today in  
13 the U.S., I don't know if this has been covered with the  
14 previous speakers, we started looking at RNG ten years  
15 ago, and at that time, there were only half watt  
16 projects in the United States injecting gas into the gas  
17 network. Today it's now over a hundred in North  
18 America, it's over 85 in United States, and almost all  
19 of them are going towards the transportation sector, and  
20 a lot of them are actually being sold to California  
21 because California has the equivalent of an RFS, which  
22 is the LCFS, low-carbon fuel standards.

23           So California has become sort of a magnet  
24 for RNG to decarbonize the transportation sector, but as  
25 we are looking at the deep emission reduction goals that

1 I was alluding to earlier, which, you know,  
2 Massachusetts, New York, and Rhode Island are all moving  
3 towards, they're starting to recognize that the heat  
4 sector is a very difficult sector to be carbonized. You  
5 can't just electrify the entire sector. It will  
6 probably be a portfolio approach. You do need your  
7 thermal and heat pumps, but you would need a combination  
8 of RNG, starting from biomass today and hydrogen.

9 So in that, you know, with that context, it  
10 might be applicable to Washington State as well, that is  
11 something that we are addressing with our regulators.

12 So I have -- I have a lot more to say, you  
13 know, what we're thinking on some of the other projects  
14 we're working on, but why don't I stop here and answer  
15 any questions that you might have.

16 MS. WHITE: Thank you for your comments.

17 Commissioners, do you have any questions for  
18 our speaker?

19 CHAIRMAN DANNER: Hi, this is Dave Danner.  
20 I'm the Utilities and Transportation Commissioner in  
21 Washington. Thank you for your comments today. I'm  
22 interested -- your -- you see hydrogen as something  
23 that's being phased in, biomass is really the first  
24 project to get off the ground. Are you seeing a future  
25 for biomass after 2030 or do you think hydrogen is going



1 to take over that space?

2 MR. CHAHBAZPOUR: So great question. I do  
3 see a role for biomass beyond 2030, especially on the  
4 feedstocks and the wastelands. So, you know,  
5 wastewater, food waste, the dairy sector, all those  
6 sectors will continue to play a role. So it sort of  
7 becomes both of them, but if you just look at biomass  
8 today and the Long Island food is food waste, landfills,  
9 if -- not a lot, even though, you know, we're -- we're  
10 actually seeing people -- policy support behind it, it  
11 will actually be significant. But all that's going to  
12 be anaerobic digestion.

13 So even with biomass, there is two  
14 technologies. Anaerobic digestion is here and now, but  
15 the biggest feedstocks are in gasification space. So  
16 and that's where the biggest portion of RNG comes from  
17 the biomass sector and that would also play a role  
18 beyond that, beyond 2030.

19 The one that becomes really interesting and  
20 we're seeing that here, at least in the Northeast, I'm  
21 assuming you probably have that where you are, is we're  
22 starting to see, you know, very, very ambitious goals,  
23 you know, for offshore land and solar. So we think, you  
24 know, what power, gas, and hydrogen does is really  
25 integrates gas and the electric network where we start

1 to utilize the gas network a bit, a very large battery.  
2 And there might even be dedicated renewable sources to  
3 produce hydrogen to get to those sectors that are  
4 difficult to be carbonized. So we know once we get  
5 dedicated hydrogen -- dedicated renewables to produce  
6 hydrogen, then there is no upper limit, right, to the  
7 amount of hydrogen that can be produced.

8           The one thing I need to mention is there is  
9 a lot of, you know, discussions in the U.S. and among my  
10 colleagues even in the UK, do we beyond 2030 move to a  
11 pure hydrogen system or maintain a system that's  
12 basically delivering methane, but it's methane from  
13 renewable sources. I think the jury will be out in that  
14 one for a long time obviously. But, you know,  
15 colleagues in the UK think that you actually  
16 transition -- they're thinking that they will transition  
17 to a pure hydrogen system, you know, from -- they're  
18 starting to do that now, Leed's, the third largest in  
19 England is, you know, their vision is to move to a pure  
20 hydrogen system by 2050.

21           We actually in the U.S., I think we think --  
22 we think that we will actually keep a methane system,  
23 and the reason that we think that is, it is the least  
24 destructive for our customers. You don't have to  
25 overhaul an entire system and build a new gas system to

1 deliver hydrogen, and if you keep it as a methane  
2 system, it's also least destructive from the perspective  
3 that customers don't have to replace their appliances.

4           So I know I went off, you know, a little  
5 more than you wanted to, but I felt it was important to  
6 highlight those sort of distinct -- those distinctions  
7 in terms of the cap rate that hydrogen plays beyond  
8 2030.

9           CHAIRMAN DANNER: No, I -- I -- I appreciate  
10 that. Thank you. It's very helpful. I also wanted to  
11 ask you about the hydrogen blending. I know that this  
12 is research that's ongoing, but what are you finding  
13 preliminarily? We don't have a lot of bare steel out  
14 here. We do have some -- some Aldyl A and other plastic  
15 pipe, are you -- is there any -- anything that you've  
16 learned already or is that just something that's  
17 research in the works?

18           MR. CHAHBAZPOUR: It's mostly research in  
19 the works. But RNG here, you know, in the UK, they're  
20 talking -- thinking about, you know, embrittlement, you  
21 know, could become an issue. Then they're actually  
22 saying if you introduce a little bit of hydrogen, you  
23 know, a little bit of oxygen, hydrogen sticks to it. So  
24 that's one thing we're, you know, considering.

25           There's -- the one thing is about sort of

1 steels. You know, our -- our engineers are thinking  
2 about, you know, uniqueness of methane and those issues.  
3 But all of these issues are actually in the research  
4 projects that will be studying this. So we haven't done  
5 a lot of this, but there's been a lot of sort of  
6 literature review, and our gas engineering team talking  
7 to our colleagues in the UK.

8           The one thing, you know, that we are  
9 learning from our colleagues in the UK and also our  
10 engineering team and from all of their studies, looking  
11 at all the studies, you -- they can get over basically  
12 all of these issues. None of them are showstoppers. So  
13 we -- you know, all of these are challenges that can be,  
14 you know, overcome from a technical engineering  
15 perspective.

16           CHAIRMAN DANNER: All right. Thank you very  
17 much.

18           COMMISSIONER RENDAHL: Hi. This is Ann  
19 Rendahl. I'm a Commissioner, and I have a question for  
20 you. You mentioned working with ABC and RNG Coalition  
21 on guidelines and that you have something on your  
22 website. I haven't looked at it yet, so I'm going to  
23 ask you some questions. You also mentioned that you  
24 applied good science and common sense and no one size  
25 fits all. So is this an industry established guideline

1 that's like a minimum or what -- what -- can you give us  
2 a little bit more detail on what that is and has the --  
3 have any of the State commissions considered or adopted  
4 that guideline?

5 MR. CHAHBAZPOUR: Yeah, so the State, you  
6 know, has [inaudible] guidelines. They basically said  
7 you don't need to file this as sort of a regulatory  
8 proceeding to get approval, so the utilities are sort of  
9 posting on their websites where they have the  
10 operational stuff, operational manuals.

11 You -- it is -- and one thing that people  
12 have asked us and is confused is, is this a gas quality  
13 standard. And we say no, it's a guidance. It tells you  
14 what sort of you need to go through, testing that's  
15 required. But in there, we do give ranges of projects.  
16 So there is all of these projects in the appendix that  
17 you will see. You know, when people get into the weeds,  
18 they want to know, you know, what's the BPU, does it  
19 have to be 908 gas, 990.

20 So we give a range, we give a range for  
21 oxygen and we give a range, you know, for things like  
22 siloxane and other trace constituents that people are  
23 very concerned about. And the reason that we do that,  
24 we basically -- the guideline takes you through this  
25 sort of process that you need to know where you are

1 injecting, right? So if you are injecting into a  
2 high-pressure transmission system, for example, grid,  
3 you know, the way we look at it is, you know, our alarm  
4 could be at a lower heating rate than if you are  
5 injecting into a purely -- injecting into a distribution  
6 network. We can set up an alarm let's say around 975 or  
7 970 if we go into a transmission project, and we don't  
8 have to shut you in immediately. But if you're going to  
9 a distribution network, the alarms will be set higher,  
10 and you will probably get shut in very quickly.

11 So we sort of, you know, taking through that  
12 sort of thinking and say where do you provide  
13 flexibility and where does it make sense. And that's  
14 something really ABC and RNG Coalition, and we  
15 appreciate it. They -- and we agree with them. We do  
16 not want to come up with a number because when you do  
17 come out with a single number, you tend to be very  
18 conservative like when you -- you make it -- you take a  
19 number that is very difficult and the most conservative  
20 and then you start to recognize that you don't need to  
21 have that sort of conservative -- you know, that sort  
22 of -- that conservative into your gas quality standards.

23 So, you know, coming back to there's no such  
24 thing as one size fits all in terms of the gas quality  
25 or its particular project, that's sort of negotiated on

1 a project-specific basis, and that's what's in the  
2 interconnection agreement. So the developer will look  
3 at the guidelines, they'll get a good sense of the  
4 process, and then in there it mentions that, you know,  
5 throughout the process you will then go through an  
6 interconnection agreement with the utility, and that's  
7 where it really becomes a collaborative effort. And  
8 that's the way we look at it. You know, we have about  
9 ten projects actually in the queue at National Grid.  
10 There are ten projects -- project developers that are  
11 developing RNG projects in our footprints that have  
12 requested interconnection services. And we sort of sit  
13 down with them and take them through that process to  
14 make it collaborative.

15 COMMISSIONER RENDAHL: Thank you very much.

16 MR. CHAHBAZPOUR: Thank you.

17 COMMISSIONER BALASBAS: Hi, Donald. This is  
18 Jay Balasbas, one of the Commissioners. I have two  
19 questions about the interconnection incentive that you  
20 mentioned. The first is, how is that incentive funded?  
21 And the second question there is, how much does that  
22 incentive kind of like ballpark, what does that  
23 contribute to maybe to the overall interconnection costs  
24 for a project?

25 MR. CHAHBAZPOUR: Yeah, so I should say, we

1 have not gotten approval. That's -- we are in the  
2 middle of the rate case. You know, we filed our  
3 testimony, so you'll see it. I hope we get approval.  
4 It depends on whether relative size and cost of the  
5 project, it depends what that project is. So if it's a  
6 digester project, we got a dairy and you're building a  
7 digester and you get multiple farms and you're doing a  
8 collection system, it becomes a smaller component,  
9 obviously, because your capital is larger. But it  
10 becomes a bigger portion of the cost if you are doing a  
11 wastewater or treatment plant that already has a  
12 digester. So then most of them, they're basically  
13 learning the biogas.

14           So it is relative, but it is, you know, when  
15 you speak to a developer, even on the smaller -- even on  
16 the bigger one, it is a -- it does become prohibitive  
17 for them. And the -- and it's sort of an assistance to,  
18 you know, get them over the hurdle to make a project  
19 economic work. We are actually asking, I think, for two  
20 projects per year in New York City, one project for Long  
21 Island. So, you know, there's a limit of basically  
22 three projects for State utilities and we're asking for  
23 that cost to be sort of socialized.

24           So it would be in form with all customers.  
25 And as I said, we're looking at a \$450,000 roughly per



1 project, and that excludes, by the way, the cost of the  
2 pipe. And that's one of the issues that, you know, how  
3 far are you from the gas system. There are projects  
4 that are just a couple of hundred feet away from our gas  
5 system, which makes the economy much more attractive  
6 than a dairy project, let's say, in Upstate New York  
7 when they have to put mile of pipe to connect to our  
8 system. Was that helpful?

9 COMMISSIONER BALASBAS: That was. Thank  
10 you.

11 MS. WHITE: We have five more minutes of  
12 Donald's time, so if there are any burning utility  
13 questions, we'll start with those. And, again, Amy has  
14 the microphone.

15 Okay. Go ahead, Dave.

16 MR. WARREN: Yeah, Donald, this is Dave  
17 Warren representing Renewable Hydrogen Alliance. You've  
18 mentioned that you had commissioned a study with the  
19 university on blending hydrogen. Are the results of  
20 that study going to be public or are they going to be  
21 proprietary and confidential?

22 MR. CHAHBAZPOUR: They will definitely be  
23 public. They're actually working with NYSERDA, which is  
24 sort of New York's R and D, regulated -- part of the  
25 regulated -- part of the regulatory body. So they're

1 funding it, we're -- we're asking for funding, so it  
2 will be public. And by the way, we're also trying to --  
3 we haven't done this yet, we're also trying to partner  
4 with NREL, look into this issue, we're trying to sign  
5 the agreement with them. So anything that we do with  
6 NREL or the University of Long Island, all of those will  
7 be public reports.

8 MR. WARREN: And what are your projected due  
9 dates for those?

10 MR. CHAHBAZPOUR: On the hydrogen blending  
11 rate case, we will get an answer by the end of the year,  
12 so in the next couple of months, we will know. And  
13 Stony Brook University has already put in a proposal. I  
14 think delivery of the hydrogen blending study one will  
15 be a year from that if I recall correctly, so about a  
16 year from that you will have that.

17 I should also indicate in addition to, you  
18 know, National Grid's effort, there are also research  
19 efforts by GTI, the Gas Technology Institute, is doing  
20 some projects of their own and AGA is I think also going  
21 through some GTI. So there's also some industry  
22 projects as well.

23 MS. WHITE: Thank you. We have three more  
24 minutes if anyone else has any questions?

25 CHAIRMAN DANNER: So, Kendra, I have another

1 quick question.

2 MS. WHITE: Yeah, go ahead.

3 CHAIRMAN DANNER: So I wanted to ask about,  
4 you had mentioned there's over a hundred projects in  
5 North America and they're almost all going to  
6 transportation. The decarbonization of transportation  
7 is something that's been a big topic of discussion not  
8 only in Washington, but in other states. And I'm just  
9 wondering if other states adopt low-carbon fuel  
10 standards, are we going to see that the supply is going  
11 to be pushed in that direction, is there going to  
12 actually be supply for -- for the -- the heating sector  
13 or -- or the electric utility sector?

14 And, again, this is -- this is another -- a  
15 follow-up question would -- would be the green gas power  
16 that you're -- a program that you're putting together in  
17 New York, is there -- are you seeing that the supplies  
18 are going to be sufficient to fulfill the demand?

19 MR. CHAHBAZPOUR: So the short answer is  
20 yes, and there is study coming out that we utilities --  
21 I mean, the people who are actually presenting next, I  
22 think they're all part of the study and so is Northwest  
23 Natural. We've hired ICF to do a national assessment.  
24 Their report will be coming out hopefully in a few  
25 weeks. So it actually shows breakdown of feedstock --

1 of nine feedstocks by regions, eight out of nine of  
2 biomass and the ninth one I think is power to gas and  
3 hydrogen.

4 And when we speak to developers, they  
5 actually want to sell to utilities decarbonized heat,  
6 because the one thing that they don't like, and I think  
7 there is where we could, you know, step in and take  
8 advantage of this, is that the RINs market, even though  
9 it's very lucrative, you can't sign a long-term  
10 contract. So for now, we could take a portion of that  
11 supply and be able, as a utility, to sign a long-term  
12 contract which helps them with financing and their  
13 balance sheet.

14 So that's something that developers have  
15 approached us, and they -- they say that, they say the  
16 demand is there. If we could start, you know, getting  
17 some long-term contracts, and with the approval of the  
18 green gas tariff, the utility then will have the  
19 authority to sign these contracts that are above market  
20 at this point. So I think when those things come into  
21 play, you will see, you know, more RNG projects come  
22 online where they start to go towards the heating  
23 sector.

24 MS. WHITE: Great. Well, that brings us to  
25 12:30, so thanks so much for your time and we appreciate

1 your thoughts here today.

2 MR. CHAHBAZPOUR: Thank you.

3 MS. WHITE: So with that, our next presenter  
4 is Peter Moulton of the Department of Commerce. So he  
5 has a slide that's already up on the screen behind us.

6 So I will pass it over to you, Peter.

7 MR. MOULTON: Thanks, Kendra.

8 Yes, I'm Peter Moulton with the State Energy  
9 Office at the Department of Commerce. I've been the  
10 State's bioenergy policy coordinator for about the last  
11 decade, and in the last few years, we've really looked  
12 quite deeply into the whole issue of -- couple of  
13 questions before the UTC right now about supply and also  
14 on quality standards. So I'm going to give a quick  
15 review of some of our findings.

16 Let's see, yeah, it works. Great. So just  
17 a quick reminder that we primarily looked at sort of the  
18 biochemical generations of renewable natural gas. So in  
19 other words, coming from the anaerobic decomposition of  
20 biological materials, so it'd be landfills, wastewater  
21 treatment plants, other organic waste streams, animal  
22 manure and so on. We didn't spend as much time looking  
23 into some of the newer technologies around power to gas  
24 or gasification simply because those are a little harder  
25 to quantify and sort of open-ended on scale, but I'll

1 talk more about that in a minute.

2           So just a reminder that as we get into  
3 conversation too around quality standards, that there  
4 are sort of three different applications of RNG or  
5 biogas that have different quality standards associated  
6 with them. You can -- with nominal cleanup, you can  
7 burn that biogas for heat and power, a little more  
8 cleanup, you can use it in direct use in CNG vehicles,  
9 you don't have to quite meet the same standards as you  
10 might for distribution of pipeline system, and then  
11 finally of course there's pipeline standards.

12           So right now, when we look at the  
13 conventional sources of -- of biogas and therefore the  
14 opportunity to upgrade to it RNG, initially over the  
15 last decade or so, we've really focused at dairies  
16 because of the opportunity to also provide waste  
17 management solutions for the dairy industry. We have  
18 eight operating digesters, on-farm digesters, and they  
19 were primarily underwritten because of our RPS in the  
20 state and the ability to get double RECs for your  
21 smaller than five megawatt distributed generation. And  
22 largely through PSE they were able to get power purchase  
23 agreements for PSE's green power program.

24           And right now a lot of the -- some of those  
25 digesters are getting upgraded right now, but the main

1 one that's circled there is the big one that's over on  
2 the East Side in the Yakima Basin. And this is the one  
3 that is currently being converted into an RNG pipeline  
4 injection project.

5 Landfills, similar story. Most folks are  
6 familiar with the Cedar Hills Landfill in King County  
7 that's been injecting in the pipeline system for many  
8 years. Those developed courses come online in the last  
9 year or so. Then there are -- Horn Rapids is looking at  
10 doing the same, and then the LRI Landfill in Pierce  
11 County right now is a power sales model, but they have  
12 the ability to intertie with the gas line that runs  
13 right through there.

14 And then the wastewater treatment, you have  
15 the south treatment plant in Renton, the central  
16 treatment plant in Tacoma, now getting into pipeline  
17 injection. You have the heat and power option with lots  
18 here in the Olympia area, and Yakima and Spokane are  
19 looking at similar systems.

20 Now, wastewater treatment is a little bit  
21 different, of course, as with on-farm digesters or  
22 anytime you have AD above ground, and there's a quite a  
23 parasitic load on what the heat needs seasonally, and so  
24 your ability to provide a consistent supply of biogas  
25 for upgrade RNG can be impacted by that. So it's a fair

1 degree of seasonality.

2           So back in 2017, we contracted with WSU to  
3 do a quick assessment of the potentials for RNG as a  
4 transportation fuel in the state, and they came up with  
5 these general numbers of well, you know, if -- if we're  
6 really efficient at capturing it, using conventional  
7 anaerobic digestion technologies, not the gasification,  
8 we could be looking at as much as 9 percent of  
9 displacement of current natural gas usage. You throw in  
10 urban waste gasification, you could potentially double  
11 that.

12           The other thing WSU found was that the --  
13 you know, the RPS model for power sales has matured and  
14 that there needs to be a sort of different economic  
15 drivers for expansion of biogas capture and RNG  
16 production. And it was just discussed the market was  
17 really moving into transportation because of  
18 carbon-related fuel standards to ourself, that  
19 incentives that have been developed back in the aughts  
20 were largely expiring or were incomplete and needed to  
21 be overhauled. If you wanted to continue to incentivize  
22 biogas production, many of the definitions were dated  
23 and conflicting and so on. There's the conversation  
24 around pipeline quality standards, and that the overall  
25 policy framework around natural gas was still uncertain.



1           So as a result of that, there was a bill  
2 that was run in 2018 session, HB2580, which restored and  
3 expanded certain production incentives, tax incentives.  
4 It called for Commerce to work with UTC and Ecology and  
5 Health and others, gas industry obviously, on a broader  
6 sort of technical economic assessment of the realities  
7 of RNG potential. It also called for an exploration of  
8 various policy options with the intent of, you know,  
9 helping to inform possible pathways. There was also a  
10 direction for the public sector to start getting into  
11 preferential purchasing for RNG for their gas needs.  
12 This tied in also with the governor's Executive Order  
13 1801 around increasing changes in the purchasing  
14 process. And then also to have a regional conversation  
15 about pipeline standards to see quality standards to see  
16 if there might be some consensus that could come out of  
17 that.

18           So the result was a roadmap that I  
19 coauthored along with Jim Jenson with the WSU Energy  
20 Program, and what we did was we refined the previous  
21 production estimates, got in it to the extent possible  
22 given how disbursed and inconsistent a lot of the data  
23 is, what can we find out about organic waste streams  
24 that could be useful in biogas production. We also  
25 talked about various economic environmental benefits of

1 RNG, integration with the gas utilities, and some policy  
2 options.

3           So what I'm going to do right now is kind of  
4 talk about some of our findings around RNG production  
5 potential. We started out with the assumption that the  
6 market is going to be to get that biogas cleaned up to  
7 pipeline standards and injected into the existing  
8 pipeline grid. That tube trailer distribution might be  
9 necessary in some sort of a localized level, but the  
10 power sales model was -- was capped, and so it's really  
11 about the pipeline systems.

12           So we said okay, let's look at organic  
13 management facilities broadly defined, public and  
14 private, within five miles of the existing grid. And  
15 then let's use a transportation radius for potential  
16 feed stocks of about 30 miles. The presumption being  
17 that beyond that, the cost of transportation alone would  
18 be prohibitive in terms of getting those feed stocks  
19 into an anaerobic digestion context.

20           The intent here also was to help inform  
21 where public private partnerships might best work out,  
22 bonding capacity, for example, or use of public  
23 facilities. Where should we prioritize public funding  
24 to encourage RNG development. And then as I mentioned  
25 before, we were challenged by the fact that organic

1 waste data sets are quite variable in their quality and  
2 consistency.

3           But we started out with larger dairies, an  
4 obvious starting point, where digesters could be housed.  
5 And then we said okay, how about additional dairies that  
6 are in a relative close proximity such that you might  
7 run a slurry line for manure or you could run a low  
8 pressure gas line or you could use common facilities in  
9 terms of gas conditioning, nutrient recovery, other  
10 technologies and so on, and then sort of a hub-and-spoke  
11 model like they're trying to do over in the Yakima  
12 Basin, hooking up a bunch of dairies and then having one  
13 low level line that feeds the gas grid.

14           And then look at other sources of animal  
15 waste. Renderers, beef and poultry operations, large  
16 scale egg producers, anybody that's generating a fair  
17 amount of organic waste. And of course we have many  
18 hatcheries in the state. As we discovered, there is a  
19 lot -- lot of hatchery fish go to, you know, food  
20 programs or they go to pet food or variety of different  
21 uses, but also a lot get buried out back. And so can we  
22 find a better use for a lot of that high energy value  
23 hatchery carcass waste.

24           We look at fruit growers and brewers and  
25 distillers and then large scale food processors. And in

1 this case, we're interested in both volume as well as  
2 the energy content of the food that they're handling.  
3 So in this case, we're looking for oils, we're looking  
4 for seafood processing of any kind, things that have a  
5 very high energy density. Right now all of the on-farm  
6 dairy digesters in the state also accept preconsumer  
7 food waste to help, you know, increase their yield of  
8 biogas, so it's a very common potential application.

9           Then we looked at the facilities that were  
10 within proximity of the power line. So we said, okay,  
11 most wastewater treatment to facilities in the state do  
12 not have digesters, but many of the larger ones do  
13 because it's about handling volumes of waste. And so  
14 let's look at where those digesters are or where are the  
15 wastewater treatment facilities that could add a  
16 digester. Could take a variety of potential organic  
17 waste, not just typical wastewater treatment, but maybe  
18 they could add food waste in there and so on. And then  
19 we asked the question, well, where are the open  
20 landfills at present at different scales relative to the  
21 pipeline grid.

22           And then lastly, composting facilities,  
23 other public infrastructure around transfer stations or  
24 closed landfills that might be able to house an upgraded  
25 anaerobic digestive system, for example. And then using

1 that whole geographic system, we can start to ask  
2 queries such as okay, if we just look at high volume  
3 animal waste, what does that tell us in terms of what  
4 are the locations where we might want to site a waste  
5 management facility that can generate biogas. Here, for  
6 example, is relative to wastewater treatment that has AD  
7 and where are the high volume food processors relative  
8 to those. So that's just examples of how we could query  
9 the system to get some -- some data.

10 So at the end of it all, and this is -- I  
11 know this is a lot of detail here, I won't go into --  
12 read all of this, but this is sort of the summary of  
13 what we discovered. Right now, the three largest  
14 producers of biogas that is being cleaned up,  
15 conditioned for pipeline injection are the Cedar Hill  
16 Landfill, the Roosevelt Landfill, and the South  
17 Treatment Plant in Renton. And all three of those are  
18 currently wheeling their RNG into the California market.  
19 And it account -- it represents about 1.3 percent of  
20 current statewide fossil and natural gas use.

21 In the near term, roughly five-year timeline  
22 for a total CapEx of something close to 700 million is  
23 what it would take, you could hook up another big  
24 landfill, a couple more wastewater treatment plants --  
25 well, actually take the one landfill, two treatment

1 plants, and eight dairies that are currently generating  
2 power, convert them over to pipeline injection, add  
3 three more landfills, add nine more treatment plants  
4 that have digesters, the next tier of dairies that are  
5 of the proper scale and proximity to the pipeline  
6 system, and start to capture a significant portion of  
7 the postconsumer organic wastes that are coming out of  
8 central Puget Sound, steer that waste into high solids  
9 anaerobic digestions to capture the biogas off that,  
10 most likely in cooperation with composting operations.  
11 If you did all that, you could get another about .8  
12 percent of current natural gas use displaced.

13           Looking further out in medium term of say  
14 about ten years, hook up the next tier of landfills,  
15 treatment plants, dairies, and so on, do a more thorough  
16 job of capturing that postconsumer organic waste, and in  
17 significant diversion of other residuals, you could get  
18 to about another 1.9. So in other words, the best case  
19 scenario with the substantial investment of public and  
20 private funds is you could get to about 5 percent  
21 displacement of current natural gas using what we would  
22 call conventional anaerobic digestion technology.

23           Now, of course these are a variety of things  
24 that impact the future of the gas market and so on.  
25 We've got the gas standard that's being considered, the

1 RNG programs we're discussing today. In addition,  
2 there's the open question of whether or not the State's  
3 going to adopt a carbon-weight fuel standard or whether  
4 or not the Puget Sound Clean Air Agency regional  
5 proposal gets any tractions, that would have a huge  
6 impact on the market pricing for renewable natural gas.

7           There's also the directive for public  
8 preferential purchasing for both renewable natural gas  
9 and nutrients that come off of organic waste management.  
10 In this scenario, I think as I recall, the public  
11 agencies, the state agencies, and four-year colleges and  
12 universities collectively use about five million MMBTU a  
13 year, rough number, about 2 percent of current supply.  
14 So there's a -- there's a dedicated market there given  
15 the policy directives from Executive Order 1801 and  
16 others to move into at least providing a market for some  
17 of the RNG programs that utilities will be offering.

18           There's the exploration of the pipeline  
19 standards. We have a million dollars in capital funds  
20 we're going to be giving out this winter to dairy  
21 digesters to help enhance their biogas and efficiency  
22 programs. And then there's the multiagency food waste  
23 reduction strategy that Ecology is developing in  
24 conjunction with AG and Health and Commerce that could  
25 help inform how to steer pre- and postconsumer organic

1 waste, food wastes to AB.

2           And then there's the regional standards  
3 discussion. And I just have a little quote up there  
4 from House Bill 2580 from the 2018 session about the  
5 direction that was provided to us. So we looked at the  
6 various topics that encompass by quality standards, gas  
7 quality itself, pipeline integrity, public health  
8 concerns, the various testing protocol to be associated  
9 with quality standards around constituents, frequency of  
10 testing. There's also a number of suggestions of  
11 applications of a tiered approach where you might have a  
12 triggered level followed by different action steps and  
13 so on depending on the testing protocol. And then a  
14 wide variety of variables that inform them. You know,  
15 transmission versus distribution pipeline, so questions  
16 of scale and dilution, for example. Agriculture versus  
17 posthuman sources and what constituents you have to be  
18 concerned about. The seasonality of production and  
19 demand as we discussed briefly before. Is it a steady  
20 or transient injection and at what rate.

21           So with all those variables, we put together  
22 a work group. We actually invited folks from Idaho and  
23 Oregon to join us since we share many of the same  
24 utilities as well as folks from B.C. since they've had  
25 experience in this area as well. We had about 65 folks



1 from regulators, project developers, AGOs, agencies,  
2 utilities obviously, and so on to talk about this --  
3 this topic. We scoped out the various technical  
4 requirements, recognizing that this was not an  
5 exploration of business relationships, it's not about  
6 insurance or warranties or who pays for what and so on  
7 and so forth. This is just a technical conversation.  
8 And it also was specifically around pipeline. It wasn't  
9 whether or not you have lesser standards for direct fuel  
10 in CNG vehicles, for example.

11 So we put together a matrix that compared  
12 existing quality expectations from the various utilities  
13 and the different geographies and so on, including the  
14 work that the California Council on Science and  
15 Technology has been doing with the PUC about standards  
16 in Rule 30 and so on down in California, a variety of  
17 other technical resources from GTI and other sources,  
18 and put together an online survey. And the results that  
19 came back were quite interesting, because many -- many  
20 of the folks that participated in this are here in the  
21 room or on the phone with us today, and I just wanted to  
22 take a moment to acknowledge and thank them for their  
23 participation in this process.

24 But the results that came back were that the  
25 responses were so divergent, they were even divergent

1 within specific utilities in terms of their existing  
2 standards, what they would like to see, and then what  
3 they responded to in the survey often were divergent in  
4 various ways. So clearly, there's a broader  
5 conversation that needs to take place. And given the  
6 fact that Northwest utilities, because the Rule 30 and  
7 the -- and the science underpinning the quality  
8 standards in California, are seen as best available  
9 science, that doing anything less than that might raise  
10 liability concerns, and so there was -- really  
11 appropriate to punk this conversation over to a -- this  
12 venue here at the UTC.

13           So that's kind of where we are today. And  
14 just as a quick reminder, when we talked about capacity  
15 and generation, we didn't talk about gasification or  
16 power to gas, which is a whole 'nother world and it's  
17 very interesting. Economics, of course, are different.  
18 So this really was a conversation about existing  
19 anaerobic digestion organic wastes, but recognizing  
20 there's a great potential downstream as new technologies  
21 emerge.

22           So I believe that is it. My last slide, so  
23 thank you.

24           MS. WHITE: Thank you, Peter.

25           I just wanted to mention for everyone that

1 the slides will be posted to the docket, so if you have  
2 any questions about some of those slides, they will be  
3 available there. But with that, I will turn it over for  
4 Commissioner questions.

5 CHAIRMAN DANNER: Peter, thank you very  
6 much. So you talked a lot about the supply and the  
7 potential. What about the -- the cost. You know, in  
8 renewable energy, we've seen costs going down. Are  
9 costs going down in this industry, are the costs of  
10 anaerobic digestion going down? If -- and if they are,  
11 how does that affect supply? Is it going to be more  
12 incentive to go out and finance?

13 MR. MOULTON: Right. Well, it's -- in terms  
14 of the overall economic balance of, you know, potential  
15 revenue streams as well as cost of production, still  
16 very much in a state of evolution. A lot of times with  
17 the -- especially pre- -- preconsumer organic waste, the  
18 ability to do nutrient recovery is an emerging field  
19 that potentially has a lot of value, especially for the  
20 dairy industry, which where power sales model are no  
21 longer making -- covering the cost.

22 If we look historically with digesters that  
23 we set up on dairies, they were done largely with  
24 extensive federal funding through USDA. So the initial  
25 CapEx was mostly covered. You had motivated electrical

1 utilities under the RPS requirements to at least provide  
2 initial five-, eight-year revenue required purchase  
3 agreements. So it was able to stand up and have it be  
4 economically viable.

5 Now that the power sales model is no longer  
6 underpinning it, they have to look at a greater  
7 diversity of -- of revenue streams, which is why they're  
8 so interested in switching over to gas  
9 injection -- or pipeline injection for the  
10 transportation market because in order of magnitude,  
11 greater potential revenue.

12 But it comes with a lot of additional up  
13 front CapEx as well as operating costs in terms of gas  
14 quality. So there's a tradeoff there that we're going  
15 to have to just see how it pencils out. If we look, for  
16 example, at the Promise Energy Project over in Yakima,  
17 where they're -- it's privately financed, getting  
18 capital interested in participating in that, given the  
19 relative uncertainty of state and federal policies  
20 constructs that are deriving marking values, took a lot  
21 of conversations shall we say. But they finally agreed  
22 to jump in on it. It was a valuable project. So we'll  
23 have to wait and see how that pencils out.

24 Production costs vary depending upon a lot  
25 of it is -- is -- is feedstock costs to be frank, a lot

1 of transportation costs around feedstocks. I'm not  
2 trying to avoid your question, I'm trying to point out  
3 how complex the answer is, because it's really hard to  
4 get hard numbers on it. You're also competing with  
5 other markets for existing organic waste, be it pet food  
6 or, you know, other -- other -- most organic wastes  
7 don't just go, you know, get thrown away so -- per se.  
8 They have markets, so you're going to have to compete  
9 with those in a way that's appropriate. So there's a  
10 lot more conversation that has to go into that  
11 evaluation assessment.

12 COMMISSIONER RENDAHL: Peter, thank you for  
13 your expertise and your work on this. As I was reading  
14 through the comments yesterday and today, I thought,  
15 now, here is a place for the -- you know, for the clean  
16 power grants, clean energy grants that Commerce is  
17 working on. So I'm happy to see that this is a  
18 designation. Is this -- is it just the -- it's a small  
19 portion at this point, but we've seen the benefit of  
20 those grants for these development of new technologies  
21 where sometimes bearing the R&D costs for utilities  
22 is -- is maybe too much for the ratepayers to bear, but  
23 this gives an opportunity to share some of that. So  
24 this is -- do you see this as a continuing focus going  
25 into the future?

1           MR. MOULTON: I do. I mean, I think a lot  
2 of the economic components are improving. The cost of  
3 biogas conditioning is coming down, the cost and  
4 efficiency of nutrient recovery is improving, the  
5 ability to use anaerobic digestion as a cornerstone for  
6 broader biorefining opportunities. They were on  
7 bioplastics and so on. It's all very exciting emerging  
8 opportunity.

9           Part of the challenge for the public sector  
10 is how to best target our financial and technical  
11 resources to bring together these disparate components  
12 around organic waste management. It's hard being  
13 everyone is sort of siloed around different aspects of  
14 regulatory or, you know, different components. But one  
15 of the greatest potential sources of State funding in  
16 terms of bonding capacity is in exempt facilities, it's  
17 in waste management.

18           So if you were to develop projects like this  
19 at scale, the resources that the State could bring are  
20 substantial to making it pan out. But you obviously  
21 need to be doing a fair amount of due diligence around  
22 different assumptions about cost and revenue streams.

23           And then we have, you know, big questions  
24 yet about fundamental policy that will substantially  
25 drive market value like fuel standards. And the fact

1 that is, as I understand it, California is not far away  
2 from --

3 CHAIRMAN DANNER: What --

4 MR. MOULTON: -- a clean fuel standard.

5 CHAIRMAN DANNER: Excuse me.

6 MR. MOULTON: Yeah, sorry. California's not  
7 far away from sort of maxing out their RNG for  
8 transportation. I mean, it won't be too long before the  
9 California RNG transportation market is maxed. And then  
10 behind that will come California and what will the  
11 impacts be on that market and then where will we be at.

12 So these are -- these are fundamental market  
13 driving questions we don't have answers to yet.

14 MS. WHITE: Okay. We have five more  
15 minutes. Is there any questions from the audience  
16 including those on the phone?

17 UNIDENTIFIED SPEAKER: Just a clarification  
18 question. The percentages of the technical potential --  
19 the percentages of technical potential of natural gas,  
20 is that of all natural gas consumed in Washington  
21 including power generation?

22 MR. MOULTON: Yes, so that's -- that's  
23 current natural gas consumption. So it's current, it's  
24 not projecting it into the future. And so it is sort of  
25 a steady state model recognizing everything's dynamic

1 around it. So yeah, that's just based on current  
2 consumption overall.

3 MS. WHITE: Questions from anyone on the  
4 phone?

5 Okay. Thank you for your time, Peter.

6 MR. MOULTON: Thank you.

7 MS. WHITE: That brings us to our third  
8 presentation. I believe Angus King of Summit Utilities  
9 is on the line; is that true?

10 MR. KING: Yep, I'm here.

11 MS. WHITE: Great. If you could please  
12 start with an introduction of yourself and your role at  
13 your utility, and then please feel free to start your  
14 presentation.

15 MR. KING: Great. Thanks. My -- I  
16 apologize. My headset just died, so I'm going to be  
17 using my speaker. Hopefully that's clear enough. My  
18 name is Angus King. I'm the chief officer for Summit  
19 Utilities. We're a relatively small gas utility. We  
20 operate in Maine, Arkansas, Oklahoma, Colorado, and  
21 Missouri. And we're -- I'm -- I'm very excited to be  
22 here. I really appreciate your giving us an opportunity  
23 to talk. I'm equally excited about the potential of  
24 RNG, and I'm really glad to hear that it's -- thus far,  
25 I agree with everything that Don said about the value of



1 the gas system and the real potential for RNG to be a  
2 real cornerstone in -- in having it play a role in  
3 lower -- decarbonization of the energy system.

4 I'm happy to talk about our experience in  
5 Maine. We have just launched a program here, so I'll  
6 talk about that. We really tried to be fast followers  
7 of -- of larger utilities and smarter utilities. I give  
8 a lot of credit to Tom Murray, who's going to speak  
9 next, and to Don for their leadership in the industry.  
10 Others have been equally forward-thinking, and we've  
11 really learned a lot from all of them. So anything good  
12 we've done is because of them and the mistakes we've  
13 made were certainly our own.

14 I'll talk a little bit about the structure  
15 of our program a little bit. I'm trying to just follow  
16 the outline that was provided, the attribute details,  
17 tracking mechanisms, and little bit about the market and  
18 supply, although a lot of those details have already  
19 been covered.

20 In terms of our program here in Maine, it  
21 was approved by our commission literally yesterday, so  
22 this is a relatively timely discussion. We plan to  
23 launch it publicly on November 1st, so we were caught  
24 right at a perfect moment to talk about the program.  
25 The program is an entirely voluntary program where

1 customers are able to pay for attributes coming from  
2 renewable natural gas that's produced in a landfill out  
3 of state. There's no pipeline quality natural gas RNG  
4 being produced here in Maine right now, so we had to  
5 look outside the state, and we ended up purchasing the  
6 attributes and not the actual methane commodity  
7 underneath it.

8           So the programs I mentioned is entirely  
9 voluntary. Customers can sign up for 10 percent,  
10 between 10 percent and a hundred percent of the use that  
11 the average customer in that class uses. So it's a  
12 fixed price per month, and we give customers -- they can  
13 sign up for, as I mentioned, sort of 10 percent or 25  
14 percent, 50, or a hundred. We also give them sort of a  
15 translator to what that means in MMBTUs and dollars just  
16 depending on different people think about it  
17 differently. If someone says I want to spend \$7 a  
18 month, there is an option for that. And for residential  
19 just contact, 10 percent is \$7.44 per month, so that  
20 gives you a little bit of a sense of -- of where the  
21 customer -- customer pricing is.

22           This -- so as I mentioned, there's no  
23 pipeline quality RNG here in Maine, so we didn't  
24 purchase the gas, we just purchased the attributes.  
25 That can certainly change in the future, but it just

1 happened to be the way we could make it work this time.  
2 We do have a green electricity program here in Maine  
3 that's similar, and we wanted to try and model it  
4 somewhat on that, and also as I mentioned, on the  
5 Vermont -- on the Vermont program that's already in  
6 place with some pretty meaningful differences that I'm  
7 sure Tom will speak to.

8           We are a relatively small footprint here in  
9 Maine. We only have about 4,000 customers. So a  
10 program like is probably much easier to manage and --  
11 and we're not calling it a pilot, but with 4,000  
12 customers obviously there's some components that you  
13 don't have to -- that are -- that are just less  
14 expensive and easier to manage.

15           There's no profit built into our program.  
16 It's a straight passthrough of the cost of the  
17 attributes from what we're paying directly to the  
18 customer. And the share -- and -- and it's de minimus  
19 through marketing and administrative costs internally at  
20 least initially. Again, marketing to 4,000 people is a  
21 lot cheaper than marketing to the millions of customers  
22 that Don and I have.

23           In terms of the specific attributes, we  
24 worked with 3Degrees on the purchase of the attributes.  
25 They're intermediaries between the actual producer and

1 us. And what we did was we purchased our estimate of  
2 what one year worth of signups might be. And so we own  
3 that inventory currently, and we'll launch the program  
4 on Friday and see who signs up. And -- that's how  
5 the -- that's how we're managing inventory.

6 From -- going forward, we certainly look  
7 forward to when there's a uniform national tracking  
8 system in place like M-RETS, but given the early stages  
9 of the market and the size of our program, we chose to  
10 move ahead with our own tracking system, tracking  
11 customer signups and usage and payments and then marking  
12 them down against the inventory that we have as customer  
13 payments come in.

14 In terms of tracking the attributes and sort  
15 of the voracity of the attributes, again, 3Degrees went  
16 and visited the site, also SES Global who's a -- who  
17 does inspections as part of their business went out and  
18 visited the site and performed certification work. So  
19 we felt comfortable that what we were buying was  
20 genuinely renewable and put on to the pipeline system.

21 So that's -- that's the background on our  
22 program here. I'm happy to talk about it for hours or  
23 at least for the -- the 30 minutes that we have. I'll  
24 move on in a minute just to talk a little bit about your  
25 hydrogen question and then about the markets.

1           On the hydrogen question, we agree with Don  
2 that we think it's in the medium to long-term, a very  
3 real part of the overall decarbonization story and think  
4 that it should be treated similarly to RNG. Assuming  
5 that the pipeline requirements can be met, I think  
6 there's a fairly robust conversation about percentages  
7 and impacts on the system and blending, and I think  
8 there's still a lot of work left to be done.

9           We've also been spending a fair amount of  
10 time and, again, I think others can speak to this of the  
11 work that NREL is doing with companies like Electrocaya  
12 [phonetic] where they're taking the hydrogen and then  
13 methanizing it so that it becomes methane and you can  
14 put that onto system without any of those engineering  
15 challenges. It does add cost to the project, but if you  
16 get it at the right scale, I think those costs are --  
17 are absorbable.

18           We are looking at power to gas solutions in  
19 Maine and elsewhere and -- and really do have some --  
20 some optimism for the impact that they can have, both in  
21 marrying the electric grid, renewables, and being that  
22 storage facility. So you're changing from electrons to  
23 molecules and making the two grids interconnected and  
24 supportive of one another.

25           In terms of RNG supply and markets, there

1 certainly are some barriers, which, again, I think Don  
2 enumerated pretty well. We were able to speak with a  
3 number of potential suppliers. Admittedly they had a  
4 very wide range of pricing and volume and timing. The  
5 market, as I think has been discussed, is clearly in its  
6 early stages, at least on the heat side of things and  
7 the voluntary side of things. The transportation  
8 markets are really quite robust, and our belief is that  
9 by starting our program here and encouraging other  
10 states and other utilities to have similar programs,  
11 that's what is going to help develop that market. As  
12 Don mentioned, a long-term contract is something that is  
13 not available in the transportation market right now.  
14 And so being able to offer long-term contracts for  
15 programs like these is -- is probably something that's  
16 going to help generate and -- and build the existing  
17 market for heat-related RNG.

18           So that's why we're -- that's why we're  
19 trying to promote it here, and that's why I think we're  
20 optimistic about what's happening in other -- in other  
21 states. We do think that there's fairly large potential  
22 supply nationwide and that that will continue to develop  
23 alongside these utility -- utility programs.

24           I think that's probably where I'll stop  
25 right now and see if folks have questions. I'm happy to

1 talk a bit -- again, more about our program, how we got  
2 to it. I can't tell you how it's going to unfold  
3 because that happens on Friday.

4 MS. WHITE: Great. Thank you for those  
5 comments.

6 Again, Commissioners.

7 CHAIRMAN DANNER: Hi, Angus. I'm Dave  
8 Danner, I'm Chair of the Commission. You said you --  
9 you don't know how it's going to unfold, but I -- my  
10 question actually was, how do you think it's going to  
11 unfold? What -- what is the customer response? What  
12 are you -- what are you hearing or seeing at this early  
13 date?

14 MR. KING: I would answer that in a couple  
15 of different ways. One is by benchmarking other states  
16 and other similar programs, green -- green electricity  
17 programs, and those programs have a range of anywhere  
18 from 2 to 10 percent, I think, of uptake, some of them  
19 higher than that. And that has a lot to do with, I  
20 think, location and general education of the populus  
21 and -- and knowledge of the -- the program. So that's  
22 where we have -- that's our expectation, although  
23 between 2 and 10 is a fairly wide range. Although,  
24 again, with 4,000 people, it's really not a super wide  
25 range in terms of absolute numbers. That's what our

1 expectation would be.

2           When we roll -- when we announced that we  
3 were going to start working on this program before we  
4 filed with the utility -- with the Public Utilities  
5 Commission here in Maine, there -- we -- we were lucky  
6 enough to receive a lot of pretty good press and get a  
7 lot of support from other organizations outside of the  
8 utility. We think that there are -- that there's still  
9 going to be a lot of heavy lifting to do on the  
10 education front and it will take a while, but in the  
11 long run we think, again, education is really part of  
12 what we're biting off here as an attempt to get this  
13 program started.

14           CHAIRMAN DANNER: Okay. Thank you. And  
15 when you mention that the -- the RNG costs are basically  
16 going to be a passthrough in this -- in this project, is  
17 your traditional gas currently -- is that also a  
18 passthrough?

19           MR. KING: It is.

20           CHAIRMAN DANNER: Okay.

21           MR. KING: Yeah.

22           CHAIRMAN DANNER: Thanks. We have that here  
23 in Washington as well.

24           MR. KING: Yeah.

25           CHAIRMAN DANNER: All right. Thank you.



1 MR. KING: You're welcome.

2 COMMISSIONER RENDAHL: Hi, Angus. This is  
3 Commissioner Rendahl, and since your program is based  
4 solely on attributes, have you developed yourself or did  
5 you work with 3Degrees or someone else to develop your  
6 tracking -- so you're tracking and how -- are you  
7 planning to retire or are you using M-RETS or some other  
8 system?

9 MR. KING: We're not using M-RETS. When we  
10 started this, the M-RETS system was not -- was not  
11 really quite ready. It's -- it's probably -- I think  
12 it's in a beta testing phase now and is closer to being  
13 ready, it just wasn't when we kind of embarked on this.  
14 And I think going forward probably with a future  
15 purchase we'd look at that.

16 For the size of this program, we -- it's I  
17 think easy enough for us to track it. Again, using --  
18 using -- we did talk to 3Degrees, but we're going to use  
19 our own internal tracking using our billing system and  
20 the inventory that we've purchased and marked them  
21 against that and then put it through an audit.

22 COMMISSIONER RENDAHL: So I'm assuming  
23 you're also working with your source in terms of  
24 ensuring that you are retiring those attributes?

25 MR. KING: Absolutely. We -- we've spent a

1 lot of time making sure that we had attestations from  
2 the seller and through them -- through -- and through  
3 3Degress as well, attestations that had chain of custody  
4 and -- and a verifier's report that sort of tracked that  
5 to make sure that they weren't selling them twice and  
6 that the production was what the production was and so  
7 that we have full title to those attributes. And then,  
8 like I said, we'll retire them against the inventory  
9 internally here.

10 COMMISSIONER RENDAHL: Thank you.

11 CHAIRMAN DANNER: So do you have a -- how --  
12 how long can you hold onto them; how long can you bank  
13 the credits?

14 MR. KING: There's -- there's no rule in our  
15 tariff about it. As I mentioned, we purchased what we  
16 think is about a year's worth, and then we'll go back  
17 out and buy more as the project -- as the program  
18 evolves and that signups come in. So we don't expect to  
19 have more than a year's worth at any given time, but  
20 that's roughly the window that we're working with.

21 COMMISSIONER BALASBAS: Hi, Angus. This is  
22 Jay Balasbas. I'm one of the Commissioners. You  
23 mentioned a year 's worth of inventory of attributes. I  
24 guess you'll have to really kind of see how the program  
25 unfolds, but I'm just curious, can you, through your --

1 through 3Degrees can you buy more than one year's worth  
2 of inventory of attributes or is it -- is it on a yearly  
3 basis?

4 MR. KING: We -- we bought a single chunk of  
5 attributes in a one-time purchase. We actually also  
6 bought some for our own -- for our own book essentially  
7 using shareholder dollars in the same transaction. So  
8 as of -- as a start point to this to sort of say, you  
9 know, we're going to put our money where our mouth is on  
10 this program. So we bought those attributes plus this  
11 bank we plan to use for customers as they sign up. And  
12 we would expect to make future one-time purchases as we  
13 go unless and until we get enough of a steady stable  
14 where we feel like we could buy multiple years in  
15 advance, which obviously would be better for the -- the  
16 supplier of the RNG, but we really felt like we had to  
17 see how the program was going to go before we could  
18 commit to a certain volume.

19 COMMISSIONER BALASBAS: Thank you. And you  
20 may or may not know this, but do you know what the  
21 actual gas being produced is, what that's being used  
22 for?

23 MR. KING: Going -- I -- and I honestly  
24 don't recall exactly what it's being used for. It's  
25 being sold to someone else.

1                   COMMISSIONER BALASBAS: Okay. And then  
2 the -- the last -- last question I have is, based on  
3 that year's purchase of attribute inventory, and  
4 obviously you're launching the program here later this  
5 week, I guess what -- what will happen if you get maybe  
6 a much lower take rate from your customers than -- than  
7 what you paid for, how will you treat that differential  
8 and the cost of what you paid versus what customers will  
9 be voluntarily paying?

10                   MR. KING: Yeah, in our tariff, there's  
11 no -- there's no ability for us to roll that into the  
12 cost of gas or anything else, there'd be no cost to  
13 other ratepayers, to non- -- to -- to ratepayers who  
14 didn't sign up, so ultimately those would be shareholder  
15 costs if we ended up buying too many. The caveat there  
16 is, again, this is a fairly small customer base, so the  
17 exposure is -- is relatively limited.

18                   COMMISSIONER BALASBAS: Great. Thank you  
19 very much.

20                   MS. WHITE: Well, we still have 19 minutes  
21 to ask questions. So I heard questions from the  
22 audience and from those on the phone. Again, Amy has a  
23 microphone, so please raise your hand if you have a  
24 question.

25                   MR. BROUSTIF: David Broustif, King County

1 Government. Thanks for your presentation. Do you have  
2 a little bit more information that you could share for  
3 the biogas, biomethane producer of why they would choose  
4 to sell to you as opposed to a volatile, much more  
5 lucrative RIN market?

6 MR. KING: I mean, I can't tell you why  
7 anyone does anything, although my instinct is California  
8 market is -- is becoming saturated with lower carbon  
9 intensity fuels, and so mostly dairy projects are now --  
10 are -- are getting most of the sales, new sales into  
11 that market as the carbon intensity requirements  
12 increase. And so I think we will see some of the lower  
13 carbon intensity-type RNG projects be more available for  
14 utility-type programs.

15 In addition, the California program I think,  
16 you know, there's obviously a lot of -- a lot of -- the  
17 asset program requires a lot of work and ongoing work  
18 for the -- for the digester and my -- my -- I suppose  
19 this transaction, and they actually are doing  
20 transactions with other people as well, and maybe doing  
21 it through 3Degrees, they found it to be a more -- to  
22 make -- to make more sense for their -- for their  
23 project. But, again, I can't -- I can't really speak to  
24 that.

25 CHAIRMAN DANNER: Angus, this is Dave Danner

1 again. You mentioned that there's no -- currently no  
2 domestic sources in Maine for RNG. I know you have  
3 some -- some good-sized cities, they must have  
4 landfills, and I'm just wondering, are you seeing any  
5 potential for domestic development there?

6 MR. KING: Yeah, we do. There are a couple  
7 where they have had -- where the landfills have been  
8 producing electricity historically, and at least two of  
9 them are considering changing over from producing  
10 electricity to a generator, cleaning up the gas and  
11 turning it into pipeline quality gas. Our system does  
12 not cover the entire state of Maine. There are a few  
13 other gas utilities that cover different parts.  
14 Unfortunately for us, those facilities are in those  
15 other utilities' territories, but there are at least two  
16 that I know of that are working on that as a solution.  
17 So we expect that there will be some pipeline quality  
18 landfill facilities in -- in Maine in the relatively  
19 near future.

20 MS. WHITE: Great. Thank you, Angus. I  
21 know we got a bit early of a start there. So -- oh, we  
22 have another question.

23 Go ahead, Lisa.

24 MS. GAFKEN: Angus, this is Lisa Gafken with  
25 the Public Counsel Unit here Washington, and I had a

1 question. You talked a little bit about the pricing and  
2 I understand it's based on the percentage that the  
3 customer might choose to take of the RNGs, at least the  
4 attributes. Could you talk a little bit more about how  
5 that pricing is -- what are the components of the  
6 pricing and -- and how that was determined?

7 MR. KING: Sure. So we're -- we purchased  
8 it from the producer on a straight per decatherm cost,  
9 and that's how we're passing it on to our customers. So  
10 our customers -- what we've essentially done is we've  
11 calculated what a typical residential customer uses in a  
12 given year and divided it by 12. We thought that having  
13 a more balanced bill of the same amount every month  
14 would be easier than having a very large adder in the  
15 winter and a much smaller adder in the summer.

16 And so we divided it by 12, took that  
17 monthly average, and then multiplied it times the price.  
18 So the class average monthly usage is about .74 MMBTUs  
19 for a residential customer here, and with the price of  
20 \$10, that's \$7.44 for a customer. Again, that's for 10  
21 percent of the usage. Does that answer your question?

22 MS. GAFKEN: Yes. Thank you.

23 MS. WHITE: Last call for any questions?

24 CHAIRMAN DANNER: Yes, I have.

25 This is Dave Danner again. I just wanted to

1 get a sense of the political environment you're playing  
2 in. It sounds like this is something you brought  
3 forward to your commission. Do you have state policies  
4 that would be pushing its direction? I mean, renewable  
5 portfolio standards, any kind of climate targets, that  
6 kind of thing?

7 MR. KING: There are climate targets, but  
8 not directed at the gas utility sector right now. So we  
9 really did bring this forward out of our -- of our own  
10 volition. As I mentioned, we're big fans and followers  
11 of the folks in Vermont and New York and Southern  
12 California and other places, and we decided that it was  
13 something we wanted to do, partially to help lead the  
14 policy discussion when -- when it does get going and  
15 also just to play a role in the overall education of  
16 what the gas infrastructure can do in terms of  
17 decarbonizing the energy system.

18 So we decided it was the right thing to do,  
19 and obviously one of the questions we got when we were  
20 moving through the -- the approval process was why are  
21 you doing this now when the systems are not fully  
22 functioning and the -- and the markets are fairly  
23 nascent. We just decided that the educational benefits  
24 were worth it, and we're -- so it's really being driven  
25 by us, but we -- we think that in a -- in the



1 environment where we live right now here in Maine or --  
2 or even anywhere in the U.S., doing this kind of thing  
3 is the right thing for the conversation today.

4 CHAIRMAN DANNER: All right. Thank you very  
5 much. I appreciate that.

6 MR. KING: You're welcome. Thank you.

7 MS. WHITE: Final round for last call?

8 Great. Thanks so much for your time. I  
9 appreciate your comments here today.

10 I know that Tom Murray of Vermont Gas was on  
11 the line for the introductions. Are you still on the  
12 line, Tom?

13 MR. MURRAY: Yes, I am.

14 MS. WHITE: Great. Well, if you could  
15 please introduce yourself and then feel free to start  
16 your presentation.

17 MR. MURRAY: Okay. Great. My name is Tom  
18 Murray. I'm the vice president of customers and  
19 community here at Vermont Gas, and I oversee our -- our  
20 efficiency, our sales and marketing, our innovation  
21 agenda, government relations and a few other things.  
22 We're a small gas utility. We've got 50,000 customers  
23 in the northeast corner of Vermont serving three  
24 counties. We're the only gas utility in Vermont. And  
25 just like many of the presenters and folks at the

1 workshop, we're in a -- in a state that is committed to  
2 addressing climate change, and we as a utility are also  
3 committed to doing everything we can to reduce our  
4 carbon footprint.

5           And so along those lines years ago we  
6 started talking about selling renewable natural gas. We  
7 filed a tariff request to get that program approved, and  
8 we launched the program for going on a year and a half  
9 now. And I assume my slides are up. I'm going to go to  
10 the second slide. I think to date, we're -- we were the  
11 only gas utility for quite a while, but there are a few  
12 others as Tom mentioned and -- and -- and Angus  
13 mentioned that have voluntary RNG programs.

14           We -- at the time we developed the program,  
15 there wasn't something to model after, although I did  
16 closely look at the -- the program that Fortis British  
17 Columbia developed for renewable natural gas. So much  
18 of what my program is was with -- garnered from that.  
19 We developed the accounting mechanism as you folks have  
20 talked a little bit about that. Basically, you know,  
21 how do you track the supply and the attributes and how  
22 do you retire them and how do you bill for them and make  
23 sure that the billing was proper and all that stuff.

24           Our program, you know, much of what you'll  
25 hear in this discussion is kind of the chicken and the

1 egg thing. In fact, that Angus' situation of being able  
2 to get, say, a limited amount of supply is more of the  
3 exception than the rule. Generally a producer wants you  
4 to sign longer term contracts, and that's what we're --  
5 we've got several long-term contracts that are -- that  
6 are in the works right now. And when you do that,  
7 especially in a voluntary program, you run the risk of  
8 over- -- overshooting your [inaudible] if you will, in  
9 terms of having excess supply.

10 And so our program in its inception -- in  
11 its inception was basically we're going to sign  
12 contracts for more than we've sold today, we're going to  
13 try and sell the gas as much as possible. We told the  
14 regulators that there's a wholesale market for RNG,  
15 which you folks have talked about today, that's our  
16 second path. And if by chance we have excess RNG that  
17 we're not able to recover, we'd like to be able to flow  
18 that to our gas supply.

19 So our program effectively allowed that  
20 structure. And I think to date, we haven't had to  
21 wholesale any of our supply, and as we move forward,  
22 we're probably going to talk about having both a  
23 voluntary program and also a base supply program meaning  
24 that we think our -- our charge to address climate  
25 change is -- is important enough that we start to

1 feather RNG into our supply just like the electricians  
2 have, and we -- we're starting to have that discussion  
3 with regulators now.

4           The -- our -- one of the things that we were  
5 wanting to do when we developed this program was one,  
6 being transparent; and two, hopefully develop it as a  
7 model for other utilities to -- to use, and thankfully  
8 some of my colleagues before me on this workshop has  
9 talked about that. So there are -- the program is fully  
10 documented on our website, going through the -- the --  
11 the -- the docket, the original docket, going through  
12 the accounting mechanisms, going through the marketing,  
13 and the -- the -- all the claims and things that go  
14 along with being in the renewable voluntary market,  
15 there's kind of a whole legal ether around developing  
16 these programs with integrity and making sure that both  
17 the -- you know, the consumers, the regulators, all your  
18 stakeholders are -- it's clear what your program does  
19 and that your claims can be validated.

20           And -- and Angus talked a little bit about  
21 that, we developed a third-party certification, which  
22 really is a process that is very similar to what's done  
23 for the rim. We -- we use the same kind of rubric  
24 around verifying renewability, having an engineering  
25 audit of the production site to make sure that the

1 supply is legitimately renewable, that it was injected  
2 in, that we had the possession -- possession of all the  
3 environmental attributes and so on and so forth.

4           Next slide I kind of talked about these  
5 ones. It sounds like in this group these are somewhat  
6 redundant. I know Vermont does have a -- numerous  
7 climate change goals. The -- the -- the big shiny orb  
8 that's been out there for many years is to be 90 percent  
9 renewable by 2050, but there are many other layers of  
10 carbon reduction and milestones along the way.  
11 Obviously the -- the more recent studies from the IPCC  
12 and -- and the Paris Accord even accelerate the  
13 timelines that were envisioned when we set 90 by 50 goal  
14 many years ago.

15           So as a gas utility, we're committed to  
16 decarbonizing our system. We think there's a world  
17 where we might be able to get 60, 70, 80 percent  
18 decarbonized, and that's through a combination of RNG,  
19 biomethane reducing load. Again, we're an efficiency  
20 utility as well, so we provide efficiency services  
21 that's called -- that's central around power to gas and  
22 hydrogen injection, and we think there's a -- a very  
23 innovative merit of these technologies as we go forward.

24           And I think when we sit at this table in  
25 five and ten years, many of these technologies are going

1 to be vetted and in place, and hopefully the cost per --  
2 production costs are going to be down to a competitive  
3 level, and I think our future from a -- from a pipeline  
4 system, whether it's delivering hydrogen, natural gas,  
5 or any combination of the two, is going to be incredibly  
6 value in particular in -- in -- in the colder climates  
7 like most of the folks on this call today.

8           And lastly, I talk a little bit about our  
9 supply contract. We -- we -- our -- our supply contract  
10 effectively started slow because we've got some projects  
11 that we're developing that are larger. So we've got --  
12 we've got gas from a landfill in Quebec, which we get  
13 our gas from Quebec. Many of you might have heard of  
14 all the constraints up in the New England region around  
15 gas supply. And Don from National Grid could give a  
16 whole 'nother workshop on that, but we're actually  
17 somewhat immune to that so we -- because we get  
18 connected through the Canadian system, and we have a  
19 very stable supply pricing.

20           And we've also gotten some to -- to -- gas  
21 effectively to bridge us to our longer terms of life  
22 contracts from a waste treatment facility in Iowa that  
23 has effectively a virtual path that shows that it can  
24 get here in terms of our supply. But our longer term,  
25 we want to have projects that, you know, I can point to

1 a customer and say, you know, here's the farm that  
2 you're getting your gas from or here's the -- project.

3 So we've got a large farm digester that --  
4 that a project is underway right now. That's going to  
5 be online early next year.

6 We've got a food organics digester up in --  
7 Ontario that is under construction. And much to the  
8 earlier discussion, we're looking at different farm  
9 cluster projects, how can we build a story around the  
10 local based RNG, and -- and really Vermont kind of  
11 farm -- iconic farm economy, and we help that economy  
12 around many issues that we discussed earlier, you know,  
13 water quality issues, waste management issues, clean  
14 energy issues. Those are [inaudible] in all those  
15 things and how can we use our infrastructure to -- to  
16 help support those objectives and to help our -- our  
17 system deliver clean energy and fuel for folks in  
18 Vermont.

19 So I did give one example on this cost  
20 example. So our program is a -- is an attribute  
21 program, but, you know, what I tell customers is, you  
22 know, you're -- you're buying the production capacity at  
23 a facility. It's -- you know, I'm not -- I'm not  
24 promising that it got to your burner in your basement,  
25 but effectively by signing up for our program, you can

1 be assured that, you know, renewable supply has  
2 effectively displaced fossil supply that would have had  
3 to come out of the ground to serve your needs.

4           And this is just an example, kind of rough  
5 example of how we get to our -- our attribute value or  
6 our -- we call it our REC value is effectively we're  
7 buying RNG for around \$16 and NCF -- our average natural  
8 gas with the -- with some delivery cost if you will is  
9 around five. And so the RNG attribute value is 11. So  
10 if you're a customer that's -- you know, these aren't  
11 our retail rates, but just -- just go with me on this.  
12 If you're paying \$5 for your NCF of gas in your boiler  
13 today and you want to go to a hundred percent RNG, you  
14 would get an \$11 adder charge on top of your -- of  
15 your -- your bill essentially. So you would be paying  
16 16 if I'm -- I'm working the math backwards if you  
17 follow my logic here. So that's how the program works.  
18 If a customer signed up for 10 percent RNG, they would  
19 pay \$1.10 if that makes sense. And I'm happy to answer  
20 questions.

21           We also do have a program that allows  
22 customers to buy the attributes over the course of 12  
23 months, much like Angus talked about, to spread it out  
24 so they don't have a spike in the winter months. And  
25 we've got a lot of folks that have taken advantage of



1 that.

2 Overall on -- on our supply, we've got  
3 about, you know, 40,000 MMBTUs that we've already flowed  
4 through our system of RNG. By the end of next year,  
5 we'll have about 300,000 MMBTUs of RNG. Today as I sit  
6 here, about half of that is committed to customer sales,  
7 and the rest of it I suspect will probably not -- we  
8 probably won't be wholesaling it. We may well be just  
9 feathering it into our overall supply, and we're looking  
10 at a couple of other projects that may bring us another  
11 500,000, you know, getting -- getting us close to a BTS  
12 of RNG in the next several years in our system, which  
13 would be effectively about -- about 10 percent of our --  
14 of our -- our retail sales.

15 So that's really the highlight. I'm happy  
16 to answer questions as it would -- this workshop has  
17 been very interesting, and a lot of my topics have been  
18 touched on by others. So I'll -- I'll leave it up to  
19 the -- the group there to ask me questions and I'm happy  
20 to go down any number of rabbit holes you'd like to go  
21 down.

22 MS. WHITE: Thank you, Tom.

23 And, again, for everyone, the PowerPoint  
24 will be posted to the docket, and for those that didn't  
25 catch it earlier, the docket number is U-190818. And

1 with that, we'll again turn it over to Commissioner  
2 questions.

3 COMMISSIONER BALASBAS: Hi, Tom. This is  
4 Jay Balasbas. I'm one of the Commissioners. Thanks for  
5 you presentation. I just wanted to ask you as, you  
6 know, your program's been around for about a year and a  
7 half. I'm just curious as to what kind of interest  
8 you've drawn from your customer base as to, you know,  
9 how many customers are buying those attributes and are  
10 you seeing growth in that?

11 MR. MURRAY: Yeah, it's -- we've -- we're --  
12 we've been a little held back on our marketing efforts  
13 to some extent because we haven't -- our supply has been  
14 ramping up basically. So -- so I think we've got only  
15 about a hundred residential and a couple dozen business  
16 customers on there. And once we're -- we get our -- our  
17 larger supply contract coming in early next year, then  
18 we're going to be really ramping up our marketing.

19 We have surveyed our customers on a couple  
20 different occasions to see what the appetite is for RNG,  
21 and it's the -- the -- the customer support has been --  
22 you know, surveys has been fairly strong. You know, I  
23 think a couple different surveys landed at like 87  
24 percent of customers would be willing to pay, you know,  
25 10 percent more for RNG or some variation on that

1 question, but it was always in the mid 80s. It's a  
2 little bit like a mom and apple pie question, because  
3 when you actually ask them to part with money, your 80  
4 percent -- your 87 percent turns into 13 percent that  
5 actually subscribes. I would be happy if we were to get  
6 the 13 percent.

7 I think, you know, Angus talked a little bit  
8 about some numbers around penetration. The -- again,  
9 you guys in your -- in your backyard or in your front  
10 yard, you've got Fortis. Fortis has been fairly  
11 successful in ramping up their program when they  
12 effectively more recently socialized about half of the  
13 adder. So what is my 11 on my little adder example that  
14 I gave you, in Fortis' world, they socialize half of  
15 that, so the adder in -- in Fortis is only like I think  
16 650 or 7-. Their cost is a little higher. But the  
17 bottom line is their -- their sales actually moved up  
18 dramatically based on that experience from my  
19 understanding.

20 COMMISSIONER BALASBAS: All right. Thank  
21 you very much.

22 CHAIRMAN DANNER: Hi, Tom. This is Dave  
23 Danner. I'm the Chair of the Commission here. I was  
24 just curious. I mean, you said you're the gas utility  
25 in northwest part of Vermont. Is gas the primary

1 heating sour- -- heating fuel in Vermont?

2 MR. MURRAY: No, it isn't actually. We are  
3 second only to Hawaii in terms of the number of homes on  
4 the gas system, smallest I should say. So we serve  
5 50,000 out of, you know, Vermont's 350,000 homes and  
6 businesses. And certainly in our footprint, you know,  
7 95 percent of the customers have signed up for the gas,  
8 but most of -- most Vermont is heating through oil and  
9 propane.

10 CHAIRMAN DANNER: Wow, okay. And so do you  
11 see any potential with RNG actually growing the network  
12 for gas overall?

13 MR. MURRAY: You know, I think that large  
14 expansions of -- of the gas infrastructure in Vermont  
15 are probably going to be a little challenging because  
16 it's, you know -- we've -- we're looking at different  
17 models. Yeah, so I -- but focusing on decarbonizing  
18 what we have and some small [inaudible] in -- in  
19 different pockets is really our strategy.

20 CHAIRMAN DANNER: Okay. Thanks.

21 COMMISSIONER RENDAHL: So, Tom, this is Ann  
22 Rendahl. I just wanted to follow up. It was on your  
23 third slide. I think you were talking about this in  
24 terms of the goal of the decarbonization for your system  
25 of 60 to 70 percent. And you mentioned both RNG and

1 biomethane, and I was thinking they were the same thing,  
2 but if you -- because I'm not as technically involved in  
3 this as other people, is there a difference between RNG  
4 and biomethane in terms of how it would be contributed  
5 to decarbonize your system?

6 MR. MURRAY: Not in how it's contributed to  
7 the decarbonization, but, you know, biomethane is what  
8 we think of today, you know, digester gas, landfill gas,  
9 stuff that's created -- created from decomposing waste  
10 in some way. But when we talk about -- when we talk  
11 about RNG, we see RNG as the -- the -- the -- the top of  
12 the pyramid and under that, you've got biomethane,  
13 you've got hydrogen, you've got -- we sell Syngas, which  
14 is blending hydrogen and carbon together to create a  
15 renewable gas effectively. And if you take renewable  
16 hydrogen created from excess renewable electricity and  
17 you take carbon captures from a large manufacturer, for  
18 example, that effectively is a renewable resource if you  
19 blend those together and [inaudible]. We like that  
20 because RNG is the broad category and different  
21 technologies will fit under that structure.

22 COMMISSIONER RENDAHL: So for RNG that might  
23 be essentially the pipeline quality gas or the  
24 distribution system quality gas and that you might be  
25 able to use other forms of gas for certain industrial

1 uses that don't have the same issues of safety or  
2 quality that the distribution system might; is that --  
3 is that what you're thinking?

4 MR. MURRAY: Each one of them has  
5 different -- you know, so you guys have talked a little  
6 bit about pipeline quality around biomethane, what we're  
7 talking about today. Hydrogen brings up some different  
8 issues, and I think Don and Angus both talked about  
9 those. When you get -- when you get to a world of  
10 synthesized gas where you're blending carbon and  
11 hydrogen, you'll get to some other issues there.

12 So each one of those we looked at kind of  
13 different technological challenge, but you're all  
14 circling around stage four, and all of them get you  
15 there. It's just making sure that when you inject it in  
16 the pipes, it's done safely and it's done in a way that  
17 doesn't damage either the pipes themselves or -- or  
18 customer equipment and things like that.

19 COMMISSIONER RENDAHL: And one other  
20 question. You talked about your virtual supply from the  
21 water treatment plant in Iowa. So essentially you're  
22 purchasing the gas and attributes, while the actual gas  
23 is not necessarily going to the system, you're paying  
24 for that and the customers are getting the benefit of  
25 that; is that the assumption?

1                   MR. MURRAY: Yeah, yeah. And there is a --  
2 you know, it's -- frankly the example I would use for  
3 the LCFS is that, you know, the landfill that we're  
4 purchasing gas from in Quebec is selling gas to  
5 California for both RINS and LCFS. So that's -- that's  
6 the beauty of the interconnected pipeline system in  
7 terms of how it -- how it can afford that kind of  
8 delivery of -- of renewable fuels.

9                   COMMISSIONER RENDAHL: Right, because we  
10 know the actual molecules are not necessarily getting to  
11 the customer.

12                   MR. MURRAY: Yeah, and this is a debate I'm  
13 sure you guys will have. I mean, at some point the  
14 beauty of both the electric grid and the gas grid is  
15 that it's enabling renewables to come on in a very  
16 dynamic way that supports our goals both on the gas and  
17 electric side to decarbonize our footprint. And to --  
18 to overanalyze that, is really to handcuff the biggest  
19 asset that those -- those integrated networks provide to  
20 us.

21                   MS. WHITE: Great. With that, we will open  
22 up to questions from the audience.

23                   MR. EPLING: Ralph Epling, Sustainable  
24 Energy Ventures. Since decarbonization is the ultimate  
25 goal here, are you tracking carbon intensity of your

1 projects?

2 MR. MURRAY: We are and we're -- we're  
3 working toward that as I should say basically. So we --  
4 today our program is a renewable program. We're not  
5 making specific carbon claims, and it's partially  
6 because we had some initial supply projects. Our longer  
7 term supply projects as they come online will have  
8 carbon intensity -- specific carbon intensity studies  
9 done, and we will provide a carbon score that will be  
10 effectively a weighted average of our projects for  
11 customers. And so that will be our -- that's our end  
12 state. Really next year we'll start doing that, and as  
13 new projects come online, we'll be blending in and  
14 recalculating our carbon intensity overall.

15 MS. WHITE: Are there any questions from --  
16 oh, I see another one.

17 MR. RICKS: Kevin Ricks, Klickitat PUD.  
18 It's more of a statement than a question, but regarding  
19 the California program, we found out in our own program  
20 California has started to take into account the distance  
21 of the facility from where the consumption happens. So  
22 eventually out-of-state producers selling into the  
23 California market are going to get priced out because of  
24 a higher CI.

25 MR. MURRAY: Yeah, I mean, that's -- that's



1 probably inevitable. I think there's a lot of movement  
2 to finally get a lot of California projects on. Long  
3 term, you know, the closer we can get the projects, the  
4 better is my view, and that's really where we're headed  
5 from a long-term strategy.

6 MS. WHITE: Any questions from anyone on the  
7 line?

8 MR. ANTONOFF: This is Jayson Antonoff with  
9 i-Sustain. And thanks for the presentation. Since you  
10 offered to go down any rabbit hole, I'm kind of curious,  
11 has there been any discussion -- you mentioned that  
12 Vermont is very agricultural-based, a lot of small  
13 farms, is there any policy discussion at the state level  
14 of getting beyond just environmental attributes, but  
15 talking about the rule of RNG as an economic development  
16 engine opening up markets to help make the small farms,  
17 you know, provide a more stability?

18 MR. MURRAY: Yeah, and I went into that a  
19 little bit. I think, you know, the farm projects we're  
20 looking at are going to get a revenue stream off of  
21 this. But really when we look at the nexus of the clean  
22 water issues, so some of you may know, we've got Lake  
23 Champlain literally a half hour from my office here, a  
24 beautiful lake, but it -- it does have some water  
25 quality issues, and -- and some of that is attributed to

1 farms.

2                   And so how can we help with farm digesters  
3 that will have fossil fuel facilities themselves. So --  
4 and that is an economic driver, one from a prior  
5 sustainability point of view, and two, it's the right  
6 thing to do for the lake. And -- and lastly, as we do  
7 our organics ban that's gradually going into effect here  
8 beginning next year, there's going to be more organics  
9 coming into the waste stream, and how do we take  
10 advantage of these decentralized farm digesters to  
11 manage that waste stream.

12                   MR. ANTONOFF: Great. Thank you.

13                   MS. WHITE: Okay. I'm not hearing any more  
14 questions from the phone.

15                   So with that, thank you again for your  
16 presentations and those for other presenters that have  
17 spoken so far today. But we currently have a 30-minute  
18 break scheduled. We're running about 15 minutes ahead  
19 of time. So since we had a longer break this morning, I  
20 first want to see if anyone would like to keep the  
21 30-minute break or if people are okay with coming back  
22 in 15 minutes? Getting nodding heads for the 15-minute  
23 break. Okay. Great. With that, we will see you all  
24 again at 2:00 p.m.

25                   (A break was taken from

1 1:45 p.m. to 2:05 p.m.)

2 MS. WHITE: Welcome back. So we're going to  
3 move into item 6 on our agenda for today, which is  
4 utility reflections on panel presentations. So in lieu  
5 of having a traveling mic, we're going to request that  
6 the utilities come to the table up front. We will open  
7 it up to any utilities that wish to volunteer and then  
8 after that, I have a randomly generated list of  
9 utilities to call forward.

10 So any volunteers? There we go. If you'll  
11 start with an introduction of yourself and any of the  
12 members of your team that might also be commenting and  
13 then feel free to provide your reflections.

14 MR. EINSTEIN: Make sure I hit the right  
15 button here. Hello. Will Einstein. Thank you for  
16 holding this workshop today. I am the director of  
17 product development at Puget Sound Energy, and I have  
18 with me Bill Donahue, who has a longstanding crew  
19 managing a lot of our gas supply elements. I -- I guess  
20 I'll take the -- the statement of the question about  
21 reflections literally because some of this is -- is, I  
22 guess, in addition to the comments and other things that  
23 we filed individually as well as part of what we sent in  
24 with our peers in the Northwest Gas Association.

25 I -- I would start out, and I'll let Bill

1 talk a little bit about the supply elements, but from a  
2 reflection purpose, it strikes me as being very  
3 interesting that many of -- much of what we're talking  
4 about is very similar to the conversations we had 15  
5 years ago as we started our -- in our case, because  
6 we're a combined fuel utility, on the electric side are  
7 green power programs. And we had a lot of conversation  
8 at that point about, you know, what should we do, where  
9 should the resources come from, we had a State  
10 requirement that we had to offer these programs.

11 And that program has proved to be very  
12 successful. We now have 55-plus thousand -- or 52,000  
13 members of our strict green power program, we have  
14 7,000 -- almost 7,000 customers of our solar choice  
15 program. We also have had for several years a carbon  
16 balance offset program, which has six-plus thousand  
17 customers who are joining that, and all three of those  
18 programs have been growing at a very, very steady clip  
19 over the last year and a half or so because we changed  
20 how customers can subscribe to those programs.

21 And so it's really interesting to me to see  
22 how we're talking about yet another let's add a  
23 renewable -- voluntary renewable program for customers  
24 in this space, yet the development of it is basically  
25 the same as what we've been talking about in renewable

1 energy programs. So a long way of saying I feel really  
2 confident that many of the things that we've talked  
3 about today are things that we've already either seen or  
4 factored in from a customer program design standpoint in  
5 ways in which we can put that together.

6 On the supply side, there are also many  
7 similarities. Many of the entities that we're talking  
8 about purchasing renewable gas from, we are actually  
9 purchasing power from today through our Schedule 91  
10 contracts, which start to expire actually over the next  
11 several years. Those Schedule 91 contracts were put in  
12 place largely to help these early generators of  
13 renewables get off the ground because they were small,  
14 and they wanted long-term fixed price contracts to be  
15 able to take to the bank to get delivered.

16 And so many of the challenges in that space  
17 are very similar, and now that those electric contracts  
18 are ending, a lot of these folks are looking at ways in  
19 which they might be able to convert the sales to natural  
20 gas and -- and sell us the renewable gas that they've  
21 been running engines to make electricity out of for  
22 years.

23 I think the biggest challenges that we see  
24 are around the supply side of the conversation and how  
25 do we address many of the things that our customers

1 expect us to figure out both large and small, which is  
2 how do we get the gas to the natural gas grid, how do we  
3 price it, how do we recover the costs, all of those  
4 elements that have been talked about by some of our  
5 peers in the Northeast.

6           And so reflectively I would say, you know, I  
7 think there are some -- some real opportunities for us  
8 to -- and it's interesting to hear, you know, Fortis is  
9 socializing 50 percent of their cost. You know,  
10 there -- there are a lot of opportunities depending upon  
11 how we structure this to make this an affordable product  
12 for customers on the voluntary side. And think about --  
13 I thought it was interesting to hear one of the other  
14 presenters talk about how their program calls for  
15 essentially what this bill talks about a little bit as  
16 well, is it's going into the portfolio and feathering it  
17 in, when there's surplus what from the voluntary  
18 customers are -- are procuring.

19           And so it's nice to see how those two things  
20 fit together because frankly, in the context of our  
21 green power programs from years ago, we didn't -- there  
22 wasn't as much of a concept of how the two can work  
23 together. It was seen as sort of we have to keep them  
24 very separate and apart cost-wise. And so I think  
25 thinking through and -- and a lot of our comments in

1 writing add to answer some of the questions the  
2 Commission posed around how to address some of these  
3 elements on the supply side as well as in the ratemaking  
4 around the other elements.

5           So I think that's -- we look forward to  
6 having that conversation with you about how to -- how to  
7 best land those pieces, but they're -- they're -- they  
8 don't seem to be insurmountable challenges to me because  
9 if we price the program right, voluntary customers will  
10 buy. And pricing it right for this type of program is  
11 going to be a little different than pricing that program  
12 right for things we've learned on the electric side.  
13 And so I guess I'll let Bill offer anything else he  
14 wants to say.

15           MR. DONAHUE: I'm not sure you didn't cover  
16 it already. There were other -- there were other  
17 questions in the -- in the overall structure category  
18 that of environmental attributes and we've heard  
19 mentioned today are carbon intensity -- well, let me  
20 back up a second.

21           Many of the utilities in the room, I think  
22 all of the utilities in the room and many from across  
23 the West have been participating in renewable gas forums  
24 and education processes through the Western Energy  
25 Institute. And as such, we've been trading program

1 ideas, carbon intensity ideas, the binary approach. In  
2 fact, at our last conference, which was just about a  
3 month ago, there was even talk of developing perhaps an  
4 RFP for all of the states in the West to adopt one  
5 tracking system. That -- that would allow, then, the  
6 ability for parties to trade or -- or dispose of  
7 surpluses rather than put them entirely on -- on  
8 individual customers.

9           The -- and -- and then how are each of those  
10 attributes valued and would there be, you know, a market  
11 and -- by facilitating a West-wide approach, we might --  
12 we might find some greater value for all participants,  
13 especially some of the smaller utilities or areas where  
14 there's less RNG likely to be developed. Not all rural  
15 areas are candidates for dairy, and many of them don't  
16 have sewage treatment plants that would be  
17 cost-effectively converted to RNG supply.

18           CHAIRMAN DANNER: Who -- who would  
19 administer that kind of a tracking program?

20           MR. DONAHUE: The thought was an  
21 independent -- an independent body where we would pay a  
22 small transaction fee. I think there is a -- I think --  
23 I don't know the exact term. I think green -- Green E  
24 runs a program similar to that for RECs, and -- and so  
25 it's about -- and some of the California utilities have



1 been tracking this and know some of the individual  
2 parties involved. But the talk was, hey, we're all  
3 going to be doing this, why invent the wheel four or  
4 five times. So that's -- that's one area.

5           And then a lot of -- a lot of discussion  
6 on -- on cost recovery mechanisms because really, the  
7 whole idea with the supply, we've talked to a number of  
8 suppliers, the big hurdle is the connection to the grid  
9 and -- and who's going to pay for it. It adds because  
10 most of these locations are not right on a 16-inch main  
11 in the middle of Seattle. There -- there's a couple  
12 that are -- that are very close, but -- but even in --  
13 in the -- in the areas in the -- in the cities, you --  
14 you need to be able to blend the supply so it isn't all  
15 going to one customer.

16           So the cost of connection is a significant  
17 issue. It could add -- it could add perhaps 20 percent  
18 to the cost of the gas if it's -- if it's spread out  
19 only over that quantity of gas. The example we saw \$16  
20 RNG versus \$5 natural gas, well, the difference here in  
21 Washington is the natural gas is around \$3, but the rest  
22 of the comparison was fairly valid. And -- and again,  
23 the -- the big issue is the financing and the long-term  
24 contract. That's why we value the idea of -- of one  
25 program for voluntary either by dollar or by percentage

1 or volume, but the developer requires all of the gas to  
2 be bought. They -- they can't just finance on part of  
3 their output.

4 So what do you do with the -- with the  
5 difference? If you're going to pay the same price and,  
6 again, the idea of feathering it in, managing to not  
7 exceed the 5 percent, there's another whole issue on  
8 identifying what that 5 percent is, and we have ideas.  
9 Most of them have been conveying, I think, in our  
10 comments from the Northwest Gas Association.

11 Gas quality, we have already talked amongst  
12 the utilities and with the interstate pipeline. They  
13 have -- interstate pipeline has now connected three  
14 projects or will be. The third one will be connected in  
15 a couple of weeks. All have the same gas quality  
16 standards in individual contracts. They have been  
17 encouraged and they are now developing a standard to put  
18 in their tariff unique to RNG. And it's -- it's going  
19 to be, I guess for lack of a better term, California  
20 light, trying to take the best and -- and -- and  
21 eliminate the worst, if you will.

22 The -- the parts that are difficult to apply  
23 or -- or lack the total science behind it and to try and  
24 come up with -- and I don't want to overstate. I don't  
25 know where it's going, but we are -- we are as four

1 utilities committed to work together with the pipeline  
2 to develop a standard that doesn't have us competing  
3 with who has the lowest standard and can attract the  
4 most. Because ultimately, if it goes to the interstate  
5 pipeline, it ends up in one of the four utilities  
6 systems. So we would like to see a uniform standard.  
7 And I think that's about it, if you have other  
8 questions.

9 COMMISSIONER BALASBAS: Thank you. So I  
10 think this is a question that applies to all four  
11 utilities, but since you're the first here, I will pose  
12 it to Puget. But I think I would pose the same question  
13 to Avista, Cascade, as well as Northwest Natural. You  
14 know, I was listening to both Will and Bill to hear the  
15 issues that you brought up, does it -- I guess from what  
16 I'm hearing, does it make sense, you know, before we can  
17 even get to the question of what kind of voluntary  
18 tariff program you can ask -- or you could offer, does  
19 it make sense to try to tackle that issue of how do we  
20 get our arms around the environmental attributes,  
21 tracking, retiring them, kind of getting to that piece  
22 as one of the first things to tackle? Or I mean,  
23 obviously some of this could you do simultaneously, but  
24 it seems like from the presentations we heard earlier as  
25 well as the comments you brought up, that seems to be

1 one of the biggest hurdles at least initially.

2 MR. DONAHUE: My observation is that I was  
3 very much educated over the process of several of these  
4 RNG workshops. Tracking carbon and walking one landfill  
5 project through the whole LCFS registration process, I  
6 don't think that we want to double the size of state  
7 government to be able to do what the California air  
8 quality -- the air resources board does down there. I  
9 think a simpler approach, given -- given that we have a  
10 broad range and mix of potentials of really low carbon  
11 intensity and some higher carbon intensity, but they are  
12 all significant reduction, that perhaps taking in binary  
13 approach of saying it's renewable, it could be  
14 certified, develop whatever those standards are to be  
15 certified, and then -- and then after that, it's a  
16 pretty easy -- I think it's really just a computer  
17 system to track it.

18 And I think it is something that we could do  
19 in parallel, but -- but the notion of sending engineers  
20 and scientists out every six months or every two years  
21 even to -- to check and make sure that your carbon  
22 intensity is correct within six decimal places, is a bit  
23 arduous and -- and probably not necessary so...

24 COMMISSIONER RENDAHL: So you mentioned  
25 Green E.

1 MR. DONAHUE: That -- yes.

2 COMMISSIONER RENDAHL: And so there's  
3 currently, on the electric side, there's Regis. So is  
4 there any reason why Regis can't do the same thing for  
5 RNG?

6 MR. DONAHUE: They may. The whole idea was  
7 to put it out as maybe the states together say, hey,  
8 world out there, make us an offer. We need something to  
9 track to be able to trade and be able to retire, and  
10 give us your best shot. Now, I -- I know that there  
11 were a number of market players at the AGA EPA  
12 conference about a month and a half ago that -- that are  
13 looking at the developing programs, but we don't know  
14 who has the best or the least expensive to administer.

15 COMMISSIONER RENDAHL: Right. And so I  
16 appreciate that the four natural gas utilities in the  
17 Northwest have been working together to try to figure  
18 out how to look at the tracking and look at the  
19 attributes, but there were lot of folks who contributed  
20 comments to this docket. And so I think it might be  
21 more of a comment than a question, but I think it might  
22 be really beneficial once the utilities have -- the four  
23 utilities have looked at what they think is a good idea,  
24 it's going to have to go to a broader group to get  
25 some -- some more input and discussion before something

1 is finalized. And I like the idea of West-wide and I  
2 like the idea that looking West and the markets you can  
3 develop in the West, but I guess although we regulate  
4 utilities, I think it's important to consider the entire  
5 competitive arena and not just the utility players.

6 MR. DONAHUE: We would -- we would concur on  
7 that. It's -- it was -- it's not our intent to -- to  
8 drive the bus, but maybe to be recommending what -- what  
9 route we take. And obviously there are going to be  
10 folks in both the front seat and the back seat that are  
11 going to want to try to drive, and so yes.

12 COMMISSIONER RENDAHL: You're right, thank  
13 you.

14 MR. EINSTEIN: And I think the principle --  
15 the principle from the electric side holds, which is you  
16 want to have a tracking system and you want to have a  
17 way to retire and demonstrate retirement of those  
18 attributes. And so no intent to do anything other than  
19 that, it's just a matter of figuring out the best  
20 mechanism for doing that and something that's common in  
21 the marketplace today that's kind of where renewable  
22 energy credits were 15 years ago, which is very in a  
23 less mature place as far as the functionability and  
24 tracking and all of those things.

25 CHAIRMAN DANNER: Something else is

1 commented today is UTC rules. Are you -- are you  
2 envisioning role for the Commission as a regulator to be  
3 involved in this kind of activity?

4 MR. EINSTEIN: What -- which activity, I  
5 guess? I mean, as far as customer programs and...

6 CHAIRMAN DANNER: Tracking. I mean, you're  
7 talking about -- I thought I -- I sensed you were  
8 talking about banking or how -- how long the -- the  
9 credits would last. I mean, all -- all of this kind  
10 of...

11 MR. EINSTEIN: I think -- I think what -- I  
12 think what we would -- we would say is that, you know,  
13 you want to fall in the pathways that are similar to the  
14 market for the renewable energy and credit side, but we  
15 also don't -- we don't have an RPS in the same way we do  
16 on the electric side, which is what put in place a lot  
17 of those banking and other provisions. And so unless  
18 and until you had something along those lines, I think  
19 at this point you're looking to acquire -- you're  
20 looking to acquire gas with attributes that then can be  
21 retired on the customer's behalf. And so it's not -- or  
22 put into the portfolio for -- for a similar purpose,  
23 that you're -- you're retiring and declaring that.

24 The -- the main thing borrowing provisions  
25 in the RPA and original RPS were mainly just to assist

1 with compliance, but that's not the same situation we  
2 have here. And I think from a Commission role  
3 perspective, we still envision a scenario in which each  
4 of the utilities brings forward their programs for  
5 proposal for you to evaluate and consider and discuss  
6 with those utilities prior to hopefully approval, but  
7 that that would be similar to what we do today for the  
8 voluntary programs we put forward.

9 MR. DONAHUE: As -- as far as tracking, I  
10 think the idea would be if -- if we found there was an  
11 opportunity to do it efficiently, that we would seek  
12 your approval to utilize that resource and -- and to the  
13 extent that an individual utility had a slightly  
14 different rule or -- or methodology, you know, maybe --  
15 maybe that could be accommodated in the -- in the  
16 program design of tracking system. But I think  
17 generally we would -- we would like to see it  
18 conceptually as, I guess, broadly applied as possible,  
19 and obviously we know we have to come to you to get  
20 whatever it is approved, so we're -- we're -- we're  
21 cognizant of that.

22 COMMISSIONER RENDAHL: Yeah, yeah, I -- I do  
23 think the most efficient and, if you could, as much  
24 West-wide as you could, especially where the pipelines  
25 are flowing, make sense to be -- have similar tracking



1 mechanisms so our Staff don't have to be going out and  
2 trying to verify this. Just like they do with Regis,  
3 they check with Regis, Regis says it's been retired,  
4 it's been retired. It's a very easy process to  
5 administer. So that would be optimal whatever that  
6 tracking system is. And I don't necessarily think it  
7 needs to be developed just for Washington, just for  
8 Oregon, so I -- I appreciate the investment of time and  
9 energy you all are putting into -- into that effort. So  
10 looking forward to hearing what -- what comes out of  
11 that. I do think that at least Section 13 mentions we  
12 can approve procedures for banking and transfer, but I  
13 think that's just within the context of a tariff at this  
14 point.

15 MR. DONAHUE: Thank you.

16 MR. EINSTEIN: Thank you.

17 MS. WHITE: Are there any other volunteers  
18 or should I move forward with the random list? Okay.

19 CHAIRMAN DANNER: All right.

20 COMMISSIONER RENDAHL: Thanks, Mike.

21 MR. PARVINEN: Mike Parvinen and Alyn  
22 Spector with Cascade. For the most part, we -- we echo  
23 PSE's comments. We do see that -- well, I guess we're  
24 doing reflections from what we saw or what we heard  
25 before, and there were a lot of, you know, little

1 comments. I think we got -- we learned some good  
2 information from everybody.

3 In particular, as I'm sitting back there  
4 listening, the -- the Vermont one is something that is  
5 very attune to kind of what we have in mind in  
6 working -- putting Sections 13 and 14 together for a  
7 program. That is, I think, important. One of the --  
8 the things I see is as we bring projects forward to the  
9 extent -- to the extent we can, I mean, for us, we see  
10 it's a -- it's a little -- it's out there a little ways  
11 before we can bring something online. But it's kind of  
12 like bringing on an electric resource. They're lumpy,  
13 right, when you bring them on. So to the extent you can  
14 bring Sections 13 and 14 together, that helps bridge  
15 that -- bridge that gap to where the voluntary program  
16 is actually using the resource.

17 Where I see some of the little intricacies  
18 as far as banking goes, you know, how -- how flexible is  
19 your voluntary program? Do you go see -- implement a  
20 program that brings on as much as you absolutely can,  
21 but you don't have the resource yet to meet that? How  
22 far can we bank that obligation. Do we want to even go  
23 there or do we have limiting -- limiting buffers that  
24 only allow us to go a hundred percent of the resource  
25 that we have to support. These are some of the fine

1 tune things that we need to work through.

2 COMMISSIONER BALASBAS: So thanks, Mike, for  
3 those comments. I -- I think -- I think in -- in  
4 previous conversations you've had with -- with our Staff  
5 here about the work that Cascade's doing in this space  
6 right now, I think there was some potential conversation  
7 of maybe proposing an attribute-only type of program,  
8 you know, very similar to some of the -- the programs  
9 we've heard described earlier. Is -- is that something  
10 you -- you are maybe actively considering and -- and  
11 then do you also see that maybe as -- as the -- as the  
12 supply of RNG continues to evolve and grow, you know, in  
13 the coming years, you know, as an attribute-only  
14 program, maybe like a -- at least a starting point  
15 solution for the voluntary tariff and then, you know, as  
16 supply and natural gas comes online, you can get that as  
17 well?

18 MR. PARVINEN: Right. We had contemplated  
19 a -- a -- a strictly attribute program. It's very  
20 difficult to find a supply to back it, but it is -- I  
21 think it could be viewed as a stopgap measure-type thing  
22 going okay, if we need to -- if we need to have  
23 something right away, can the attribute program work  
24 until we have a supply that backs the attributes and  
25 then convert that over. You know, I'm not -- I'm not

1 sure how we -- exactly how we would do that from a cost  
2 standpoint. And the attribute have a cost, that's  
3 fairly easy to deal with, but we attribute it to the  
4 supply resource.

5 Intertying those -- but I think it's  
6 also -- it's workable and doable, that's an approach.  
7 Because, you know, we have -- we have one project that  
8 we're -- that we're talking to, whether it even comes to  
9 fruition, it's about a year away before it actually  
10 comes online. So to have a resource backing it, that's  
11 a ways out there. A pure attribute program that can --  
12 that can step in place, I think -- you know, I think PSE  
13 and Northwest Natural have somewhat similar type of  
14 programs that might be able to -- that we could  
15 implement, hey, it says we're doing something  
16 proactively until we get the resource online.

17 COMMISSIONER RENDAHL: Thanks for your  
18 reflections. I guess, picking up on a question that my  
19 colleague asked to PSE, what -- what do you think we  
20 need to or the community working on this needs to work  
21 on first? Is this a chicken and egg or do all of these  
22 elements, the attribute tracking, the standards, maybe,  
23 you know, borrowing from other industries like telecom  
24 and electricity interconnection standards, what are the  
25 things that really need to be worked on to bring this to

1     fruition?

2                   MR. PARVINEN:  A lot of it can happen  
3     simultaneously.  I think the gas quality one is  
4     something that's -- that's -- that's probably more at  
5     the forefront that we need to address first so we're all  
6     on the same playing field on bringing things together.  
7     Having a unified approach that PSE mentioned, that the  
8     utilities working with the pipelines come up with a  
9     unified approach.  Bringing in the other parties so that  
10    we've got one standard that we're all using.  That's  
11    important.  And knowing that more up front, is kind of  
12    critical.

13                   Some of the other things can happen much  
14    more simultaneous and will work themselves out over  
15    time.  It may not even need the Commission involvement.  
16    Things like the -- the -- the market for the attributes  
17    and how we do that, whether to use the binary or, you  
18    know, carbon intensity.  Those are -- I think those will  
19    kind of work themselves out, and -- and even the banking  
20    of those things over time.  I think our individual  
21    programs that we bring in the tariff and how we do the  
22    banking of those, are a little more independent that --  
23    but are also more individual company centric.  I don't  
24    know I answered your question.

25                   COMMISSIONER RENDAHL:  No, you are good.

1           CHAIRMAN DANNER:  And -- and obviously a  
2 multistate utility, I mean, are you thinking along your  
3 entire service territory or are you just focused on  
4 Washington?

5           MR. PARVINEN:  Both.  I mean, we've got  
6 Senate Bill 98 down in Oregon that is different, yet the  
7 same.  So I think there's -- I think there's -- I think  
8 still ways to mirror them.  If we brought a program --  
9 ideally I'd like to bring a program that works in  
10 Washington and works in -- works in Oregon.  A  
11 system-wide -- system-wide resource makes the most -- in  
12 my mind, makes the most sense.  So can we do that,  
13 though, is still -- is still a little --

14          CHAIRMAN DANNER:  Well, I mean, if you have  
15 divergent or -- or inconsistent requirements in each  
16 state, I suppose that makes it -- makes it harder.

17          MR. PARVINEN:  Right.  We'd have to react  
18 accordingly and it just may not be the most efficient  
19 system.

20          CHAIRMAN DANNER:  Right.  I mean, it  
21 wouldn't be a deal killer, but it would just make it a  
22 little bumpier.

23          MR. SPECTOR:  And that's where some of that  
24 pipeline standard comes into play as well, and I think I  
25 would echo what some of the others have said today too,

1 that right now, at least as I see it, the governing  
2 standard is the one in California. And so anything less  
3 stringent than that, unless there is a thou shall which  
4 comes down from on high, we would probably be reticent  
5 as an industry to migrate to a standard that might  
6 accrue greater risk and is less proven.

7 CHAIRMAN DANNER: And are you -- what do you  
8 think of the California standard?

9 MR. PARVINEN: I should preface that all my  
10 comments are really my own, but because this touches so  
11 many aspects of the company that -- that -- that I'm  
12 all -- I'm not all knowing, all knowledgeable. I always  
13 assume that's a given. Anyway, we had had a -- we had  
14 hired a consultant several years ago in trying to  
15 develop what standard should we be looking at. And  
16 basically the -- you know, the consultant came back and  
17 said yeah, the California standards work.

18 So we did put a tariff in place in Oregon,  
19 and we identified where those standards were, and they  
20 were based off of the California standard in place at  
21 that time, understanding it's changed slightly since  
22 then, and I'm the last person to ask about what those  
23 standards actually mean so...

24 COMMISSIONER RENDAHL: Just to follow up  
25 from the presentation from the gentleman from National

1 Grid, have you looked at the work they've done in the  
2 Northeast in terms of basing it on location? So the  
3 standard might be different whether you're injecting  
4 into the pipeline versus whether you're injecting into  
5 the distribution system, and I'm not familiar enough  
6 with California's standard to know whether they  
7 differentiate or if they just assume the highest level  
8 of standard for the distribution system to make sure  
9 that wherever you're injecting is safe for the  
10 distribution system and any compressors or -- or things  
11 that might be using gas.

12 MR. PARVINEN: Yeah, I'm not sure how  
13 California did it. But for us, because we are standard  
14 all over kingdom come as far as our distribution system  
15 goes, location matters. If you're doing service  
16 quality, you want to be able to meet that -- that --  
17 that quality that's going to affect -- affect the  
18 customers that are actually going to be receiving the  
19 supply.

20 So, you know, we've had potential customers  
21 that come -- and come to us and we go wow, unless the  
22 pipe comes on, it's going to one customer. If that's a  
23 baby food manufacturer, does that matter? You know, so  
24 location does -- the location does matter. If it's  
25 being put on a pipeline where it can be mixed with a



1 whole bunch of other different gas, then -- well, you  
2 know, then you got the opportunity of having a less  
3 standard because the final output is good.

4 But so when it comes down to it, location  
5 matters and -- and where is the end supply going to,  
6 what's that going to do to your system. But it does --  
7 it also does matter on the different types of the gas.  
8 So I think there are different standards for the  
9 different types of gas.

10 MR. SPECTOR: And I suppose inasmuch as the  
11 standard, that the gas is used and retired for  
12 Washington State and a robust market is developed here,  
13 I think that that alters the dynamic slightly too rather  
14 than right now a market that in many ways is centered in  
15 California. And so the California standard is  
16 governing, and developers would be inclined to meet  
17 those standards lest they don't have a product that they  
18 can put into that market.

19 So I think that as Washington market matures  
20 and develops, you know, there's probably more  
21 opportunity for us to come into our own and develop an  
22 alternative standard. But that's just me speaking from  
23 my own mind and not as the industry.

24 MS. WHITE: Thank you.

25 Is there another volunteer to speak next?

1           CHAIRMAN DANNER:  Actually, before we move  
2 to the next volunteer, I'm wondering if Bill would  
3 volunteer to give us his -- I asked about the California  
4 standard, and I was just wondering if you had some  
5 observations on that as well.

6           MR. DONAHUE:  I -- I should make the obvious  
7 statement that I am neither an engineer or -- or chemist  
8 or gas quality expert.  However, those that know me know  
9 I'm willing to give an opinion on just about anything.  
10 The California standard, I -- I think it's fair to say  
11 that a lot of developers and the lobbyists that  
12 represent them in -- in good faith have found that some  
13 of the constituent standards and the -- and the  
14 protocols for testing of some of the -- of some of those  
15 constituents are very onerous.  And perhaps we -- we  
16 took the approach in a -- in -- in our agreements with a  
17 couple of participants on our system, once you've  
18 demonstrated that you don't have this kind of  
19 constituent, maybe we only check once a year instead of  
20 every two months or whatever.  And there's a number of  
21 ways that you can soften that impact.

22                   I don't necessarily believe in the  
23 philosophy of dilution in the solution.  If you're  
24 putting siloxane into the system, yeah, it's fewer parts  
25 per million when you're flowing it in a 36-inch pipe,

1 but it's still going to end up -- it could be the gas  
2 going through a customer's internal combustion engine  
3 and it gums it up or whatever or causes a problem in a  
4 valve and whatever. So there are reasons for the  
5 standard.

6           The -- the differentiation by location is  
7 really about BTU content. You've still got to have the  
8 gas be clean and not damaging to the pipes or other  
9 infrastructure, but it's -- it's about BTU as much as  
10 anything or the -- the combustion characteristics of the  
11 gas, which is measured by Wolvey and a number of other  
12 factors. But the -- the whole idea is you've got  
13 potentially a neighborhood receiving a hundred percent  
14 RNG one day and then the plant's down for maintenance,  
15 it was getting 985 BTU gas today and tomorrow when  
16 they're shut down, they're getting 1090 BTU pipeline  
17 gas.

18           Billing systems have to be built to  
19 accommodate that fact. There's -- there's -- I mean,  
20 that -- that keeps some of our engineers awake at night.  
21 So the design is then to instead of injecting right here  
22 where it goes to a one neighborhood, haul the gas two  
23 miles over and put it into a larger diameter pipe where  
24 the impact is not as onerous on any one group of  
25 customers.

1           So a lot of those things have to be worked  
2 out, but that's really the locational difference, I  
3 think. We're automatically going to be different, I  
4 think, than California in that the pipeline standard  
5 here is minimum 985. California it's lower. So they  
6 allow a lower BTU gas. But blending with BTU may be  
7 okay, but it's not a guaranteed thing. Our BTUs went  
8 from 1028 in around 1990 to 1090 today. It -- it's gone  
9 from 1040 five years to 1090 today, and it could go back  
10 depending on how gas is processed in Canada. So it's  
11 really -- it's not just the constituents, it's the  
12 combustibility, if you will, and interchangeability.

13           COMMISSIONER RENDAHL: So just a follow-up.  
14 So the standard is the standard set basically by what's  
15 coming down from Canada or is the -- I mean, we have a  
16 set of standards, have the pipeline set of standard, is  
17 that for the combustibility? I'm just --

18           MR. DONAHUE: Right.

19           COMMISSIONER RENDAHL: -- trying to get a  
20 sense of what you mean by "standard."

21           MR. DONAHUE: Northwest Pipeline has a  
22 standard in their tariff. It -- it calls out minimum --  
23 or excuse me, maximum levels of nitrogen in total NRTs  
24 nitrogen, oxygen, and carbon dioxide. It has water --  
25 water vapor content, minimum BTU, and a few other

1 components and a -- and a -- and a catchall that says  
2 nothing that makes it unmarketable, which has caused  
3 controversy in a few FERC proceedings over the years.  
4 In any -- not -- not on their system, but other  
5 pipeline.

6           So the -- they have a minimum standard, but  
7 they are now developing a renewable gas-only standard  
8 because they know the quantities are smaller, they  
9 will -- they will look at the individual constituents,  
10 but they will be more flexible on the NRTs. The most  
11 expensive processing cost for renewable gas is generally  
12 pulling the nitrogen out, which is considered an NRT,  
13 and it doesn't normally cause a big issue in  
14 combustibility unless it's too high.

15           So they're willing to provide a little more  
16 flexibility there, because, again, they know it's going  
17 to be limited quantities in an -- in an area and they  
18 can accommodate that. So it's -- but I -- when I said  
19 1090, I'm talking about the prevailing gas that we're  
20 receiving. There is no stated upper limit, but  
21 engineers tell me it's around 1120 where you have to  
22 worry about is it really compatible. But it's a matter  
23 of how much of the higher hydrocarbons are in the gas,  
24 and a lot of it's being left in there in Canada today.

25           MS. MOREHOUSE: Good afternoon. I'm Jody

1 Morehouse. I'm the director of gas supply for Avista.

2 MS. FRYER: And Joy Fryer, product manager  
3 for renewables at Avista.

4 MS. MOREHOUSE: I don't know that I have a  
5 lot to add to what the other two companies have already  
6 said. Avista is not as far along as both Puget and  
7 Northwest Natural in that we don't have an active  
8 project in -- in -- ready to come online at this point  
9 in time. We have had several discussions with potential  
10 producers, and those discussions have been taking place  
11 over the last few years. I think you've already heard  
12 what some the -- the barriers are to why they aren't  
13 hooking up yet and, of course, the regulatory mechanism  
14 for cost recovery is one of those -- those major  
15 barriers.

16 But I -- we do know that there is interest,  
17 even if they are seeking that -- that RIN market in  
18 California. As you've heard, since there is not a  
19 long-term contract mechanism there in California, they  
20 do have interest in working with the utilities for some  
21 of that offtake to -- to have that security for -- for  
22 their production.

23 So this is exciting for us. We've been  
24 wanting to do a project, and we've been actively working  
25 with both the Oregon and the Washington studies that

1 have been done last year and the year before to look at  
2 the -- the potential across the two states. And we've  
3 also been doing some work in our customer product area,  
4 and we did some research there, and Joy might be able to  
5 offer some insight there, but we've done some research  
6 and there is interest.

7           So other than that -- oh, we've also been  
8 working over the last year on an interconnect agreement  
9 looking at what other companies have done including  
10 Northwest Natural, PG&E, SoCal, and FortisBC, Fortis  
11 being a company that has been at the forefront of this  
12 and has a mature program now. We've -- we do like that  
13 the -- the way that that's been structured and as you've  
14 already heard, that using Section 13 and 14 together to  
15 feather in those costs and be able to build out a  
16 customer program is of interest and probably will help  
17 that adoption rate for RNG as we go forward.

18           MS. FRYER: I'll just add to that that thank  
19 you for letting us be here being part of the discussion.  
20 As we look at what the potential program structures  
21 might be, very similar to electric side, is there going  
22 to be a bundled solution that's connected within our  
23 system or is it going to be an attribute-only type of  
24 product. Obviously the pure attribute, there's a lot  
25 lower risk if -- if we're not able to combine those --

1 those costs between Section 13 and Section 14. I think  
2 if we're really looking to move the market, though, an  
3 opportunity to do something that you can help combine  
4 that, bring down the cost for those who are able and  
5 willing to pay a premium will -- will help us achieve  
6 our goal, be more successful in achieving our goal.

7           We did do a survey recently with our  
8 business customers to understand what their interest  
9 might be in a renewable natural gas solution. Compared  
10 to electric -- the electric side, it -- it had kind of  
11 the lowest amount of adoption or -- or expressed need,  
12 but it's new, right, it's a lot newer and -- and a lot  
13 of people aren't aware of what exists, and we don't have  
14 anything in our system today that offers. So there's a  
15 level of information, education that's needed to help  
16 with that.

17           We tested different pricing structures,  
18 looking at what it might actually be at three and a half  
19 times the premium of natural gas all the way down to  
20 just a 10 percent premium. And obviously the further  
21 down the premium, the higher level of interest. And as  
22 PSE or others had mentioned today, though, that  
23 expressed willingness to pay versus actually willingness  
24 to pay are two different things. And so we want to be  
25 sensitive to that, and we would like to be supportive of



1 all voluntary options, but hope to give us that for the  
2 business and being able I believe to combine those  
3 costs.

4 CHAIRMAN DANNER: Joy, are you looking to --  
5 I mean, Mike or Alyn mentioned Oregon has legislation  
6 that they're considering. Obviously you would be  
7 affected as well. Are you striving to get consistency  
8 between states?

9 MS. FRYER: In an ideal world, we would be  
10 able to offer a voluntary option to Oregon, Washington,  
11 and Idaho. Natural gas customers, right, it's  
12 voluntary. So as long as we're complying with  
13 legislation in the various jurisdictions, that would be  
14 the ideal.

15 COMMISSIONER BALASBAS: So you -- you  
16 mentioned a business customer survey. Do you have ideas  
17 or plans to do a residential customer survey?

18 MS. FRYER: We don't currently. I think  
19 that obviously with -- with the House Bill 1257, we --  
20 we need to assess what is going to gain the most  
21 adoption on the residential side. I do see it really  
22 simply, though, just the attribute base versus a  
23 combined offer, though, that would be available for both  
24 its residential and business customers. We just didn't  
25 have the foresight to do it on the residential side to

1 bring into conversation.

2 COMMISSIONER RENDAHL: So I assume you've  
3 been involved in the conversations that PSE's been  
4 involved in in terms of a tracking system. What do you  
5 see as the timing for bridging forward some sort of a  
6 proposal?

7 MS. MOREHEAD: That's a good question. I --  
8 I think as Cascade answered, I agree with them. I don't  
9 envision it will take a long time to -- depending on the  
10 complexity that we want to see there, but I -- I  
11 personally think that a more binary system that either  
12 recognizes it as renewable or not renewable versus a  
13 getting into a very complex system that looks at the  
14 both carbon footprint of the source would enable us to  
15 do something sooner.

16 COMMISSIONER RENDAHL: So maybe starting  
17 with the binary and then developing more further with  
18 the carbon intensity --

19 MS. MOREHEAD: Yeah, that -- that could be  
20 something that would work better.

21 COMMISSIONER RENDAHL: And do you envision  
22 maybe need be just doing something in the Northwest if  
23 it looks like -- I mean, West-wide on the electric side  
24 is kind of hard sometimes, so I'm just making the  
25 analogy to the gas side of is it, do you think it would

1 be harder or easier to try to go beyond the Northwest in  
2 getting some kind of a tracking system or are you really  
3 seeing interest among utilities in all the states in  
4 using the Western Pipeline System?

5 MS. MOREHEAD: It's -- it's looking like  
6 there is more widespread interest out there and that  
7 there are companies engaging in this conversation and  
8 the technology such as M-RETS. So I -- I anticipate  
9 that there will be solutions out there for us and that  
10 we won't have to develop it ourselves.

11 MS. CHITTUM: Okay. Hi, good afternoon. So  
12 I'm Anna Chittum, director of renewable resources with  
13 Northwest Natural. This is Halli Chesser, our lead  
14 technical resource on both the design of RNG  
15 interconnects and then our also our pipeline quality  
16 specifications.

17 In terms of reflections on what we talked  
18 about today, I, like I think it was, was it Angus, could  
19 go on for hours, so I -- I won't. But just a couple of  
20 things I wanted to highlight about kind of how Northwest  
21 Natural has been doing this. One is that we're really  
22 excited about both the Section 13 and 14 provisions.  
23 And as you know, down in Oregon, we are pursuing a  
24 portfolio approach to RNG under Senate Bill 98. So our  
25 expectation is that we would be -- under the 1257 in

1 Washington, we would be also acquiring resources, RNG  
2 resources for all of our customers. And simultaneously,  
3 offering a voluntary tariff for customers that want to  
4 go further. And that's really sort of the framework for  
5 how we are hoping to be able to offer customers access  
6 to RNG in both of the states in which we operate.

7           And so I think in an ideal world, we would  
8 buy from a particular project, and it would likely be  
9 that a large portion of that project we would attribute  
10 to our entire portfolio. It could be a small slice of  
11 it, could be attributable to the customers that want  
12 additional resources for the voluntary tariff. And so,  
13 you know, being able to kind of recognize that the RNG  
14 market right now is really chunky, it's not a very  
15 liquid market. It could very well be in the future, but  
16 for now sort of that ability to, you know, be able to  
17 look at both potential users of the RNG, both our full  
18 portfolio and the voluntary customers together when  
19 we're thinking about a long-term purchase is important  
20 to us. It's, you know, something we're hoping to  
21 pursue.

22           I think to the -- to the question around  
23 sort of how you deal with variations in BTUs, one thing  
24 we do in Oregon is we have BTU maps, we have -- sort of  
25 regularly update the BTUs that are ascribed to

1 particular customers. And so with the interconnection  
2 of the three RNG projects we have coming online in  
3 Oregon and potentially fourth and a fifth pretty soon,  
4 each RNG project will have its own BTU map, and so we'll  
5 know where that RNG is flowing and we will know the BTUs  
6 that have actually been used and delivered to a  
7 particular customer area, and we can adjust our billing  
8 accordingly.

9           So I think there are ways to deal with  
10 variations in BTU, but it's very true that we have to be  
11 cognizant of the fact that if a customer has all of  
12 their equipment attuned to do particular BTU value and  
13 it changes dramatically 24 hours later, that's -- that  
14 can be a real big problem in customer satisfaction.

15           CHAIRMAN DANNER: How precise are those  
16 maps?

17           MS. CHITTUM: I mean, they're -- they're  
18 real -- they're real meters.

19           Want to talk about that a little or...

20           MS. CHESSER: I know we have strict tariff  
21 requirements on how -- on how we're billing our  
22 customers on BTU value, and I know that we're meeting  
23 that standard now.

24           COMMISSIONER RENDAHL: Is that -- sorry. Is  
25 that more for industrial and commercial customers or is

1 it for residential customers have a certain BTU  
2 requirement in the tariff as well?

3 MS. CHITTUM: So the BTU map impacts  
4 everyone's billing. It's just going to impact some of  
5 those commercial and industrial customers probably a lot  
6 more than your residential customers who probably won't  
7 notice as much.

8 So one important way that we, you know,  
9 anticipate being active in this market is really  
10 providing that long-term offtake that we talked about as  
11 being so important to finance projects. While there are  
12 long-term contracts that you can get by selling them to  
13 the California LCSF market or to Oregon fuels program,  
14 those contracts are typically variable. They're kind of  
15 marked to the index value of those environmental  
16 credits.

17 So when we say long term, we're saying long  
18 term with a fixed price that the project developer can  
19 rely on and more importantly, potential financiers of  
20 that project can look to and see -- they can have surety  
21 around their revenue. So that's something that we know  
22 is really an important way to kind of continue to  
23 jump-start this market.

24 We -- when we're thinking about the delivery  
25 of actual RNG versus delivery via attributes, kind of

1 like what's happened on the -- on the electric side, we  
2 presume there will be a portion of what we deliver that  
3 is direct RNG that we are purchasing from projects  
4 directly interconnecting with our distribution system.  
5 We're of course limited to which projects are actually  
6 interconnected with our distribution system.

7           So having some type of a platform where you  
8 can potentially trade the attributes like RECs is really  
9 important, I think, for the long-term success of these  
10 projects. There's been mention of M-RETS, the trading  
11 system that trades RECs in the MISO market. They're,  
12 you know, as far as we know, kind of first out of the  
13 gate with a, you know, platform that would allow the  
14 trading of RNG RECs. They call them thermal RECs.

15           It -- they -- they may or may not be the  
16 best option, but, you know, we've tried to learn a bit  
17 about how that would work, but then I think, you know,  
18 for the projects that are interconnecting directly with  
19 us, we will definitely be, you know, thinking about  
20 which ones we might want to, you know, offer a long-term  
21 purchase price. And -- and there may be projects that  
22 are interested in selling us that gas at, you know, a  
23 price that -- that would work for our customers. There  
24 may be projects that just really want to go and make  
25 that money in the LCFS markets. And so we want to be

1 available to have kind of both -- both of those  
2 opportunities.

3 Let's see, what else did I put in my -- my  
4 bullets here. So one thing I also wanted to talk about  
5 in terms of the cost is, our 2018 IRP in Oregon and  
6 Washington, we took -- we took some time to really think  
7 about the avoided cost of RNG. So projects that are  
8 interconnecting directly to our system and are  
9 delivering gas directly onto our system, they yield the  
10 benefit of us not having to go out and buy the gas and  
11 acquire the pipeline capacity.

12 So in addition to, you know, when we're  
13 looking at the -- that cost of, you know, 15 -- \$13  
14 versus 5 or \$15 versus 5, when we're thinking about, you  
15 know, what the differential is for customers, and this  
16 is kind of how we've been thinking about it certainly  
17 down in Oregon is that there is sort of the underlying  
18 commodity cost of gas that you would be avoiding. But  
19 for projects that are interconnecting with our system,  
20 that's pipeline capacity we don't have to go out and  
21 contract.

22 And, you know, there could be other  
23 benefits. We talked about economic development  
24 benefits. In some limited cases, there could be some  
25 resilience benefits, but right now we don't really have



1 a regulatory framework for actually valuing those, but  
2 programs down the line that's, you know, something we  
3 could -- we could think about in our avoided cost.

4           And then the last thing I just want to say  
5 is that we, you know, sort of thinking about RNG  
6 broadly, we definitely see, you know, biomethane from  
7 anaerobic digestion as the -- the immediate opportunity.  
8 We're really excited about the prospect of gasification,  
9 especially there's a lot of wood waste, a lot of mill  
10 residue, a lot of urban wood waste. And so, you know,  
11 gasification is a technology that we've been tracking a  
12 lot and we're really interested in -- in that as a  
13 potential source down the line.

14           And we spent some time getting to know how  
15 some of our counterparts in Europe, some of the -- the  
16 distribution gas utilities there are thinking about both  
17 RNG and hydrogen, and they've been doing this for quite  
18 a bit longer than we have here. And I think one thing  
19 that really struck us was the recognition that  
20 biomethane and gasification-based RNG are really  
21 important, but that hydrogen and even hydrogen  
22 generation with substantial carbon capture is also  
23 another really important renewable gas source.

24           And so in our -- in our comments, the  
25 comments that we submitted in addition to the Northwest

1 Gas Association, we were supportive of the idea of  
2 having kind of a separate discussion about hydrogen  
3 blending in particular and, you know, even thinking  
4 about dedicated hydrogen-only networks, and that's  
5 something very different than just sort of an RNG  
6 quality specification.

7 So, you know, I think a working group or  
8 workshop, thinking about that and looking at some of the  
9 latest academic research and industry research and  
10 especially what -- what they've learned in a lot of the  
11 pilots over in Europe where they're blending 30 percent,  
12 20 percent hydrogen into the natural gas system, we  
13 really -- we shouldn't be reinventing the wheel, so we  
14 would really support having that as kind of a separate  
15 work stream of -- of all this work here.

16 And then Halli could talk a little bit about  
17 our quality specifications and sort of how we -- how we  
18 think about them relative to others.

19 CHAIRMAN DANNER: Before we do that, I'm  
20 sorry, my mic is off. It's not working anymore, so I  
21 will just speak up. But if I remember my question. You  
22 heard Donald earlier talk about sort of a timeline that  
23 biomass is going to be kind of the next step and  
24 hydrogen is after that. You're talking -- you're  
25 talking about 30 percent already being merged. Do you

1 see that that -- that timeline could be moved up in  
2 terms of hydrogen?

3 MS. CHITTUM: Yes, so we're -- we're  
4 pursuing a pilot product right now down in Oregon that  
5 would blend hydrogen directly into our pipeline. We're  
6 not -- we're not doing it right now. So we're not  
7 actively blending it, but we are kind of beginning the  
8 steps that would -- I think our expectation is that  
9 within the next year or two that that could be  
10 happening. And so certainly that's not going to be 30  
11 percent hydrogen. It's a big step. It's a big, big  
12 step, but yeah, I think sooner than 2030 for sure.

13 CHAIRMAN DANNER: And here's just an odd  
14 question that I -- doesn't pertain to anything. Is --  
15 is there any reason that RNG cannot be liquified?

16 MS. CHITTUM: No.

17 CHAIRMAN DANNER: Okay.

18 MS. CHESSER: So the three projects that we  
19 have interconnecting with us are following our proposed  
20 quality standards that we created. There's two points  
21 to that quality standard; one is the traditional natural  
22 gas qualities, which are based on our tariff with our  
23 current producer. And then the second piece adopts the  
24 California standard.

25 We took the charted values from the

1 California standard, we changed some of the frequency  
2 testing and -- and kind of relaxed that bit just to be  
3 more conducive to accepting renewable natural gas. But  
4 that's what we proposed, and that's what our -- our  
5 three producers that have signed contracts with us have  
6 agreed to.

7 In reading the recent CPC hearing  
8 information, there was questions about siloxane and  
9 questions about original feedstock. I know we'd be open  
10 to -- to looking at feedstock-based testing and -- and  
11 kind of exploring that with our -- our partner companies  
12 and seeing, you know, how that -- how that -- how we can  
13 apply something similar to that in order to eliminate  
14 testing for things that aren't exactly in the gas in the  
15 original feedstock. But our current -- our current  
16 amounts allow us to -- to flow gas throughout the system  
17 between -- between lots of customers.

18 And so we'd be open to talking about how to  
19 change the standards to be more -- to be more supportive  
20 of -- of -- of the renewable natural gas projects. But  
21 as -- as Bill mentioned, I don't know if it's  
22 necessarily the specific values, but it is the  
23 variability and the location that we're seeing where the  
24 projects are injecting. Right now our standard is  
25 written as if it's injecting right next to a home or if

1 it's injecting into a -- into a higher pressure pipeline  
2 because the way our system flows changes daily. And so  
3 trying to -- to be specific in location is challenging.

4 So we're -- we're certainly open to that and  
5 we're -- we're looking forward to working with our --  
6 our natural gas company partners in order to come up  
7 with a standard that works for everyone understanding  
8 that there's challenges with trying to be very specific  
9 about location and -- and -- and, you know, sensitive  
10 customers.

11 COMMISSIONER RENDAHL: So in your  
12 discussions with the -- when you're working with folks  
13 that are developing projects, are they more concerned  
14 about the testing, the -- the level of testing that is  
15 in the California standard or are they more concerned  
16 about the level of constituents that you're going to be  
17 testing for? It sounds like it's the -- the amount of  
18 testing.

19 MS. CHESSER: I think that's exactly right.  
20 It's the -- the frequency of the testing and being  
21 specific into how the samples are -- are gathered and  
22 just the logistics of -- of testing I think is the --  
23 the bigger concern when it comes to the California  
24 standard. On the other side, there's concern about BTU  
25 value and oxygen from our experience as those seem to be

1 the two items that draw the most concern, and those are  
2 natural gas specified items. And when I say, you know,  
3 traditional natural gas specified items.

4 So I think, again, potentially testing  
5 feedstocks and determining how many items can be maybe  
6 eliminated from the list can reduce some of the  
7 heartburn on the producer side just so that we're not  
8 doing unnecessary testing. But I think -- I think  
9 that's exactly it.

10 COMMISSIONER RENDAHL: And -- and you raised  
11 the who is doing the testing. So who do you have to  
12 send the samples to? Can you talk a little bit more  
13 about that just to give us a flavor?

14 MS. CHESSER: We -- for our contracts, we  
15 require the -- the producer to facilitate testing and  
16 give parameters around the fact that it has to be an  
17 Oregon or equivalent certified lab. But if they can't  
18 find one, then we would help suggest a lab that can do  
19 testing. One of our producers right now is -- is  
20 actively out looking for labs that can do tests and --  
21 and working with us to make sure that they're testing  
22 for the right things. It seems like there's few that  
23 can do all of the tests that we're asking for,  
24 especially, like Bill mentioned, the biological that is  
25 just don't put anything in the gas that's bad.

1           So there's -- there's only I think a few  
2 that can do all the tests today, but there are -- there  
3 are labs out there that can do it, but it may mean  
4 sending it, you know, across state lines, and -- and  
5 then there's concern about the sampling method and the  
6 holding times and how long the sample is still good and  
7 some of those logistics.

8           COMMISSIONER RENDAHL: So that seems like  
9 it's as much barrier for development the lack of  
10 testing --

11          MS. CHESSER: Potentially.

12          COMMISSIONER RENDAHL: -- services.

13           And then I was thinking in terms of barriers  
14 for interconnection. Have you developed some standard  
15 interconnection processes when working similar to, you  
16 know, DER interconnection, where you have certain times  
17 and processes for the applicant and the utility to work  
18 through the process?

19          MS. CHESSER: I think we're -- we're working  
20 through that now. We -- we had a flood of interest all  
21 at one time, so we had several producers that wanted to  
22 talk to us before we had an established process. So I  
23 think now, given that we have three signed contracts,  
24 we've -- we've established that process, and I think  
25 we're doing a better job now of -- of flowing it through

1 the channel of who needs to talk to whom and when.

2 We have a website that has a whole lineup of  
3 how to -- how to interconnect basically as a -- as a  
4 resource for potential producers. So we're -- we're in  
5 the process of -- of finalizing that established process  
6 as -- as we're in -- in the middle of doing it, if you  
7 will.

8 MS. CHITTUM: And just one thing I would add  
9 that we sort of recognize is that, you know, engineering  
10 is not in the customer service business. And so one  
11 thing that we did is -- is we tried to identify someone  
12 in major accounts who is really customer-focused, who  
13 can be sort of the RNG hand-holder, I would say. And  
14 that's been -- that's been really good, no offense to  
15 you. Your customer --

16 MS. CHESSER: Tell them you don't -- you  
17 don't want them talking to the person who only says no.

18 MS. WHITE: All right. Thank you very much.

19 MS. CHESSER: Thank you.

20 MS. CHITTUM: Thank you.

21 MS. WHITE: Okay. Before we move into the  
22 public comment portion of our agenda, I just wanted to  
23 mention that FortisBC has come up a couple of times  
24 throughout the presentations today and the comments.  
25 And we did reach out to them. They were unable to



1 present today, but Scott Graham offered to be available  
2 for anyone who would like to talk to him offline. So if  
3 you're interested in connecting with FortisBC, you can  
4 email me. My contact information is in the notice filed  
5 in the docket. You'll get an out of office for the next  
6 three weeks, so I'll make sure my forwarding contact  
7 also has access to that contact information.

8           And so with that, we're going to move into  
9 the public comments portion of our agenda. We're going  
10 to first open it up to the floor for anyone who wishes  
11 to make either new comments to the docket or  
12 supplemental comments to those that they filed on  
13 October 24th. We have received and read those comments  
14 submitted on the 24th, so no need to reiterate anything  
15 that was filed in those comments.

16           And then after you've made your comment,  
17 please stay at the desk for any Commissioner questions  
18 pertaining to your comments. And then after any new  
19 comments are made, we'll open it up for Commissioner  
20 questions to any of the previously filed comments.

21           So with that, please come to the desk if you  
22 have comments to add to the docket.

23           MR. WARREN: I'll take a shot. Good  
24 afternoon. Dave Warren here on behalf the Renewable  
25 Hydrogen Alliance and Douglas County PUD. We did file

1 written comments so we perhaps -- we did file comments,  
2 so perhaps this is in the nature of revising and  
3 extending our remarks.

4 Renewable Hydrogen -- Renewable Hydrogen  
5 Alliance was formed about a year and a half ago, and  
6 simultaneously almost, Douglas County PUD was looking at  
7 ways to enhance the value of the hydroelectric system,  
8 particularly in the spring, when the saying goes, the  
9 water's flowing, the wind's blowing and the heaters are  
10 turned off and the air conditioners haven't turned on  
11 yet. And Douglas was having to either give away their  
12 electricity or pay negative pricing. And they started  
13 investigating production of hydrogen a couple years ago  
14 and approached me about approaching the legislature to  
15 provide authority for PUDs to produce and distribute  
16 renewable hydrogen.

17 Almost simultaneously, I found out about  
18 Renewable Hydrogen Alliance of -- who now -- they now  
19 have about 50 to 60 members. Their mission is to  
20 support the production, distribution, and end use of  
21 renewable hydrogen. And many of the -- some of the  
22 people in the room are actually members. PSE is a  
23 member, Northwest Natural is a member, Douglas County  
24 PUD and Klickitat PUD are members, Tacoma Public Utility  
25 is a member. This idea of renewable hydrogen production

1 using renewable energy that's variable has really taken  
2 hold.

3           What Douglas found out, it's not only in the  
4 spring when they cannot run water over the stowaway  
5 because they would violate dissolved gas standards, they  
6 have to run it through the turbine. That would provide  
7 a value added, and just as a plug, Douglas County PUD  
8 has the lowest retail rates in the country for  
9 electricity. So you can imagine, our operating costs  
10 are pretty low.

11           So the economics of producing hydrogen out  
12 of the hydroelectric system is fundamentally favorable  
13 to producing hydrogen because they're either giving that  
14 electricity away or paying negative prices. In  
15 addition, I found out that the dynaero [sic] cycling of  
16 the hydro system, the wear and tear on the equipment is  
17 reduced if they can dump that energy into an  
18 electrolyzer. And then finally, they just realized that  
19 they've been spending reserves, which they're operating  
20 for free and -- and providing to the grid could be used  
21 to produce hydrogen.

22           So they are currently right now looking at  
23 and negotiating for the purchase of the first  
24 electrolyzer, which they hope to have in place a year  
25 from spring. So talking to Chair Danner's question

1 about inservice dates. The cost of electrolyzers are  
2 plummeting similar to the way solar and wind costs  
3 plummeted over the last decade because of the demand in  
4 Europe and Asia.

5 CHAIRMAN DANNER: And so what is the -- the  
6 cost right now if I were to go on eBay or...

7 MR. WARREN: I think Craigslist would be the  
8 appropriate venue. I don't know. It depends. So  
9 Douglas, when they went out for their IRP originally  
10 sort of put a range of two to 20 megawatts. And the  
11 cost per unit obviously for the largest electrolyzer  
12 goes down. I don't know exactly what the price is now,  
13 but they think with a -- a larger electrolyzer that they  
14 can produce the equivalent of a gallon of gasoline  
15 competitive to cost of the gallon of gasoline, which,  
16 again, because of they're the owner and operator of an  
17 840-megawatt hydroelectric project and for the reasons  
18 I've just stated, their cost of production of hydrogen  
19 is going to be much more favorable than somebody, say,  
20 just buying electricity out on the open market.

21 They -- they can -- they can -- the large --  
22 they can produce -- they can purchase a large  
23 electrolyzer if they can simultaneously start to develop  
24 markets, I guess, for the hydrogen output. And the --  
25 the -- the benefits of hydrogen as a storage medium

1 over, say, a lithium-ion battery, there are several, it  
2 can -- it can be -- it won't lose its charge over time,  
3 it can be stored for longer periods, it can be  
4 transported for other avenues.

5           There are -- there are a whole lot of  
6 benefits, which we -- we don't necessarily need to go  
7 into now, but we would encourage what Anna Chittum said  
8 from Northwest Natural and in our comments was, if we  
9 could start a process in -- in this process and -- and  
10 the -- the legislature did not only get PUD's authority  
11 to produce and distribute natural gas -- or renewable  
12 hydrogen, excuse me, they added renewable hydrogen  
13 funding in the Clean Energy Transformation Act for  
14 energy transformation projects, and in the Green  
15 Transportation Act, equivalent credits for -- tax  
16 credits and incentives for renewable hydrogen production  
17 facilities. And in this proceeding, there was that  
18 sentence that the Commission may consider other sources  
19 of gas that are produced without fossil fuels. And the  
20 definition of renewable hydrogen is precisely that in  
21 state law and now in multiple areas. So we think that  
22 very well fits.

23           And I think Donald from National Grid this  
24 morning earlier mentioned methanation, which I have just  
25 run into as well, which is the additional hydrogen to

1 CO2 to -- to create methane and offset oxygen. I don't  
2 know if that quite fits, but that might be another  
3 avenue, and it's interesting that he mentioned that  
4 they're looking at that too.

5           So if you produce a renewable hydrogen, take  
6 carbon out of flue gas, and you in essence recycle the  
7 carbon instead of putting it into the atmosphere. And  
8 that's something I have literally run into the last  
9 week. So that may be another application that we'd want  
10 this group to look at if -- if the Commission agrees to  
11 sort of bless the formation.

12           But we think with what -- what we heard this  
13 morning, the studies that are going on, and I -- I  
14 believe I'm hearing rumors and through RHA and they have  
15 their members and others, I think we will see more than  
16 Douglas PUD purchasing electrolyzers and deploying those  
17 in the next year. So I think the schedule could move up  
18 quite a bit.

19           Simultaneously last March during the  
20 session, I read an article in the Pacific Northwest  
21 National Labs at the same time started the Center for  
22 Hydrogen Safety, which they've I guess compared the best  
23 that I can describe is as similar to an underwriter's  
24 lab for hydrogen. So we pull together engineers that  
25 have been working with hydrogen designs and equipment

1 and -- and they are in the business of reviewing  
2 designs, safety inspections, overdesign, underdesign for  
3 safety and hydrogen.

4           So in our written comments, we suggested  
5 that we could maybe pull them in as part of this group  
6 as well because it's not the Hindenburg, but many people  
7 still think of hydrogen as -- as the Hindenburg, but  
8 actually a big envelope that burned up hydrogen  
9 evaporates really quickly. That was a personal opinion,  
10 not an engineer or chemist background.

11           But we do -- we would request that the  
12 Commission, I think as Anna Chittum has requested also  
13 in her comments, form a separate work group. I don't  
14 think it's five years out. I think if the right  
15 blending standards, safety protocols, we look at the  
16 economics, we could probably start putting hydrogen into  
17 the system, renewable hydrogen I'm guessing in the next  
18 two-plus years, two years maybe, two and a half years.  
19 But that's an opinion. I'm not an expert by any means.

20           CHAIRMAN DANNER: Thank you.

21           MS. WHITE: Is there anyone on the phone who  
22 would like to add a public comment?

23           Hearing nothing, I'm going to turn it over  
24 to the Commissioners to ask any questions they'd still  
25 like to ask.

1           And, Amy, if you can have a microphone  
2 available for people in the audience, that would be  
3 great.

4           COMMISSIONER RENDAHL: So a lot of our  
5 questions I think we asked during the time we were  
6 asking questions of the utilities, but I know there's a  
7 member of the RNG Coalition here, Sam. In your comments  
8 in talking about the 5 percent limit that we have to  
9 factor in, you had mentioned calculating the value over  
10 an extended period of time. And can you -- can you talk  
11 a little bit more about that context and what you're  
12 suggesting?

13           MR. WADE: Sure. And it may not be fully  
14 developed at this point, but conceptually when a  
15 facility is built as high up from capital costs and we'd  
16 like to see those amortized or spread across many years  
17 rather than having all of that be assigned to one year  
18 and compared that test. So basically we're just  
19 concerned that you do some sort of amortization in  
20 making that comparison.

21           COMMISSIONER RENDAHL: So I guess if we're  
22 thinking about the -- the Summit Gas project, I mean,  
23 theirs was really only an attribute -- it's only an  
24 attribute program, so there's no capital cost per se.

25           But if you're looking at the Vermont Gas --



1 still beta testing the microphone. So where -- where  
2 there are capital costs and more of a long-term contract  
3 that a utility might sign that you looked amortizing  
4 that over the term of the...

5 MR. WADE: Yeah, of the term of the  
6 contract --

7 COMMISSIONER RENDAHL: Term of the contract  
8 or the appropriate depreciation life of whatever the  
9 capital assets are that are involved in the system?

10 MR. WADE: Yeah, and we didn't want to go  
11 too deep in the weeds there. We wanted to be sure to  
12 get that idea on the table.

13 COMMISSIONER RENDAHL: Okay. And I'm seeing  
14 nodding heads of the utilities. Any other comments  
15 people from the utility community want to add to that  
16 other than nodding heads?

17 So I guess move -- many of you discussed  
18 having a cost recovery program, and by that I guess as  
19 the day went on, I understood this really has to do with  
20 interplay between Section 13 and Section 14 and how the  
21 costs are -- are blended together and whether you can  
22 feather in from Section 13 product into the system  
23 through Section 14. Maybe I'm mixing the sections.

24 Bill, would you like to come up and talk  
25 about that?

1           MR. DONAHUE: We tried -- we tried to cover  
2 that in the Northwest Gas Association comments, but  
3 basically there would be two kinds of programs, okay?  
4 There's a voluntary program, and for that, a utility  
5 would try to acquire kind of the right size of project  
6 to cover those customers and taking advantage of maybe  
7 the economy of scale and/or the -- the committed  
8 long-term buyers under that program. And I -- we have  
9 as an example our Green Direct program. We would look  
10 at the commodity cost, the incremental costs of that  
11 natural -- or of that renewable natural gas would be  
12 recovered from those customers.

13           In addition, any project is going to have  
14 some -- it is likely to have some capital cost, which  
15 would be the pipeline and the metering and monitoring  
16 equipment. And those are not small because most of  
17 the -- most of the projects are not right next to a big  
18 pipeline. So we're envisioning that to the extent that,  
19 for example, you have a -- a discrete project where all  
20 of the costs or all the volumes are absorbed by one  
21 select group of customers in a long-term program and you  
22 have a unique supply and a unique set of customers that  
23 you might look at recovery of the capital costs from  
24 that group of customers. However, it is also unlikely  
25 that you're going to be able to get that perfect match.

1           So you may have three-quarters of the gas  
2 going to a program and the other one-quarter is going to  
3 naturally, I would imagine, flow through your PGA  
4 subject to the 5 percent limit.

5           Now, you're also going to do some allocation  
6 of -- of the -- of the infrastructure costs, you know, a  
7 more useful life or depreciable life or the term of the  
8 contract. And that we -- we imagine is also subject to  
9 the 5 percent limit, but that is why we -- we  
10 specifically proposed that it be a 5 percent limit on  
11 our total revenue requirement, because we are both  
12 commodity and infrastructure cost recovery.

13           And on -- on any one project, to make it  
14 happen, it might be that the utility is the investor in  
15 the gas processing equipment. I mean, it's conceivable.  
16 It's not necessarily where -- the space we want to be  
17 in, but to make a project happen, we may need to be. We  
18 have expertise in running pipelines, we also do a lot of  
19 gas processing and whatnot at various like storage  
20 project, for example. So we are familiar with some of  
21 the technology, and it might be necessary for financing  
22 to happen through that mechanism.

23           So that's why we think it makes sense to  
24 apply that 5 percent standards across both -- both or  
25 all of the costs associated with -- with renewable gas.

1 Does that address where you wanted to go?

2 CHAIRMAN DANNER: So it seems like what  
3 we're doing is we're -- we're -- you would be attempting  
4 to address churn by -- by this kind of a mechanism. But  
5 to reduce that churn, what -- what are you thinking of  
6 in terms of I'm a residential customer, I say I want to  
7 get 10 percent through RNG, do I need to sign up for a  
8 year, do I need to sign up for two years, or is this a  
9 month-to-month, what -- what are you thinking?

10 MR. DONAHUE: We are still looking at those  
11 details of program design. We -- we've actually talked  
12 with some of the California utilities that were amazed  
13 that we wouldn't let a customer choose a dollar amount.  
14 There it's all on volume. You commit to ten decatherms  
15 a month or whatever it is. We're -- we're envisioning  
16 very much like our green power program. We have, you  
17 know, some minimum dollar amount that gets you a  
18 certain -- based on a posted price, perhaps in the  
19 tariff or a project or the -- or the portfolio, and  
20 it -- your -- your volume may vary by month, but because  
21 the cost may vary by month, if you have multiple  
22 projects in a program and different volumes from each.

23 If we were doing a Green Direct type of  
24 program, maybe it's a 15-year commitment from 15 large  
25 commercial or municipal customers, and they are

1 underwriting that entire projet and no costs go anywhere  
2 else, but they're in for the 15 years. That would be --  
3 that's one program design. The other is send in \$5, \$7,  
4 or whatever, you will get whatever you want and you can  
5 back out whenever you want. There's some administrative  
6 costs, there might be some minimum six-month commitment.  
7 We have not experimented yet with those details. Some  
8 may have, but we have not.

9 COMMISSIONER RENDAHL: They're all --  
10 they're saying that they have your back, Bill.

11 So in terms of what the Commission does with  
12 Section 13 and 14, there was a question about how the  
13 Commission should proceed to make this decision. And  
14 there was a fair amount of consistency, not everyone,  
15 that we should put forward some kind of a policy  
16 statement that would then give utilities the ability to  
17 then put forward a tariff. Is that really the trigger  
18 for the utilities to move forward addressing this cost  
19 recovery issue and several other issues? They're  
20 looking at you, Bill.

21 MR. DONAHUE: I was hoping someone from our  
22 regulatory group would come up that knows more  
23 specifically the difference between rulemaking and  
24 policy.

25 COMMISSIONER BALASBAS: You got -- you've

1 got backup.

2 COMMISSIONER RENDAHL: You got backup now.

3 MR. DONAHUE: But I -- I think my  
4 understanding was timing, and many of us are prepared to  
5 go and start acquiring gas. But the uncertainty of  
6 knowing what you will allow and -- and that it's -- it's  
7 one thing to set up standards. I think we can get there  
8 collaboratively pretty quick, but -- but understanding I  
9 guess I'm -- need to back up and make a statement that  
10 if you look at the social cost of carbon, RNG doesn't  
11 make sense. It's more expensive than that. So we're  
12 doing this because it is what we have available for the  
13 gas system today, and obviously the political climate in  
14 some of the cities that we serve dictates we should be  
15 doing this two years ago.

16 So if a policy statement that kind of herds  
17 us all into a general vicinity and then allow us to file  
18 something, I think is we think is most expeditious [sic]  
19 way to get started.

20 MR. PARVINEN: Yeah, and I would concur with  
21 that. I would also say that the policy statement is a  
22 little more flexible than perhaps a rulemaking when  
23 there's enough unknowns and enough change going on.  
24 But -- you know, but that does give the company some  
25 assurances to move forward. Like Bill said, it kind of

1 goes back to when, when this first developed. If you  
2 look at the IRPs, it was not a cost-effective resource.  
3 It took the renewable portfolio standards to do that.  
4 You see the same thing with the -- with the renewable --  
5 renewable gas here. It's not the most cost-effective  
6 thing to do, it's more the right direction, so how do we  
7 do that.

8           The risk of doing an investment or bringing  
9 in this type of portfolio, the company is sensitive to  
10 that -- that risk of recovery. So the more direction we  
11 have, the better. So -- so I think -- but I think the  
12 policy statement-type approach can give that assurance,  
13 but yet maintain that flexibility that a rulemaking is a  
14 little more difficult to change a rulemaking.

15           COMMISSIONER RENDAHL: I do appreciate the  
16 feedback on that. There are a number of questions that  
17 have come up from me throughout this process. This is  
18 all new. I'm not an engineer and I'm not an expert in  
19 gas like my colleague here on the gas committee, so  
20 there's a lot of learning for -- for all of us. So I  
21 appreciate -- appreciate all this information.

22           MR. PARVINEN: I also want to make one more  
23 comment. This is kind of the direction that Bill was  
24 talking about, about the recovery and the linking of  
25 Section 13 and 14, at least how I view it and as

1 potential projects come on. I almost see everything  
2 starting at Section 13, which is bring the resource in  
3 and have that -- and have that resource. And at the  
4 same time, you're offering this voluntary program, but  
5 it's using the resources that you're bringing in. And I  
6 see that Section 14 as an offset to -- to 13.

7           So everything gets brought in under Section  
8 13 having to meet the 5 -- the 5 percent test and  
9 there's certain credits, then, that would go against  
10 that 5 percent test, including voluntary program. It  
11 could be that rather than retiring the -- the -- the  
12 attributes under -- you know, under Section 13, which  
13 can be expensive, that if there's not a requirement  
14 necessarily to keep the attribute for a while -- I mean,  
15 if we're starting moving into, you know, cap and trade  
16 or things like that where the attributes are -- are  
17 necessary, they may not be as necessary as a  
18 cost-effective measure to help be able to go out and get  
19 more resources, you sell the attributes and then credit  
20 the -- and then credit that, you know, 5 percent cap to  
21 be able to go out and do other increments until such  
22 time as we --

23           You know, it's a little forward-thinking in  
24 that -- that if we move into -- if we have to get into,  
25 you know, cap and trade or carbon tax and the more



1 renewables you have, the better. But to maintain the  
2 cost effectiveness in the meantime, we can bring on more  
3 attributes -- you may be able to bring on more resources  
4 and sell off the attributes while they're not mandatory.

5 COMMISSIONER RENDAHL: So the way I read  
6 Section 13, though, it says that attributes provided  
7 under the section must be retired using procedures  
8 established by the Commission and may not be used for  
9 any other purpose. So until that's changed, I think  
10 that precludes the suggestion you just made. Although,  
11 you know, things may change over time. So this may just  
12 be something -- so in terms of -- since you're sitting  
13 there, because we have that section that, you know, says  
14 procedures we establish, do you imagine that this is  
15 something we could again address in the policy statement  
16 and/or include in the companies' various tariffs when  
17 they do file under these sections?

18 MR. PARVINEN: Well, yeah, I think it's  
19 helpful if it's in the policy statement -- well, it  
20 could be actually vague as -- as -- as when we file the  
21 tariffs we have to identify how we're doing it. Again,  
22 that's kind of that chicken and the egg thing. There  
23 may be better options that -- that come along. If we --  
24 if there's a unified market for the whole West, if  
25 that's developed before we enter into the programs,

1 great. If it's not, then we still have to have a way of  
2 dealing with those -- those attributes, and that's most  
3 likely going to be explained either through tariff or --  
4 or some -- a process in the cover letter, whatever that  
5 would do, and it doesn't necessarily have to be a  
6 tariff.

7 MS. WHITE: So we're at our final portion of  
8 the agenda for today, which is next steps. And first I  
9 want to thank you all for your filed comments as well as  
10 your remarks here today. We will be taking those both  
11 under consideration as we determine our next steps.

12 I also want to say that if there's any other  
13 information you'd like to provide to the docket, you're  
14 able to do so, and if you're thinking late at night  
15 about things that we discussed here today, again, the  
16 docket number is U-190818, and you can submit those  
17 filed comments in the same way you submitted your  
18 previous comments, which is to our records center at  
19 records@utc.wa.gov. Again, you can contact me or my  
20 proxy if you have any questions about submitting those  
21 additional comments.

22 And then I'm going to turn it over to Jason  
23 for some closing remarks.

24 MR. LEWIS: That sounds way more official.  
25 I was going to say that we're also looking at the

1 possibility of smaller work groups on some of the issues  
2 in between if there's another workshop scheduled, which  
3 I'm assuming there will be. So if you have any interest  
4 in joining one of those smaller work groups, especially  
5 if it's in a particular area, please contact either  
6 Kendra or I and let us know. Thank you.

7 CHAIRMAN DANNER: So I want to thank  
8 everybody for coming. I've learned a lot today. I've  
9 learned a lot by your comments, but it's -- really it's  
10 been clarified by having a conversation and the  
11 give-and-take we were able to have today. We're -- we  
12 have a lot of work to do. We're going to have a lot of  
13 discussions, and I'm looking forward to -- I'm actually  
14 looking forward to further workshops.

15 And I want to -- I want to thank Kendra and  
16 Jason for -- for the work that they've done in preparing  
17 this and for guiding the process so far. And also Peter  
18 for -- for being a very wise and experienced advisor on  
19 this stuff for us. So -- so thank you. That's my  
20 closing remarks.

21 MS. WHITE: Well, with that, we're  
22 adjourned, and I think even, yes, 19 minutes early. So  
23 good luck for those of you headed for I-5.

24 (Adjourned at 3:41 p.m.)

25

C E R T I F I C A T E

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STATE OF WASHINGTON  
COUNTY OF THURSTON

I, Tayler Garlinghouse, a Certified Shorthand Reporter in and for the State of Washington, do hereby certify that the foregoing transcript is true and accurate to the best of my knowledge, skill and ability.



Tayler Garlinghouse

Tayler Garlinghouse, CCR 3358