

N

NAEGELI

DEPOSITION AND TRIAL EXPERTS

CORPORATE HEADQUARTERS
111 SW FIFTH AVENUE
SUITE 2020
PORTLAND, OR 97204
800.528.3335

THE NAEGELI ADVANTAGE

technology
service
price



NaegeliUSA.com

NORTHWEST POWER AND CONSERVATION COUNCIL

DRAFT SEVENTH POWER PLAN

PUBLIC HEARING

HELD ON
THURSDAY, NOVEMBER 12, 2015
5:03 P.M.

RED LION RIVER INN
CLEARWATER BOARDROOM
700 NORTH DIVISION
SPOKANE, WASHINGTON

1 **APPEARANCES**

2

3 **APPEARING ON BEHALF OF NORTHWEST**

4 **POWER AND CONSERVATION COUNCIL:**

5 Phil Rockefeller, Chair, Washington

6 Bill Booth, Vice Chair, Idaho

7 Tom Karier, Member, Washington

8

9 **NORTHWEST POWER AND CONSERVATION**

10 **COUNCIL STAFF:**

11 Tom Eckman, Power Planning Director

12 Sandra Hirotsu, Senior Counsel

13 Tina Jayaweera, Senior Energy Efficiency Analyst

14 Ben Kujala, System Analysis Manager

15 Elizabeth Osborne, Senior Energy Policy Analyst

16

17

18

19

20

21

22

23

24

25

1 **NORTHWEST POWER AND CONSERVATION COUNCIL**

2 **DRAFT SEVENTH POWER PLAN**

3 **PUBLIC HEARING**

4 **HELD ON**

5 **THURSDAY, NOVEMBER 12, 2015**

6 **5:03 P.M.**

7
8 **MR. KARIER:** Good evening. If everyone can find a
9 place to sit, we'll get started here.

10 First of all, I'd like to welcome everyone. My
11 name is Tom Karier and I'm a member of the Northwest Power
12 and Conservation Council. I'm a Washington member from
13 Spokane. And on my left is Phil Rockefeller, a member from
14 Western Washington. And Bill Booth, a member from Idaho.

15 As you all know, we're here today to listen to
16 your comments on the Seventh Power Plan. And before we get
17 started, I'm going to mostly read a description of what
18 we're doing. This is written by our legal staff, and they
19 like it better if I read it. And since one of them is in
20 the room, I probably should.

21 So, welcome to this public hearing held by the
22 Power and Conservation Council on the Council's Seventh
23 Power Plan. The Northwest Power Act directs the Council to
24 develop a regional conservation and electric power plan, to
25 review that plan every five years.

1 The Council is now engaged in its latest five-year
2 planning process. As part of this effort, we've released a
3 draft of the revised power plan, we released it on October
4 20th, for public review and comment. We will be accepting
5 written comment on the draft power plan until December 18th.
6 That's a key date. The Council will also hold public
7 hearings like this one in a number of different -- other
8 states throughout the northwest in the next six weeks.

9 If you would like to comment on the draft power
10 plan at this hearing, we have a signup sheet in the back.
11 And if you haven't already done so, please -- please sign
12 up. You can also leave written comments with us this
13 evening if you desire. Your comments tonight will be
14 recorded and placed in the Council's administrative record
15 for the power plan review and considered carefully by the
16 Council as we make the decision to -- on the final power
17 plan, which we expect to make early in 2016. Maybe in
18 March. The same is true for all written comments submitted
19 to the Council.

20 Let's see. For those of you that have signed up,
21 I will read -- I'll read through the list in order. And
22 please begin your testimony by stating your name and, if
23 you're with an organization, who that is. And we may have
24 you spell your last name if you want to ensure that it's
25 spelled properly in the record.

1 Your full written statement -- or you can also
2 submit, as I said, a written statement, and that will be
3 included with your verbal testimony.

4 In some cases, when we have a lot of people
5 testifying, what we -- we have to set a time limit. I'm not
6 going to do that initially. I don't -- I think we will have
7 time. I just encourage everyone to be efficient and concise
8 in making your points. If we do run a little long, I'll try
9 to speed things up a little bit.

10 Let's see. We -- all public comments submitted to
11 the Council, including oral testimony at tonight's hearing,
12 will also be posted on our website as soon as possible. So
13 you can find that at nwcouncil.org. Just simply
14 nwcouncil.org, and look for the Seventh Power Plan and then
15 we'll have a site there that will post your testimony and
16 others.

17 I think with that, we're going -- the plan for
18 this evening, we're going to have a brief presentation by
19 our staff, an overview about the power plan, and then we'll
20 get right into the testimony. So I'm going to call on Tom
21 Eckman from our staff to get that started.

22 **MR. ECKMAN:** I was told to use the mic, so -- I'm
23 not sure you need it, but she does.

24 Okay. I have a few slides here just to give an
25 overview of the key findings in the power plan and finish

1 with a statement about what our resource strategy is evolved
2 through those findings and then the floor is open for you to
3 come up and testify. We need to clean the desk first, so
4 give us a second or two.

5 Okay. I'm going to go through these because Tom
6 covered those in the opening comments.

7 A basic key finding on the power plan was both
8 from a standpoint of energy and capacity, that is, peak
9 needs during the winter period. Energy efficiency and
10 demand response are the dominant resources that we see cost-
11 effective development over the next two decades.

12 On the energy side, this is the energy efficiency
13 wedge and the resource portfolio on average across all the
14 futures we tested. It starts at zero and goes up to about
15 4,500 average megawatts over the 20-year period. We add a
16 little natural gas to that at the end, some solar and wind,
17 and those are largely developed in response to the existing
18 renewable portfolio standards in Oregon, Washington and
19 Montana.

20 On the capacity side, on the peak winter capacity
21 side, the big wedge again is energy efficiency because it
22 provides winter energy savings when demand is highest. And
23 so it's the dominant new development for meeting peak
24 capacity in the winter. On top of that, we've got some
25 demand response. On average it's around 700 megawatts at

1 peak capacity.

2 We also see on top of that some natural gas at the
3 tail end and wind and solar. And those two in particular --
4 gonna go back.

5 Those two, wind and solar, you can't see the lines
6 because they don't provide very much winter capacity. And
7 so we didn't find those to be very useful in meeting the
8 need for winter capacity because the sun doesn't shine very
9 much here in the winter and the wind doesn't blow when it's
10 really, really cold. So both of those are problematic for
11 those resources.

12 This is the resource stack that we see. It's net
13 load after energy efficiency. So I've said energy
14 efficiency is the dominant resource going forward. Energy
15 efficiency develops enough resources to keep loads flat for
16 the next two decades.

17 And the green where -- on top of that, the little
18 dark red wedge, is the effect of federal standards that have
19 been adopted since the last plan. It drops the load about
20 1,500 average megawatts by the tail of the forecast period.
21 So it has a fairly significant effect on the load forecast
22 before we start developing additional conservation
23 opportunities that are yet to be -- that have been
24 identified in the plan.

25 In about 80 percent of the futures, energy

1 efficiency develops all -- covers 100 percent of load
2 growth.

3 These are four policy cases that we tested. The
4 existing policies are those that are existent right now for
5 renewal portfolio standards and for state credits for taxes
6 and all kinds of other things, federal credits for taxes on
7 resource development, in addition to the EPA's 111-D
8 requirements for carbon emissions.

9 This is the load we see after energy efficiency in
10 the existing policy case. We look at the carbon risks --
11 carbon cost risk case, where we imposed a carbon price
12 between zero and \$50 randomly through the period,
13 increasingly problematic -- or problems -- probability over
14 time so that by the end of the forecast period, the average
15 price was down to \$50 a ton and basically, the same result:
16 Net load after efficiency, the same as existing policy.

17 We looked at a low gas price case where the gas
18 prices were dropped to about \$3 a million BTU to less than a
19 few dollars a million BTU as we go forward in time. That
20 still didn't produce reductions in energy efficiency. We
21 still ended up with -- basically at the same place, energy
22 efficiency meeting all well below growth in the average
23 case.

24 We look at lower conservation case, this is where
25 we've only purchased conservation up to the price of the

1 wholesale market, not long-term avoided costs. And that
2 produced a lot less conservation, about 1,200 megawatts by
3 the time we get done. It also had another effect, is that
4 it increased the total cost of the system by about \$14
5 billion. So it wasn't a really good outcome. Under
6 investing in energy efficiency added significantly to the
7 price of the system. In the existing policy case, the
8 present value system cost was about \$88 billion. This added
9 \$14 billion to that total.

10 If we look at the retirement of coal plants and
11 the impact on natural gas generation, our principle finding
12 here was as we retire coal plants, existing natural gas
13 plants are used more.

14 This is the amount of natural gas generation on
15 the average we'd see going forward if the coal plants that
16 have been announced for retirement, Centralia in this state,
17 Boardman in Oregon, and North Valmy in North Nevada, is --
18 had not -- will not close. Well, so we see the natural gas
19 generation declining over time. Because we're doing energy
20 efficiency, we have less need for load, load resources from
21 energy efficiency -- from natural gas.

22 If those plants are retired, that's the line you
23 see. You can see that there's addition of natural gas
24 utilization as those plants retire in 2020 and 2025. So
25 natural gas is a principle source at the go-to. It's the

1 next thing in our resource stack we develop after coal
2 retirements.

3 If we impose a price of carbon on that system that
4 increases over time, natural gas generation also goes up.
5 The existing natural gas also goes up. That's because coal
6 prices are now higher than natural gas dispatch and it's
7 more economical to run gas than it is coal.

8 This is a scenario where we retired all coal
9 plants in the region and any inefficient gas plant that
10 exists and by 2025, when all that took place, then we see
11 again a bump in the existing natural gas generation. So the
12 conclusion we draw on here is that CO2 offsets when we're
13 trying to reduce carbon can be done by providing additional
14 dispatch of natural gas resources that we already run.

15 This is the renewable portfolio standard that we
16 increased to 35 percent. What happens here is we flood the
17 market with very inexpensive, low-cost, very little
18 generation in terms of dispatch, and the natural gas
19 resources that we have in the region can barely keep up with
20 that price so they don't dispatch very much.

21 Carbon emissions. Big story in the plan. We
22 looked at lots of ways to reduce carbon, and here's a couple
23 samples here. We saw -- this is the carbon generation that
24 we would see in the northwest if the three coal plants that
25 have been announced for retirement do not retire. So we

1 start at around 34 million -- or 3 million metric tons and
2 end up pretty much the same place.

3 Those plants are identified for retirement and
4 that's what we see here in this next line. That's the
5 emission drop that you get through those coal plant
6 retirements in 2021, 2025. By the end of 2026, they are
7 offline. That blue line also carries with it about 4,500
8 megawatts of energy efficiency that reduced load growth and
9 the need for new resources beyond where we are right now.

10 If we add a carbon price to that, a fairly
11 significant one, starting at around \$50 a ton to begin with
12 and going to around \$60 a ton at the end, we drop carbon
13 emissions immediately by basically reversing the amount of
14 coal that's being generated and replacing that with natural
15 gas generation.

16 If we bring the prices up to carbon slowly, that
17 just happens a little less -- a little more over time rather
18 than immediately.

19 And if we do retire the coal plants in the region
20 by 2025, we see a dramatic reduction in carbon. We get down
21 to about 10 million metric tons by the time we're done, from
22 around 35. And this is for just the coal plants that are in
23 the four northwest states. This does not include the coal
24 plants out of region in Wyoming. It's only in the four
25 northwest states. It does include Colstrip, but not Jim

1 Bridger, for example.

2 If we impose a 35 percent RPS, we get down to
3 about where we would with imposing the carbon tax at around
4 \$50 a ton by the end. Same neighborhood.

5 This yellow line is the EPA limit for the four
6 northwest states under their new regulations that were
7 adopted in August. So they go into effect in 2022 and phase
8 in through time. By 2030, their number's around less --
9 just over 30 million metric tons. And if we hadn't retired
10 those coal plants that are already announced, we wouldn't be
11 there. We wouldn't make it. Those coal plant retirements
12 plus the addition of the energy efficiency to meet load
13 growth take us well under in all the policy options that we
14 looked at. But the big effect there was the reduction in
15 coal consumption in Oregon, Washington and Nevada.

16 Okay. Key findings. We could reduce carbon
17 emissions by 80 percent as -- for the total footprint of the
18 region. That's a little bit different footprint than I
19 talked about just before. This footprint includes plants in
20 Montana and Wyoming and a bunch of generation that's not
21 counted in the EPA rules. But using an RPS to reduce those
22 emissions is not a very economical option.

23 An example of this. These are little bars that
24 show the amount of emissions that we see per ton per year in
25 2035. We start out with sort of a scaler here. The

1 emissions in the total power system were about 55 million
2 metric tons on average between 2000 and 2012. We -- with no
3 coal retirements, if Centralia, Boardman and the Valmy
4 plants are not retired, we end up with about 45 million
5 metric tons by adding energy efficiency to the portfolio,
6 but still running those coal plants. That drops to 34
7 million metric tons assuming those coal plants are retired
8 as scheduled.

9 We add a renewable portfolio standard to that, we
10 drop it another 5 million metric tons, from 34 to 29 million
11 metric tons per year in 2035. Other cases drop this below
12 20. And then finally, when we take all the technology we
13 know how to use right now that's commercially available, we
14 can get down to 12 million metric tons. That's' the 80
15 percent reduction from 55. That's a pretty big step.

16 When we look at the economics of this, that little
17 change there, imposing up to 35 percent RPS, adds about \$34
18 billion to the system. If we look at going all the way down
19 to that number by simply retiring the coal plants in the
20 region and inefficient gas, that's a \$20 billion incremental
21 cost relative to -- and getting you from 34 to 12 instead of
22 from 34 to 29 for \$34 billion.

23 So, now look at the resource strategy. Its core
24 is energy efficiency, 1,400 megawatts on average by 2021;
25 4,500 by 2035.

1 Expand the use of demand response or looking at
2 extra regional markets to supply peak energy in the winter
3 to meet resource adequacy requirements. Those are a new
4 demand response. In particular it is a new resource that
5 we're looking at in this region. It's been developed in
6 other regions for a long time.

7 Renewable resources. Basically, meeting the
8 standards we've got. And I think a principle effort here is
9 to look for renewable resources that can provide more
10 consistent output and winter peak energy. We presently
11 don't have those in the portfolio. We have solar PV and
12 wind. We need something like geothermal or wave energy that
13 can provide winter energy and peak demand during the winter
14 to meet our needs.

15 Natural gas. We see an increase, as I said, of
16 existing natural gas and little need for new natural gas
17 generation until post-2025, 2026, depending on how fast we
18 have load growth and whether or not we develop demand
19 response. If we don't develop demand response, then we'll
20 be seeing additional gas generation come in and compete with
21 external market purchases potentially as a viable source of
22 winter capacity.

23 Using the resources we have in this region in the
24 region will avoid future development. That has some
25 interesting contractual and equity issues associated with

1 it, and I'm sure some of you can talk to that.

2 And finally, we need, as I said, response -- in
3 response to the resources we have right now, we need better
4 renewable resources and to look more for energy efficiency
5 long-term, non-carbon-generated resources.

6 And finally, we will adapt -- we'll do a mid-term
7 assessment to check things out to see whether the actual
8 future matches any one of the ones we tested.

9 And I'll stop there, clear this off, and let
10 testimony begin.

11 **MR. KARIER:** Good. Thanks. Thanks, Tom. A nice,
12 concise summary of a several hundred-page document.

13 So I'd like to -- before we get started, I wanted
14 to -- I forgot to introduce some of our staff from the Power
15 and Conservation Council. And maybe you could just wave
16 when I mention your name.

17 John Harrison's here. Sandra Hirotsu in the back.
18 Tina Jayaweera, is it, from Portland. Ben Kujala.
19 Elizabeth Osborne.

20 So we have a number of people here. I just wanted
21 you to know who they are so maybe after the hearing, if you
22 want to follow up with any of us or the staff, you can feel
23 free to do that.

24 I also should mention that it'd be a good time now
25 to turn off cell phones. I just did mine as Tom was

1 talking, and it's never too late at this point to turn those
2 off.

3 So with that, let's get started. And as I call
4 your name, come up front here. First person is Anne
5 Stephenson. Good evening, Anne. Have a seat.

6 **MS. STEPHENSON:** My name is Anne Stephenson. It's
7 S-t-e-p-h-e-n-s-o-n. And I do not belong, really, with any
8 organization. I'm a citizen and I'm just here to thank you
9 for this opportunity to speak for clean power renewables. I
10 would like to see more emphasis put on renewables.

11 And I think the gentleman that talked -- that just
12 gave the presentation kept talking about current technology,
13 and I think we need to be a lot more bold and promote
14 technology into the -- or promote the study of technology
15 into the area because I know it can be done. If they can,
16 you know, put something up into the air to block the sun
17 from heating us up, you know that they can also devise more
18 technological adaptations so that we don't need to use the
19 gas coming on and that we can use more renewables.

20 And I agree with all of you that we do need more
21 energy efficiency. That's really important. But I think
22 you need to really be more bold and go for the gusto and,
23 you know, do the best you can do rather than the minimum you
24 can do. And I like the idea of making it a regional area
25 and perhaps, as a region, we'll be able to show the rest of

1 the country what can be done in terms of saving energy and
2 getting away from the fossil fuels that are dirtying our
3 skies and water and land.

4 So, thank you for that opportunity.

5 **MR. KARIER:** Good. Thank you, Anne.

6 Jim Robbins. Good evening, Jim.

7 **MR. ROBBINS:** Hi there. How are you?

8 **MR. KARIER:** Good.

9 **MR. ROBBINS:** My name is Jim Robbins. I'm with
10 Kootenai Electric Co-op. I'm a board member on their board,
11 and I also sit on board of the Idaho Consumer Owned Utility
12 Association in Boise.

13 So in reading through this document -- let me --
14 let me kind of give you a little of my background so that it
15 gives credence to what I have to say.

16 I spent 35 years in the natural gas pipeline
17 business, 20 of those years as the director of operations of
18 Pacific Gas Transmission, now called Gas Transmission
19 Northwest-TransCanada Corporation. That pipeline runs from
20 Alberta, Canada to California, and it's one of the largest
21 pipelines in the United States. As a director, I bought and
22 sold millions of dollars' worth of gas off -- on that
23 pipeline, and so I'm fairly familiar with the pricing of
24 natural gas and the production in Alberta.

25 One of the things I see out of the Seventh Power

1 Plan was a range of pricing that they believe natural gas
2 will be. And if there's anything I learned in that 35 years
3 is that nobody predicts that. It goes from real bottom
4 prices to unbelievably high prices. And there's lots of
5 drivers behind that and it always lags what's happening in
6 the marketplace.

7 And the reason it does is because producers go out
8 -- small producers go out, they borrow money, they drill and
9 explore and they develop and they overdevelop, as you've
10 seen in the last few years, and that's just been a cycle
11 that's happened for the last 25 years. And then the price
12 goes down, so it's economics 101. But there's so much --
13 they've got all these investors and debt that they have to
14 keep producing to pay the bills, but they don't go out and
15 do any more exploration and production. So down the road,
16 you'll see the supply start to dwindle away. And when the
17 supply starts to dwindle away, the price will go up.

18 The other thing that affects price is pipeline
19 capacity. If there's pipeline capacity to bring the
20 resource to the end user, then the price signals are pretty
21 clear. But if the pipeline gets capacity limited, then that
22 changes and it's the demand price cycle. It is 101
23 economics as well.

24 So having said that, in my experience, I saw a
25 couple of things in the plan that I thought you ought to

1 really consider. One is, you mentioned Henry Hub. And you
2 used Henry Hub as somewhat of a key. Henry Hub is down in
3 the southwest. It's not in the Pacific Northwest. And we
4 really have a fairly good documented history for Stanfield,
5 Malin, Sumas, those places in the Pacific Northwest as to
6 what the pricing has been in the historical.

7 So I would use, if I were doing something in terms
8 of gas generation, I would use Stanfield because it's right
9 in the middle -- Stanfield, Oregon -- right in the middle of
10 where most of your electric gas generation is. So that's my
11 first suggestion.

12 Secondly, when you look at this pricing, I think
13 your bottom is too high and your high is too low. Don't be
14 surprised that in the next 15 years, you see the kind of
15 swings that you've seen in the last 15 years, and that's
16 from under \$2,000 per million -- MMBTU to over \$15 for
17 MMBTU. And if I could predict what that was or any of the
18 people that do exploration, they'd be a lot wealthier.

19 It's a very difficult process because there's lots
20 of players in the process. There's demand that you don't
21 recognize. Currently on the books you see two large demands
22 that are in the northwest that are -- that are looking at, a
23 methanol plant in Central Oregon with about 400 million
24 cubic feet a day and, of course, the Coos Bay LNG Export
25 Terminal for Asian exports. And that's about 800 million.

1 And that is going to take all the capacity that's out there
2 that is currently available in Gas Transmission Northwest's
3 pipeline. And when that happens, you're going to see price
4 increases just because of the capacity limitations.

5 All right. As Bill knows, I've had some
6 conversations over lunch with him about these things, and
7 he's pulled my arm to be on your natural gas pricing and
8 electric pricing committee, so I'll get to hear -- you'll
9 get to hear more about my thoughts on these prices.

10 Now, let's turn to conservation. One of the
11 things that I find as a problem in dealing with conservation
12 is we do a lot of that based on money. It's the money we've
13 spent to do certain things to make conservation work. And
14 it seems to me, in talking to most of the people that I, you
15 know, feel confident in and getting information from the
16 technical parts of the business, we need to shift that to
17 kilowatts.

18 What I'm saying is, when you look at having a new
19 appliance and somebody -- you've increased the efficiency of
20 the refrigerator and somebody buys one, that's great. But
21 that assumes that he gets rid of the old one. And I can
22 guarantee you there's a lot of people in my neighborhood who
23 put that refrigerator in the basement or in the garage and
24 it's filled up full of beer.

25 So that doesn't help you if you just look at the

1 money spent. In looking at what the kilowatts are, you'll
2 get a better picture of what's happening in your
3 conservation program.

4 My last thing is, in working for this pipeline,
5 this pipeline has over 400,000 horsepower and 12 compressor
6 stations that runs through North Idaho, Eastern Washington
7 and Central Oregon. And I'm an engineer and I kind of hate
8 waste, and for years I've looked at all of that heat going
9 up the exhaust pipes of those turbines and I've said, you
10 know, we ought to really do something with that, and it
11 never has been economical. But you're beginning to see some
12 people talk about that, and all I'm going to say is that
13 that heat generation, recapturing that heat, is viable.

14 And there's a project that's been looked at and
15 studied on the Sandpoint compressor station on GTN. It
16 would produce 7.1 megawatts and it would use -- be on a
17 20,000 horsepower turbine. Now, if you've got plus more
18 than 400,000 on this pipeline, I'll let you do the math.
19 That's going to be 140 million -- 140 megawatts that you
20 could develop at about \$65 a megawatt. Now, that's pretty
21 high when you look at what we get from Bonneville, but as an
22 avoided cost rate, that's not a bad number.

23 So I don't know whether or not, you know, whether
24 or not there's electric transmission that would be in the
25 vicinities of these compressor stations to be able to

1 utilize that, but it seems to me that there is a lot of
2 coordination between the major powerlines and major
3 pipelines. So the one compressor station in Athol is pretty
4 close to where there is existing turbine generators. You
5 have several compressor stations down through Central Oregon
6 running near high-power -- high-voltage powerlines.

7 So there is that opportunity out there, and I don't
8 think anybody's ever looked at it and said: You know what?
9 This heat and exhaust is going up in the atmosphere anyway.
10 We ought to really maybe capture it and try to generate
11 power.

12 So that's my comments. I would say this. In the
13 few years that I've been coming to some of your meetings and
14 getting to know Bill Booth and some of your other Council
15 members, a lot of times people throw stones at you and I'd
16 like to, say, throw a few flowers. I think you guys do a
17 wonderful job. I think you do -- it's -- in balancing all
18 of the things that are necessary to make this energy thing -
19 - energy process in the northwest a cooperative and
20 coordinated effort. And I just personally, from an
21 individual, I thank you.

22 **MR. KARIER:** Thanks, Jim, and I'm glad you're
23 joining our technical advisory committee.

24 Next, let's see, Christine Clark. Good evening.

25 **MS. CLARK:** Good evening. Thank you for this

1 opportunity to comment on how carefully we're planning --

2 **MR. KARIER:** Oh, could you say your name for the
3 record.

4 **MS. CLARK:** Yes. Christine Clark, C-l-a-r-k. My
5 address is 200 --

6 **MR. KARIER:** We don't need the address, but if you
7 are representing somebody, let us know.

8 **MS. CLARK:** Yes.

9 **MR. KARIER:** But if you're not --

10 **MS. CLARK:** Yes. I'm a member of the Sierra Club
11 and I'm very happy to be a member of an organization that
12 provides so much information to its members.

13 **MR. KARIER:** Thanks.

14 **MS. CLARK:** My concern is conservation, and I
15 really appreciate the careful planning that's being provided
16 for conservation of energy.

17 I think most of us as humans, as we celebrate our
18 electronic access to information, we want more of it. This
19 seems to be a human quality: Let's have more. However,
20 electronic information in our world requires a lot of
21 electricity and a lot of heat generation. We have server
22 farms in Quincy, Washington. We have server farms in Oregon
23 for Facebook. And so we're accepting the fact that the
24 production of internet communication requires electricity
25 and has a challenge with heat as we produce our information

1 services.

2 I think we have a worldwide crisis as we have
3 increased our carbon dioxide content on our planet so that
4 we are now experiencing climate change. Our oceans are
5 heating up. National Geographic in the past few years has
6 had wonderful explanations of the changes of currents in our
7 oceans.

8 Personally, we have -- we record the outdoor
9 temperature at our home in the morning, and we are seeing a
10 five degree increase in our winter weather temperatures in
11 the morning at dawn when we get up at 6:30. It's five
12 degrees higher this time of the year than it was the past
13 couple of years. I see buds on trees and, if we do have a
14 deep freeze, those buds are going to be damaged and we're
15 going to have an agricultural crisis because of the changes
16 in our weather.

17 But looking at your regional planning, I agree the
18 coal-fired plants need to be retired as soon as possible,
19 not later. I think they need to be retired now. I think
20 the problem with coal and oil is it's a sequestered carbon
21 so that when you burn it to create energy, you're releasing
22 more carbon into the atmosphere, which is absorbing more
23 sunlight and increasing the heat on our planet. I want to
24 know if I can expect sand dunes in my backyard south of Deer
25 Park in a couple of years.

1 I agree with renewable energy. The challenge with
2 renewable energy is the cost and the benefit ratio. How
3 much does it really cost for renewable energy? Look at the
4 ecological impacts. With the wind towers that we have,
5 we're killing the birds, and I think birds are valuable to
6 our environment.

7 As a consumer, I have a concern about decreasing
8 energy use in my old house. It's a 1960s house. That was
9 when they built houses to have radiant energy from
10 electricity. Well, we're trying to decrease that use in our
11 house, so we have a pellet-fired stove and we have a wood-
12 fire insert in our fireplace to save our energy. And we
13 keep our thermostats for the radiant energy decreased as
14 much as possible.

15 I would like to see more encouragement of energy
16 conservation in the home because what do we have? We have
17 individual homes. This was part of the power sales when
18 electricity was first developed. Have your own home, you
19 know. We waste energy with single family homes, and there
20 seems to be a swing towards multi-family housing. There was
21 a wonderful Avista project in Spokane Valley at Pasadena
22 Park. We stayed there for six months when we returned to
23 Spokane, and our electrical bills were amazingly low. So I
24 would encourage that as well.

25 Thank you.

1 **MR. KARIER:** Okay. Thank you, Christine.

2 Next, Penny Derleth. And if I pronounce it wrong,
3 you can correct me.

4 **MS. DERLETH:** You actually got it right, and
5 nobody gets it right.

6 **MR. KARIER:** A stab in the dark, but thanks.
7 Welcome.

8 **MS. DERLETH:** Okay. My name is Penny Derleth.
9 It's D-e-r-l-e-t-h. And I came in here thinking I knew a
10 little bit. I discovered I don't know anything about what
11 you're talking about. And this nice gentleman over here
12 with this PowerPoint show, I didn't understand very much at
13 all about what you said. It was a wonderful presentation; I
14 have nothing but questions.

15 I am a member of the Sierra Club, but only because
16 I toss them money every so often. I'm not a practicing
17 member and I'm not representing them. I'm here as Jane Q.
18 Public, and I really, really think we need to do some -- oh,
19 I'm not the only one. Everybody believes that we need to do
20 something about global warming.

21 I would like to see -- get rid of the coal plants.
22 I hate the idea of using gas instead. Although it's better,
23 it's not good. I'm sort of puzzled by geothermal. How -- I
24 didn't even realize the northwest had geothermal. And, of
25 course, nobody has mentioned the water power, which I think

1 they're trying to get rid of because of the salmon and other
2 issues.

3 But I want us to take care of the ecology. I want
4 us to have really nice, new things that we're coming up with
5 but I can't think of the proper word because I'm a senior
6 and senioritis gets me every so often. But new technology,
7 we need to come out with that.

8 And I just read last night, I think it was the
9 U.N. that said that it's up to people like you, the
10 utilities and the power people, to do your thing to keep our
11 planet from going over the edge. And I thank you very much.

12 **MR. KARIER:** Thank you, Penny.

13 Tom, we're going to have to work on your slide
14 presentation, I think.

15 Stephen Boorman.

16 **MR. BOORMAN:** My name is Stephen Boorman with the
17 City of Cheney, and kind of echo some of Jim's comments.
18 One of the things we'd like to see is some windage in that
19 conservation target. None of us are -- probably can predict
20 the future.

21 The other comment I had is I can remember when the
22 Sixth Plan was being developed, that conversation, how we
23 needed to look at capacity instead of just energy. And so I
24 think there's some definite kudos for the Council to really
25 bring that to a forefront because as a utility manager,

1 capacity is in some ways more valuable than energy. So I'd
2 like to acknowledge that that's in there.

3 That's all I have. Thanks.

4 **MR. KARIER:** All right. Thanks, Stephen.

5 Pat Keegan. Evening, Pat.

6 **MR. KEEGAN:** Hello. Thank you. My name is Pat
7 Keegan. I'm with Collaborative Efficiency.

8 I was just thinking and I remember how nervous I
9 was -- I think I was an intern or something for the very
10 first power plan. I think I had to handle somebody's slides
11 and they were on transparencies. Remember the overhead
12 things? I was so nervous, and it's nice not to have to be
13 that nervous for this one.

14 I'm an energy efficiency consultant. I used to
15 work in the northwest and worked with a state energy office.
16 I left the region, though, in '93 and was able to see how
17 energy efficiency was being done internationally and around
18 the country and then recently came back, so it's been really
19 an interesting picture to come back and kind of see where
20 things are at.

21 It's been -- my job now in consulting is really to
22 help small utilities, so I work with the co-ops around the
23 country and small municipal utilities, and I have some -- a
24 little bit of business in the northwest. So I don't
25 understand all of Tom's slides either, so --

1 But anyway, I guess my one comment is, kind of
2 seeing what's happening in the world of energy efficiency,
3 is that I think there's a lot more that's achievable than
4 we're really crediting in our plans, and there's some reason
5 for that. Over the last decade or so, there are so many
6 more tools to be able to do energy efficiency at scale than
7 we've ever seen. All new methods, new software, new ways to
8 automate the whole process of energy efficiency. We just
9 need to get a lot more done.

10 And, there's -- you know, now we're seeing around
11 the country a lot of financing programs come in. I mean,
12 most of our energy efficiency in the residential sector in
13 the northwest has been by rebates. Well, people that don't
14 have cash can't participate in those programs. So having
15 really good financing that will get a lot more people in,
16 you have a lot more achievable conservation.

17 Also, a big new thing that we're looking at, the
18 northwest was one of the pioneers, but it's behavioral
19 efficiency. Something we used to shy away from. But it's
20 ways to really have people controlling their buildings in a
21 really efficient way. And the challenges for us is to
22 really figure out what they're doing and to make sure that
23 that's a sustainable savings and it's there year in/year
24 out, something we can really depend on. But there's huge
25 advances happening in that area as well.

1 So how would we -- how do we do this in the
2 northwest? So how would that happen here? You know, we've
3 got over a hundred utilities in the region. You know, most
4 of these utilities are small. They're pretty much operating
5 it the way they always have, you know, since we started
6 doing this energy conservation work 30-some years ago, and
7 the beautiful thing about that is they're customers trust
8 them. And when our small utilities go out and talk to their
9 customers, they get some real traction. They're close to
10 home. And that's a huge strength.

11 But there's also a big weakness that comes with
12 that. These are tiny organizations. And it's not just the
13 northwest, you see this all over the country. Small
14 utilities can't afford these tools to scale up energy
15 efficiency. Only big organizations can. So now what's
16 happening around the U.S. is big investor-owned utilities
17 are modernizing their energy efficiency programs and
18 learning how to get way more done, but these small utilities
19 can't do that. They can't write the checks for it.

20 And we haven't upgraded our institutional
21 infrastructure to help them deal with that, right? So we
22 pretty much have what we used to have. We have NEEA, thank
23 goodness. They were an innovation that was brought in. But
24 we have BPA and we have NEEA.

25 **MR. KARIER:** So that's the Northwest Energy

1 Efficiency Alliance.

2 **MR. KEEGAN:** Yeah. Oh, sorry about that. Yeah.

3 **MR. KARIER:** Right.

4 **MR. KEEGAN:** But it's known nationally. It's very
5 highly respected, and so is BPA. BPA has done a lot of
6 really great things. But if we really want these small
7 utilities to be able to do more, we have to provide more
8 support.

9 And I think they really need kind of a different
10 kind of institutional support than they're getting. If you
11 look around the country and you see different ways small
12 utilities are being supported, you'll see some things the
13 northwest doesn't have. You know, the organizations that
14 are wholesalers, the generation transmission organizations
15 that sell electricity to co-ops, for example, like PNGC, but
16 they're all over the country. So there's third parties,
17 nonprofits that can come in and support small utilities.

18 So what we need is a way to keep the strength of
19 the small utility programs where their customers love them.
20 You can really get a lot done with the customer. But we
21 need to empower them with some of the tools so that they can
22 automate, they can use the most modern software, they can
23 get some economies of scale, they can have strong
24 administrative support. If that's done, I think you'll see
25 in the northwest there's a lot more efficiency that we'll

1 consider achievable that we're just not able to get at right
2 now.

3 Thank you.

4 **MR. KARIER:** Thank you. Sorry about the noise
5 next door, but we'll just soldier on while listening
6 carefully.

7 Barbara Morkill. Good evening, Barbara.

8 **MS. MORKILL:** Hi. My name is Barbara Morkill, M-
9 o-r-k-i-l-l. I don't usually come up and speak in front of
10 people, but I just wanted to say thank you for the
11 opportunity.

12 It seems like a fairly well-balanced plan. I'd
13 just like to see more emphasis put on the efficiency. I
14 think as a previous speaker was saying, there's probably a
15 lot more ways we can improve on that and less reliance on
16 the gas. And as climate change really starts to take hold,
17 it's really important that we do away with gas and do some
18 bolder steps for renewables. New renewables or more solar.
19 People can put solar panels on their home. I think if we
20 would help people do that, more people would be willing to
21 do that.

22 So thank you and thanks for closing down the coal.

23 **MR. KARIER:** Thank you, Barbara.

24 Kathleen Nelson. Hello.

25 **MS. NELSON:** Hi. My name is Kathleen Nelson, N-e-

1 l-s-o-n, and I'm an RN and I'm here representing the Sierra
2 Club.

3 And what I would like to speak about is, Tom, I'm
4 so sorry, but I, too, was a little bit confused by your
5 slide presentation. But one of the things that did stand
6 out to me --

7 **MR. ECKMAN:** It's a trend.

8 **MR. KARIER:** Yeah.

9 **MS. NELSON:** -- was seeing that year 2035. And
10 I'm thinking, we're still going to be using coal plants?

11 I just, as a health professional, I have witnessed
12 myself the passing of these humongously long coal trains and
13 the amount of coal dust that they're putting out across our
14 country, and anything we can do to minimize that, I think in
15 the long haul in our country, we're going to be better off
16 because not only is there an issue of global warming,
17 there's an issue about our own health and how we're going to
18 survive under these growing circumstances.

19 So what I would like to see is some -- not the
20 same old, same old, but a more broader picture, a more
21 thinking-out-of-the-box picture. I know there's huge gains
22 in healthcare that we've made just in the last five years in
23 what we can do, and I'm thinking certainly if we can do that
24 in medicine, we can do that within our utilities.

25 And so I encourage you to please do not continue

1 using coal-based energy and see what we can do to have new
2 resources. Thank you.

3 **MR. KARIER:** Thank you, Kathleen.

4 John, do you have the list, the next list? I
5 don't know where that door comes from, but -- let's see, we
6 have a few more people.

7 Sam Mace. Sam.

8 **MS. MACE:** Thanks for the opportunity and being
9 here in Spokane tonight. My name is Sam Mace. I'm the
10 Inland Northwest Director for Save Our Wild Salmon
11 Coalition, which is a coalition of commercial fishing
12 associations, sport fishing businesses and groups,
13 conservation organizations and clean energy advocates, all
14 working on salmon restoration in the Columbia/Snake Rivers.

15 And, you know, I certainly personally echo a lot
16 of the thoughts that have come before me and I'm more
17 encouraged at a lot of the things that are in the plan in
18 terms of clean energy and efficiency. Our main concern, of
19 course, are some omissions we feel in the fish and wildlife
20 portion of the draft plan and, in particular, the omission
21 of an analysis of the costs and benefits of keeping or
22 retiring the four Lower Snake River dams, which was included
23 in the Sixth Power Plan and shown to be pretty affordable.
24 And we would very much like to see an analysis in the
25 Seventh Power Plan. And, you know, if it was an important

1 analysis to do five years ago, it's an even more important
2 analysis to do today.

3 And, you know, we've already -- climate change has
4 come up already in the testimony today and in the
5 presentation and, you know, what scientists and what
6 American Fishery Society has said over the years, and
7 others, is that if we want to truly restore our salmon and
8 Steelhead in the Columbia/Snake rivers, that removal of the
9 four Lower Snake dams really needs to be a cornerstone.

10 And right now, those dams are impeding salmon and
11 Steelhead from going up and in, you know, high enough
12 numbers up into the best habitat left in the lower 48.
13 Thousands and thousands of miles of fantastic habitat in
14 Idaho and Northeast Oregon and Southeast Washington.

15 And they're fish that have provided jobs and
16 important money coming in to towns like Riggins, but it also
17 really benefits the towns on the Oregon Coast where I grew
18 up and the fishing communities that I grew up in. This
19 system and these fish benefit a lot of towns and a lot of
20 businesses and their decline has really affected a lot of
21 businesses and people.

22 And this year in particular has been a very rough
23 year for the fish. And, you know, I think we had -- I was
24 thinking -- I was going to say a quarter of a million salmon
25 died in the system this year. The guy next to me, who was

1 looking over my shoulder, nudged me and said, no, it was
2 700,000. So anyway, between a quarter million and 700,000.

3 The juveniles going out, of course, everyone knows
4 we had 4,500 Idaho Sockeye come into the system. We had 45
5 make it on their own to the lake, Redfish Lake. Not very
6 good numbers. The Fish Passage Center has looked at the
7 very dismal juvenile survival rates out of the system this
8 year. I think it's in the 30th percentile for spring/summer
9 Chinook and Steelhead.

10 And so we've had some better ocean conditions in
11 the past, and the scientists are telling us those are likely
12 to turn around and go back into the cycle that is less
13 favorable to salmon. And scientists and others are also
14 telling us and we see a lot of stuff that -- you know, news
15 stories that what we're seeing this year is probably going
16 to be the new normal that we're going to be looking at, and
17 certainly what we're looking at for next summer is very
18 likely to be as bad.

19 And so the other thing, too, the Fish Passage
20 Center recently did was a memo looking at the impacts on
21 heat in the system from the dams, and really noting that,
22 yes, of course it was hotter in the streams, in their natal
23 streams that they were going to, but that cumulative effect
24 of hot water is really doing a number on the fish.

25 And so we have to do more in this system if we

1 want to have salmon and Steelhead into the future, and one
2 of the pieces that really needs to be looked at is removal
3 of those four dams. And, you know, we're encouraged --
4 there's been a few studies that have come out looking at
5 what the costs would be in terms of power if those dams were
6 removed.

7 We very much support the Northwest Energy
8 Coalition's report that uses your -- you know, the Council's
9 numbers, same kind of methodology of looking at what it
10 would cost your average power customer if those dams were
11 taken out. A very conservative analysis came up with \$1 a
12 month. There's another report out there by the economist
13 Tony Jones that slices and dices the numbers in a different
14 way and comes out with, I think, a 6 percent benefit per
15 power customer. Either way, it's definitely affordable to
16 the region.

17 And I think the other thing that is a backdrop,
18 that's not an issue that this council is dealing with, but
19 in terms of the costs and benefits of those dams, the
20 primary purpose of them was for transportation, to make
21 Lewiston, Idaho a seaport. It's the reason they were built
22 to begin with, and we are seeing the shipping on that river
23 decline by 70 percent in the last 12 years.

24 And right now, when, you know, we talk about the
25 Columbia/Snake transportation system, really you have a

1 Columbia transportation system and you have a Snake and
2 they're connected. 96 percent of all the goods that travel
3 on that system travel, you know, from Pasco down -- or
4 upstream to Pasco, only 4 percent is on the Lower Snake.

5 So certainly when it comes to transportation and
6 that benefit, it's getting harder and harder to justify the
7 rising costs of maintaining those dams, especially looking
8 into the future as they're aging. You've got the sediment
9 issues that are also costing us money. You've got the flood
10 risk concern for Lewiston, as they're going to have to
11 eventually raise those levies if those dams stay.

12 So we think an important thing to do right now is
13 on the power end of it, for the Council to really look at
14 analysis of that in the Seventh Power Plan. Thank you.

15 **MR. KARIER:** Okay. Thanks, Anne.

16 Bill Johns. Good evening, Bill.

17 **MR. JOHNS:** My name is Bill Johns. I'm a retired
18 civil engineer. I actually worked on Lower Granite Lock and
19 Dam, and some of the things that she just said aren't
20 exactly true. Power production was part of the cost-benefit
21 ratio, so was transportation and so was, I think, a little
22 bit of recreation.

23 And I think it was a good investment of money. I
24 mean, it used to be that we looked at producing more power
25 in this part of the country, and that's what drove the

1 economy of this area. Now, it looks like you just look at
2 trying to hold maybe what we have and actually reducing. I
3 mean, we've lost another two aluminum plants. I remember
4 going to a meeting when we lost the first round of aluminum
5 plants; people were crowing of how much efficiency we've
6 gained and how much that helped. But all we did was
7 eliminate jobs. Now you're going to have some efficiencies
8 with these two aluminum plants going down, but the jobs are
9 going down, too.

10 I'd like to see more aggressive power production,
11 and not with the unreliable wind and solar. You know as
12 well as I do the reliability and what it costs. To produce
13 power from them, you have to be backed up by some reliable
14 power. Either that, or we're going to shut of power. I
15 agree, I think nuclear, possibly, but I don't know how long
16 it would take even at Hanford to try to site another one.

17 Gas prices, I agree with the guy who was talking
18 about gas prices. I've had something to do with pipelines,
19 trying to get them to a different place. And with the way
20 the UTC operates in Washington, it's very difficult because
21 you can't raise the money. You have to put up the money and
22 speculate. It's not like when they first produced them.

23 And I don't know what it would take, because I've
24 been in -- done a lot of EISs, to see -- even to site new
25 pipelines for gas. So when you reach the capacity of these

1 pipelines that are existing, which they do have a finite
2 capacity -- and they have a tiered approach of where that
3 gas can be used first. So even if the gas capacity is
4 there, you can't use it when you have your primary users of
5 it.

6 I also do not believe that CO2 is a pollutant. So
7 let's not put down that everybody is sold on the global
8 warming hysteria.

9 It amazed me when the -- what I call the pigtail
10 lights, the new lights that we use everywhere, at the same
11 time they were talking about the mercury that was from the
12 coal-fired plants and yet I read on the side of that that
13 they have mercury in them. And you should have seen the
14 report that they had from the local health district here,
15 what you should do if one of those falls on your carpet.

16 I think that coal is a good source of energy.
17 It's here. We know the supplies. It's a good base unit. I
18 don't think we should be eliminating them and replacing them
19 with gas, to start with. Thank you.

20 **MR. KARIER:** Thank you, Bill.

21 Jim Lee. Hello, Jim.

22 **MR. LEE:** Good evening. Jim Lee, that's L-e-e,
23 with the Citizens Institute for Public Policy based here in
24 Spokane.

25 And I guess what I would like to -- one of our

1 pending citizen resolutions relates to the concept of an
2 Apollo project nationwide to move us to a hundred percent
3 clean energy by some time certain in the future, ideally
4 2050 or sooner.

5 I guess what I just wanted to do is encourage this
6 panel to think beyond the 20-year time horizon that you're
7 obligated to deal with and begin to ask the question: How
8 do we truly move beyond carbon combustion? I honestly
9 believe that a hundred years from now, our great-
10 grandchildren will look back at the way that we burn fossil
11 fuels as something that's unthinkable and primitive. So
12 let's lay the groundwork now to reach the complete
13 elimination of carbon combustion.

14 Even if you deny or have doubts about climate
15 change, there's something called the Precautionary Principle
16 and all the insurance companies and the -- especially what
17 they call reinsurance companies, who insure the insurance
18 companies, are very, very worried about the cost and the
19 destruction of what will come with global warming. And so,
20 as somebody alluded to, our military is also making
21 contingency plans and putting serious consideration into
22 place, what they'll have to do to meet those crises.

23 So I know it's beyond your scope as you sit, but
24 maybe if you're still involved in the next iteration, look
25 beyond carbon and what it would take to get there. Thank

1 you.

2 **MR. KARIER:** Thanks, Jim.

3 Ed Parents. Hi, Ed.

4 **MR. PARENTS:** Thank you. My name is Ed Parents.

5 That's P-a-r-e-n-t-s.

6 The lexicon of the energy game has certainly
7 changed. I'm sorry, I didn't understand much of what you
8 said and I was trying to follow this thing for -- you know,
9 as closely as possible. I was present at the creation, for
10 those of you who don't remember, me and Pat Keegan -- I
11 didn't know where he was. I know he didn't have a clue
12 about where I've been. But anyway, we go back to the days
13 of Skidmore, Owings & Merrill and the ASHRAE 1975 arguments
14 back in the 1970s before the creation of the Northwest Power
15 Council.

16 I was privileged early on, and I don't know how it
17 happened, but Senators Jackson and Magnuson found out that
18 BPA, the DSIs, the mid-basin irrigators, and the privates --
19 or the publics and Potlatch and many, many other players in
20 the energy had been meeting for months -- years, it turned
21 out -- behind closed doors, discussing the region's energy
22 future. And the region's energy future, when I was the
23 first guy to walk in the door that wasn't wearing an
24 engineer's hardhat from any of the utilities, the energy
25 future was called WPPSS.

1 I brought a souvenir today. I want to share it
2 with the Board.

3 **MR. KARIER:** It's not radioactive, is it?

4 **MR. PARENTS:** No, it is not. It's guaranteed --

5 **(Laughter.)**

6 **MR. PARENTS:** Guaranteed made out of earth metals,
7 whole earth metals.

8 For those who can't see, that's a belt buckle, and
9 on that belt buckle are the cooling towers of WPPSS-3 and 3
10 through 5 for Satsop, I believe, is where they were planned
11 for. I found that in a secondhand store somewhere and I
12 just said, "I gotta have that."

13 Those plants are now empty cooling towers and no
14 other structures associated with them. The thing was that
15 back then we were projecting energy growth on a straight
16 line 10 percent annual growth. And it was a ridiculous
17 number and it wasn't right.

18 I want to thank this Council. I want to thank the
19 Council's predecessors for having taken this matter
20 seriously and over the years having brought a bit of reason
21 to the power plan of the Pacific Northwest. We are no
22 longer faced with those people who were jumping up and down
23 and saying if you don't build it, we'll all freeze to death
24 in the dark. Well, we didn't build it and, as far as I can
25 tell, the lights are on and the buildings are warm.

1 I am a strong advocate of basic acts of energy
2 conservation. What Pat was talking about, I would encourage
3 the Council members to take a drive through the West Central
4 neighborhood of Spokane, or some of the lower income areas
5 of the East Central and the Logan neighborhoods. Do a storm
6 window count. Do a storm door count. Try and figure out
7 how many of those places would not be using the amount of
8 energy they are using today if we took even the most basic
9 steps and reinvigorated the home weatherization programs,
10 the energy reduction programs, you know, insulation
11 weatherization, weather stripping, that kind of stuff.

12 There's stuff to be had out there. It's still
13 there. We didn't get it all. We can get more of it. And
14 every bit that we get means that we don't produce -- we
15 don't have to produce more.

16 I love the numbers -- I didn't even understand
17 them, but I loved the numbers that showed that we got enough
18 right now. We're doing pretty much okay. And I would
19 encourage the Council to make those numbers even better.

20 The concern that the gentleman from the gas
21 industry raised, capacity and price, if we can continue to
22 reduce consumption of all forms, then the capacity of the
23 pipelines won't be an issue. So we can offset that. We can
24 do better.

25 I want to thank the Council for the opportunity to

1 comment. Keep up the good work. Please do more weatherize,
2 weather strip, caulk, windows. Do what you can. The
3 cheapest kilowatt you'll ever produce is the one that you
4 don't have to use. Thank you.

5 **MR. KARIER:** Thank you, Ed.

6 That exhausts our list of people who designated
7 that they were going to speak tonight, but I suspect maybe
8 some people have decided they would like to. So I'm going
9 to open it up. Is there anyone else that would like to say
10 anything tonight?

11 Come on up and state your name and I'll call on
12 the rest of you as we move along.

13 **MR. RUTHERFORD:** My name is Jim Rutherford. I am
14 primarily here as a father and a grandfather and alumni of
15 Gonzaga as well as Whitworth, and I can't wait for others to
16 do, so this year I've been fortunate enough to be in a
17 position where I put in new windows throughout my house, put
18 a new roof on it, tightened things up a little bit. Bought
19 solar power. I haven't got the panels up yet, but I bought
20 the solar panels and batteries. And I would like to see it
21 so that people who aren't as fortunate as I am can have the
22 opportunity to do that for themselves.

23 If every house in the neighborhood -- I mean,
24 we've got 200 days of sunshine a year right now. We may
25 have 300 in another 10 years, but, you know. Meanwhile, we

1 can reduce a lot of energy consumption by generating some of
2 our own, and that would help out so many.

3 And the Power Council, you know, I'm not quite
4 sure who's representing and what's being represented. I
5 know that Avista has an investment in generating power, and
6 I don't want to see it coming from coal. I don't
7 necessarily want to see it coming from gas. And I
8 understand that it's going to take some time and new
9 technology before we can be generating enough year-round on
10 an ongoing basis, but with all those hot springs, geothermal
11 is available to some of us. There's a lot of things that
12 can be developed.

13 One other thing that I've been doing personally is
14 I'm giving my kids trees in the national forests through
15 Arbor Day. And I think it would be really nice if people
16 had a chance on their utility bill to put a dollar for a
17 tree. And that's what it generally costs, is a dollar for
18 tree. So for my granddaughter's fourth birthday, she got 25
19 trees in the Tahoe National Forest. If we could do that on
20 our utility bill, we might be able to trade off some of that
21 carbon loss, too.

22 You know, we talked about trading carbon with
23 different kinds of projects, but planting more trees in the
24 forests that are being burned off every year is not a bad
25 idea, I don't think. Okay?

1 **MR. KARIER:** Thank you, Jim.

2 **MR. RUTHERFORD:** Yep.

3 **MR. KARIER:** Let's see. In the back, can you come
4 up? Actually, anyone that wants to speak, why don't you
5 come up and sit in the front row here and then we'll just
6 bring you up as we have a chance to do that.

7 **MS. CALVERT:** My name was on the list, but I
8 didn't check it, I guess.

9 **MR. KARIER:** Okay. It was a little odd. You had
10 to write something in the margin to get designated.

11 **MS. CALVERT:** There you go.

12 My name's Jennifer Calvert. I'm connected with
13 the Citizens Climate Lobby and with the Sierra Club and with
14 350.org, and I'm very appreciative of you being here and
15 presenting the plan. And I'm delighted that so much of the
16 plan has to do with using the efficiency. That just almost
17 sounds too good to be true, that if we just be more
18 efficient, wonderful things can happen. But it sounds like
19 and it looks like from the graphs that I saw that that might
20 even be the case, and that would be wonderful.

21 I'm a math teacher and so what he's --

22 **MR. KARIER:** So you like the graphs.

23 **MS. CALVERT:** I like the graphs.

24 **MR. KARIER:** Okay.

25 **MS. CALVERT:** Very much, yeah. They do speak to

1 me. They certainly do.

2 **(Laughter.)**

3 **MS. CALVERT:** And I'm very aware of human nature
4 and the fact that we've been around thousands of years and
5 the fact that, in the normal lifetime of human beings, we
6 base what we think's going to happen in the future on
7 patterns that have happened in the past. And for thousands
8 of years, that's worked really well, but I've seen the
9 graphs and I've seen how things are changing so much faster
10 than they used to in the past.

11 Like, one of the things that I show students is
12 the graph of population change. And in 1800 we had one
13 billion people, in 1875 we doubled that, and about every 75
14 years we double that. And so when you look at the graph, it
15 goes like this, and that's not so bad, and then it goes like
16 this and all of a sudden the change that's happening is
17 happening really, really fast.

18 So my point being that we cannot base what's
19 happening in the future by what's happened in the past,
20 because it's changing faster than it used to happen in the
21 past. So we have got to do everything we can do now. When
22 I look at that curve and how fast it's going up, I'm just so
23 aware that human beings have never, ever been in this spot
24 before, and that makes it a little tough for us to try to
25 think of the future when we've never had to face some of the

1 things that we're facing right now.

2 I -- actually, it surprised me when the gentleman
3 was mentioning about he's not really that concerned about
4 CO2 or climate change and I'm going, "Oh, my gosh," because
5 in my understanding, it's right there in front of us. We
6 absolutely have to do something about it. We need to not
7 pull one more ounce of coal out of the ground. We need to
8 not burn one more drop of oil. It's that urgent.

9 And so with the commission being here and taking
10 our comments, I'm just happy to sit in front of you and say,
11 "uhhhhhh," you know, we have to do everything we possible
12 can from 30 years ago, but now, you know, better start now
13 to do everything we possibly can to make the future possible
14 for us to live here and -- yeah.

15 It just -- I don't know all the specifics of
16 everything that you're going to do or everything we are all
17 going to do. I just know that there's that goal ahead of us
18 and we have got to be so single minded about that goal or
19 the future won't be a good one for my grandchild.

20 So, thank you very much. Appreciate it.

21 **MR. KARIER:** Thank you. Next.

22 **MR. MORRISON:** Thank you for having us. My name's
23 Don Morrison. I'm a lifetime resident of Washington,
24 lifetime fisherman, lifetime hunter, and a lifetime
25 conservationist. When I went to college, I took -- I had

1 five degrees, and the one that kept my sanity was resources
2 management and conservation, about utilization of our
3 resources, our wildlife and our fisheries.

4 A lot's been said here that's been very viable. I
5 agree with these gentlemen that talk about making the
6 resources available to those that need it. I've worked for
7 BMAC, which is the Blue Mountain Action Council, when I
8 lived in Walla Walla and I worked for SNAP many years ago,
9 and we did weatherization, fixing old houses. Making them
10 livable. Simple thing to do, big return on a little
11 investment.

12 I am not a fan of coal, nor oil. The damage is
13 huge. CO2 is real. The global warming is real. If anybody
14 doubts it, drive southwest out here to Sprague, Lamont and
15 tell me how many potholes you can count that used to have
16 water in them that are bone dry. And the creek that I was
17 hunting along yesterday is dewatered. First time I've ever
18 seen that. I've seen it in low water, but I've never seen
19 it empty. And I was hunting on land that was provided by
20 the Corps of Engineers in compensation for the land lost by
21 the dams.

22 We have screwed up this environment. Our planning
23 council, there's much to be done. A lot that needs to be
24 done is with our river system. The dams on the Snake River
25 are no longer viable. They're a waste of energy. They can

1 be bypassed. We talk about the money that it costs. It's
2 estimated -- I've heard a low estimate from the Corps that
3 it costs \$71 million to maintain those dams and I've heard
4 another reality estimate says 700 million to maintain them.
5 That's a lot of tax dollars. That's a lot of money that can
6 be put forth elsewhere. Where are they going to spend it?
7 To dig out Lewiston when it sinks, because it is.

8 The river systems are hot. They're too hot for
9 the fish survival. Flowing water is generally cooler. And
10 what Sam Mace referred to, the loss of the fishery this year
11 was huge. Yes, I've seen the headlines, "Huge Chinook
12 Fishery Returning." Eight-eight made it through Lower
13 Granite Dam. Today I looked it up while I was sitting back
14 there. Eighty-eight Chinook salmon, hundred-and-some
15 Steelhead. That's pretty low numbers.

16 The loss this year because of overheating and the
17 climate, the effect of the weather systems we have created -
18 - and a lot of that is from too much carbon in the air --
19 the loss of fisheries on the upper Columbia River were huge.
20 Estimated as high as 700,000 Chinook -- not Chinook, but
21 Sockeyes. And that's not taking into account the number of
22 mature sturgeon that were lost because they were eating
23 those Sockeyes which had become diseased because of the
24 overheated water and the fungus in those Sockeyes killed the
25 sturgeon, and we lost many huge sturgeon. And those fish

1 are upwards -- can live to be 100, 150 years old.

2 We need to take a look at, seriously, looking at
3 what we're doing. There was an article I read many years
4 ago and -- many years ago, and I can't remember the author,
5 but I remember the name and it was called "Too Many F'g
6 People F'g." And it dealt with the misuse of resources and
7 people destroying the planet. And that was -- that was a
8 hell of a lot of years ago when I was going to college and
9 that class.

10 We have too many -- we have a lot of people. We
11 need to meet the needs. And we need to meet those needs by
12 managing our energy resources responsibly. I like wind. I
13 like solar power. I like the fact that you can take a
14 turbine and place it in the middle of a river without
15 disrupting the flow and generate electricity, much like what
16 they have done in Scandinavian countries and they've also
17 experimented with some places here in the United States.
18 Cheap. It's economical.

19 I'm tired of seeing our tax dollars go for things
20 that don't work, which is the millions and millions and
21 millions of dollars that has been spent over the last --
22 since the dams were built on salmon and Steelhead recovery.
23 Much of that money could be better used to remove the
24 earthen portion of those Lower Snake River dams and to
25 return that money back into the area in the form of

1 renewable energy resources, recreation and such, which would
2 have a huge impact. Huge.

3 This hat I wear belongs to a chapter of Spokane
4 Falls Trout Unlimited, which I am a board member of and have
5 been for some time. Been a member for a long time. Our
6 chapter was formed in the '70s to combat those dams because
7 of the problems we knew they were going to cause and they
8 have continued to cause. We were successful in stopping the
9 Asotin Dam on the Snake River. Thank God it never got built
10 or we wouldn't have Hells Canyon today as we know it.

11 So as a power planning, your job is immense. It's
12 huge. And I appreciate you taking the input. But I ask
13 that you be fair and include all parts of the plan, not just
14 select or cherry pick the parts that you want in there or
15 that the agencies of BPA, et cetera, want in there, or the
16 Corps of Engineers. I served in the Corps for four years.
17 They're not my friends. And I appreciate you giving us the
18 opportunity to speak today. Thank you.

19 **MR. KARIER:** Thank you, Don. Anyone else that
20 would like to speak?

21 Okay. Come on up. Identify yourself.

22 **MR. BYLENGA:** Sure thing. Thank you.

23 Hi. My name is Jace Bylenga. The last name is
24 spelled B, as in boy, y-l-e-n-g-a. And I'm an organizing
25 representative for the Sierra Club Beyond Coal Campaign here

1 in Spokane, so as a staff member. And I'm not going to make
2 any technical comments, but I wanted to speak on behalf of
3 some of our members who couldn't be here today.

4 I've been working in the community gathering
5 petition signatures for Avista's -- Avista Utilities' 2015
6 IRP, and we've had a couple thousand people say that they
7 want Avista Utilities to move away from coal towards clean
8 energy. And I know that doesn't exactly line up with the
9 Seventh Power Plan, but it does show -- you know, these
10 people might not understand exactly how an IRP is written,
11 they don't necessarily understand what the Power Council and
12 their Seventh Plan is all about and all the complexities
13 that go along with it, but they do want -- they understand
14 that our climate is in danger and that their lives are
15 directly impacted if we continue to pollute the climate.

16 So if we continue to pollute the climate, they
17 understand that summers like we've just had, with incredible
18 drought, incredible forest fires, no snowpack in the
19 mountains, they know that that could be the new normal for
20 our region, and they want to see a change.

21 There's many passionate people that are worried
22 about this issue, not just because of the local impacts but
23 because of the global impacts. And so I just want to say
24 that, you know, if they were there -- if they could be here
25 today, if they could understand the process a little better

1 -- not that they necessarily can, but not, you know,
2 everybody can, but that they would be here supporting a
3 strong Seventh Power Plan and applauding your efforts to,
4 you know, reduce our energy use and encourage more renewable
5 energy. So, thank you.

6 **MR. KARIER:** Thank you. And, last call. Is there
7 any others --

8 **MS. DERLITH:** May I talk again? Could I speak
9 again? I didn't talk very long.

10 **MR. KARIER:** Okay. Since you've asked so nicely,
11 yes, you may.

12 **MS. DERLETH:** My name's Penny Derleth once again.
13 Still.

14 I've really learned a lot from the speakers, but
15 one of the things -- I am a low-income person. I am a
16 renter. And, yes, I agree, we need to make our houses more
17 efficient, our homes. It would be very nice if there was
18 some kind of an incentive for landlords to make the homes
19 that they rent out environmentally efficient, and I didn't
20 hear anybody say that.

21 So, thank you very much. And thank you so much
22 for coming to Spokane. Are you from Spokane?

23 **MR. KARIER:** I am.

24 **MS. DERLETH:** Okay. Good. But, yeah, thank you
25 for having the hearing.

1 **MR. KARIER:** Thanks. Okay. Anyone else?

2 Well, I want to thank all of you for your
3 comments. You were very concise, to the point. And what we
4 will do is -- as you can see, we were taking detailed notes,
5 verbatim notes that will be transcribed, and those will be
6 available for all of us to review and for the Council
7 members that are not here, the other five Council members
8 will get those written transcripts as well.

9 And as I mentioned, all of you are encouraged, if
10 you would like to submit written comments, you can do that.
11 I think the deadline was December 18th for those. And feel
12 free to call or contact the Council, or any of us, if you
13 have questions or you want to follow up with any of these
14 topics. This is really an important part of our plan
15 development, to get input from the public, and we're always
16 looking for better ideas and to try to look for something
17 that can be even better and better serve the region.

18 We will also take a look at Tom's presentation and
19 see if there's ways to convert some of the graphs. That was
20 telling. But it took a math teacher to appreciate.

21 But anyway, again, thank you. I don't know if
22 Phil or Bill have anything for the good of the order?

23 **VICE CHAIR BOOTH:** I would also echo the thanks
24 and the Power Act was drafted by Congress in 1980 and one of
25 the primary drivers in its creation was desire to provide

1 more transparency in the region as to how the power
2 resources are used and the future needs and give the people
3 in the region more of a voice in having a say in how it's
4 done. So it's very encouraging to me to see so many folks
5 coming in today and speaking out.

6 **CHAIR ROCKEFELLER:** And I can echo what Tom and
7 Bill have said. I'm Phil Rockefeller from Western
8 Washington. But I found it very helpful to be here tonight
9 and to hear your thoughts and comments, and I thought there
10 were a number of really interesting ideas being expressed.
11 So thank you very much for taking the trouble to come and
12 tell us your view of the world and what we should be doing
13 better. Appreciate it.

14 **MR. KARIER:** And with that, this meeting is
15 closed. Thank you very much.

16 **(Whereupon, the Public Hearing was concluded at**
17 **6:28 p.m.)**

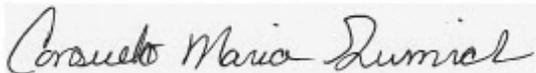
18
19
20
21
22
23
24
25

1 CERTIFICATE

2
3 I, Consuelo Grumich, do hereby certify that
4 I reported all proceedings adduced in the foregoing matter
5 and that the foregoing transcript pages constitutes a
6 full, true and accurate record of said proceedings to the
7 best of my ability.

8
9 I further certify that I am neither related
10 to counsel for any party to the proceedings nor have any
11 interest in the outcome of the proceedings.

12
13 IN WITNESS HEREOF, I have hereunto set my
14 hand this 25th day of November, 2015.

15
16 

17
18
19 _____
20 Consuelo Grumich
21
22
23
24
25

<u> </u> \$	1875 48:13	25 18:11	<u> </u> 6
\$1 37:11	18th 4:5	46:18	6 37:14
\$14 9:4 9:9	56:11	29 13:10	6:28 57:17
\$15 19:16	1960s 25:8	13:22	6:30 24:11
\$2,000 19:16	1970s 42:14	<u> </u> 3	<u> </u> 7
\$20 13:20	1975 42:13	3 11:1 43:9	7.1 21:16
\$3 8:18	1980 56:24	30 12:9 49:12	70 37:23
\$34 13:17	<u> </u> 2	300 45:25	700 6:25 51:4
13:22	20 13:12	30-some 30:6	700,000
\$50 8:12 8:15	17:17	30th 36:8	36:2 36:2
11:11 12:4	20,000 21:17	34 11:1	51:20
\$60 11:12	200 23:5	13:6	70s 53:6
\$65 21:20	45:24	13:10 13:21	75 48:13
\$71 51:3	2000 13:2	13:22	<u> </u> 8
\$88 9:8	2012 13:2	35 10:16	80 7:25 12:17
<u> </u> 1	2015 3:5 54:5	11:22	13:14
1,200 9:2	2016 4:17	12:2	800 19:25
1,400 13:24	2020 9:24	13:17 17:16	<u> </u> 9
1,500 7:20	2021 11:6	18:2	93 28:16
10 11:21	13:24	350.org 47:14	96 38:2
43:16 45:25	2022 12:7	<u> </u> 4	<u> </u> A
100 8:1 52:1	2025 9:24	4 38:4	able 16:25
101 18:12	10:10	4,500 6:15	21:25 28:16
18:22	11:6 11:20	11:7	29:6 31:7
111-D 8:7	2026 11:6	13:25 36:4	32:1 46:20
12 3:5	14:17	400 19:23	absolutely
13:14 13:21	2030 12:8	400,000	49:6
21:5 37:23	13:11 13:25	21:5 21:18	absorbing
140 21:19	33:9	45 13:4 36:4	24:22
21:19	2050 41:4	48 35:12	accepting 4:4
15 19:14	20th 4:4	<u> </u> 5	23:23
19:15	20-year	5 13:10 43:10	access 23:18
150 52:1	6:15 41:6	5:03 3:6	
1800 48:12		55 13:1 13:15	

account 51:21	31:24	10:14 12:10	45:10 56:22
achievable 29:3 29:16 32:1	adopted 7:19 12:7	35:3 35:4	anyway 22:9 29:1 36:2 42:12 56:21
acknowledge 28:2	advances 29:25	aluminum 39:3 39:4 39:8	Apollo 41:2
across 6:13 33:13	advisory 22:23	alumni 45:14	applauding 55:3
Act 3:23 56:24	advocate 44:1	am 26:15 44:1 45:13 45:21 50:12 53:4 55:15 55:15 55:23	appliance 20:19
Action 50:7	advocates 34:13	amazed 40:9	appreciate 23:15 49:20 53:12 53:17 56:20 57:13
acts 44:1	affected 35:20	amazingly 25:23	appreciative 47:14
actual 15:7	affects 18:18	American 35:6	approach 40:2
actually 26:4 38:18 39:2 47:4 49:2	afford 30:14	amount 9:14 11:13 12:24 33:13 44:7	Arbor 46:15
adapt 15:6	affordable 34:23 37:15	analysis 34:21 34:24 35:1 35:2 37:11 38:14	area 16:15 16:24 29:25 39:1 52:25
adaptations 16:18	agencies 53:15	Anne 16:4 16:5 16:6 17:5 38:15	areas 44:4
add 6:15 11:10 13:9	aggressive 39:10	announced 9:16 10:25 12:10	aren't 38:19 45:21
added 9:6 9:8	aging 38:8	annual 43:16	arguments 42:13
adding 13:5	ago 30:6 35:1 49:12 50:8 52:4 52:4 52:8	anybody 50:13 55:20	arm 20:7
addition 8:7 9:23 12:12	agricultural 24:15	anybody's 22:8	article 52:3
additional 7:22 10:13 14:20	ahead 49:17	anyone 45:9 47:4 53:19 56:1	ASHRAE 42:13
address 23:5 23:6	air 16:16 51:18	anything 18:2 26:10 33:14	Asian 19:25
adds 13:17	Alberta 17:20 17:24		Asotin 53:9
adequacy 14:3	Alliance 31:1		assessment 15:7
administrativ e 4:14	alluded 41:20		associated 14:25 43:14
	already 4:11		Association 17:12

associations 34:12	backdrop 37:17	begin 4:22 11:11 15:10 37:22 41:7	56:17 57:13 beyond 11:9 41:6 41:8 41:23 41:25 53:25
assumes 20:21	backed 39:13	beginning 21:11	bill 3:14 20:5 22:14 38:16 38:16 38:17 40:20 46:16 46:20 56:22 57:7
assuming 13:7	background 17:14	behalf 54:2	behavioral 29:18
Athol 22:3	backyard 24:24	behind 18:5 42:21	beings 48:5 48:23
atmosphere 22:9 24:22	bad 21:22 36:18 46:24 48:15	believe 18:1 40:6 41:9 43:10	billion 9:5 9:8 9:9 13:18 13:20 13:22 48:13
August 12:7	balancing 22:17	believes 26:19	bills 18:14 25:23
author 52:4	Barbara 32:7 32:7 32:8 32:23	belong 16:7	birds 25:5 25:5
automate 29:8 31:22	barely 10:19	belongs 53:3	birthday 46:18
available 13:13 20:2 46:11 50:6 56:6	bars 12:23	belt 43:8 43:9	bit 5:9 12:18 26:10 28:24 33:4 38:22 43:20 44:14 45:18
average 6:13 6:15 6:25 7:20 8:14 8:22 9:15 13:2 13:24 37:10	base 40:17 48:6 48:18	Ben 15:18	block 16:16
Avista 25:21 46:5 54:5 54:7	based 20:12 40:23	benefit 25:2 35:19 37:14 38:6	blow 7:9
Avista's 54:5	basement 20:23	benefits 34:21 35:17 37:19	blue 11:7 50:7
avoid 14:24	basic 6:7 44:1 44:8	best 16:23 35:12	BMAC 50:7
avoided 9:1 21:22	basically 8:15 8:21 11:13 14:7	better 3:19 15:3 21:2 26:22 33:15 36:10 44:19 44:24 49:12 52:23 54:25 56:16 56:17	board 17:10 17:10 17:11 43:2 53:4
aware 48:3 48:23	basis 46:10		Boardman 9:17 13:3
away 17:2 18:16 18:17 29:19 32:17 54:7	batteries 45:20		Boise 17:12
<hr/>	Bay 19:24		
B	beautiful 30:7		
	become 51:23		
	beer 20:24		

bold 16:13 16:22	buildings 29:20 43:25	14:22 18:19 18:19 18:21 20:1 20:4 27:23 28:1 39:25 40:2 40:3 44:21 44:22	cause 53:7 53:8
bolder 32:18	built 25:9 37:21 52:22 53:9		celebrate 23:17
bone 50:16			cell 15:25
Bonneville 21:21	bump 10:11		Center 36:6 36:20
books 19:21	bunch 12:20	capture 22:10	Central 19:23 21:7 22:5 44:3 44:5
Boorman 27:15 27:16 27:16	burn 24:21 41:10 49:8	carbon 8:8 8:10 8:11 8:11 10:3 10:13 10:21 10:22 10:23 11:10 11:12 11:16 11:20 12:3 12:16 24:3 24:20 24:22 41:8 41:13 41:25 46:21 46:22 51:18	
Booth 3:14 22:14 56:23	burned 46:24		Centralia 9:16 13:3
borrow 18:8	business 17:17 20:16 28:24		certain 20:13 41:3
bottom 18:3 19:13	businesses 34:12 35:20 35:21		certainly 33:23 34:15 36:17 38:5 42:6 48:1
bought 17:21 45:18 45:19	buys 20:20		cetera 53:15
boy 53:24	Bylenga 53:22 53:23		CHAIR 56:23 57:6
BPA 30:24 31:5 31:5 42:18 53:15	bypassed 51:1		
	<hr/> C <hr/>		
Bridger 12:1	California 17:20	care 27:3	challenge 23:25 25:1
brief 5:18		careful 23:15	
bring 11:16 18:19 27:25 47:6	Calvert 47:7 47:11 47:12 47:23 47:25 48:3	carefully 4:15 23:1 32:6	challenges 29:21
broader 33:20		carpet 40:15	chance 46:16 47:6
brought 30:23 43:1 43:20	Campaign 53:25	carries 11:7	change 13:17 24:4 32:16 35:3 41:15 48:12 48:16 49:4 54:20
BTU 8:18 8:19	Canada 17:20	case 8:10 8:11 8:17 8:23 8:24 9:7 47:20	
buckle 43:8 43:9	Canyon 53:10	cases 5:4 8:3 13:11	
buds 24:13 24:14	capacity 6:8 6:20 6:20 6:24 7:1 7:6 7:8	cash 29:14	changed 42:7
build 43:23 43:24		caulk 45:2	changes 18:22

24:6 24:15	16:9	13:19 24:20	46:6 46:7
changing 48:9	34:13 34:18	26:21 32:22	55:22 57:5
48:20	41:3 54:7	33:10 33:12	comment 4:4
chapter	clear 15:9	33:13 40:16	4:5 4:9
53:3 53:6	18:21	46:6 49:7	23:1
Cheap 52:18	climate	50:12 53:25	27:21
cheapest 45:3	24:4	54:7	29:1 45:1
check 15:7	32:16	coal-based	comments 3:16
47:8	35:3	34:1	4:12 4:13
checks 30:19	41:14 47:13	coal-fired	4:18 5:10
Cheney 27:17	49:4	24:18 40:12	6:6 22:12
cherry 53:14	51:17 54:14	coalition	27:17 49:10
Chinook	54:15 54:16	34:11 34:11	54:2 56:3
36:9	close 9:18	Coalition's	56:10 57:9
51:11 51:14	22:4 30:9	37:8	commercial
51:20 51:20	closed	Coast 35:17	34:11
Christine	42:21 57:15	cold 7:10	commercially
22:24	closely 42:9	Collaborative	13:13
23:4 26:1	closing 32:22	28:7	commission
circumstances	Club 23:10	college 49:25	49:9
33:18	26:15	52:8	committee
citizen	33:2	Colstrip	20:8 22:23
16:8 41:1	47:13 53:25	11:25	communication
Citizens	clue 42:11	Columbia 38:1	23:24
40:23 47:13	CO2 10:12	51:19	communities
City 27:17	40:6 49:4	Columbia/	35:18
civil 38:18	50:13	Snake 34:14	community
Clark 22:24	coal 9:10	35:8 37:25	54:4
23:4	9:12 9:15	combat 53:6	companies
C-l-a-r-k	10:1 10:5	combustion	41:16 41:17
23:4	10:7 10:8	41:8 41:13	41:18
CLARK 22:25	10:24	comes 30:11	compensation
23:4 23:8	11:5	34:5	50:20
23:10 23:14	11:14 11:19	37:14 38:5	compete 14:20
class 52:9	11:22 11:23	coming	complete
clean 6:3	12:10 12:11	16:19 22:13	41:12
	12:15	27:4 35:16	complexities
	13:3 13:6		54:12
	13:7		

compressor	44:2 50:2	27:22	costs 9:1
21:5	conservationist 49:25	conversations	34:21
21:15 21:25	conservative	20:6	37:5
22:3 22:5	37:11	convert 56:19	37:19
concept 41:1	consider 19:1	cooler 51:9	38:7
concern 23:14	32:1	cooling	39:12 46:17
25:7	consideration	43:9 43:13	51:1 51:3
34:18 38:10	41:21	Co-op 17:10	council 3:1
44:20	considered	cooperative	3:12 3:22
concerned	4:15	22:19	3:23 4:1
49:3	consistent	co-ops	4:6 4:16
concise 5:7	14:10	28:22 31:15	4:19 5:11
15:12 56:3	consultant	coordinated	15:15 22:14
concluded	28:14	22:20	27:24 37:18
57:16	consulting	coordination	38:13 42:15
conclusion	28:21	22:2	43:18
10:12	consumer	Coos 19:24	44:3
conditions	17:11 25:7	core 13:23	44:19 44:25
36:10	consumption	cornerstone	46:3 50:7
confident	12:15 44:22	35:9	50:23 54:11
20:15	46:1	Corporation	56:6 56:7
confused 33:4	contact 56:12	17:19	56:12
Congress	content 24:3	Corps 50:20	Council's
56:24	contingency	51:2	3:22 4:14
connected	41:21	53:16 53:16	37:8 43:19
38:2 47:12	continue	correct 26:3	count 44:6
conservation	33:25 44:21	cost 6:10	44:6 50:15
3:1 3:12	54:15 54:16	8:11 9:4	counted 12:21
3:22 3:24	continued	9:8 13:21	countries
7:22 8:24	53:8	21:22	52:16
8:25 9:2	contractual	25:2 25:3	country
15:15 20:10	14:25	37:10 41:18	17:1
20:11 20:13	controlling	cost-	28:18 28:23
21:3	29:20	benefit	29:11 30:13
23:14 23:16	conversation	38:20	31:11 31:16
25:16 27:19		costing 38:9	33:14 33:15
29:16			38:25
30:6 34:13			couple
			10:22 18:25
			24:13 24:25

54:6	31:19	debt 18:13	deny 41:14
course	cycle 18:10	decade 29:5	depend 29:24
19:24 26:25	18:22 36:12	decades	depending
34:19	<hr/>	6:11 7:16	14:17
36:3 36:22	<hr/> D <hr/>	December	Derleth
covered 6:6	Dam 38:19	4:5 56:11	26:2 26:8
covers 8:1	51:13 53:9	decided 45:8	55:12
create 24:21	damage 50:12	decision 4:16	D-e-r-l-e-t-h
created 51:17	damaged 24:14	decline 35:20	26:9
creation 42:9	dams 34:22	37:23	DERLETH
42:14 56:25	35:9	declining	26:4 26:8
credence	35:10 36:21	9:19	55:12 55:24
17:15	37:3 37:5	decrease	DERLITH 55:8
crediting	37:10 37:19	25:10	description
29:4	38:7	decreased	3:17
credits 8:5	38:11 50:21	25:13	designated
8:6	50:24	decreasing	45:6 47:10
creek 50:16	51:3	25:7	desire 4:13
crises 41:22	52:22 52:24	deep 24:14	56:25
crisis 24:2	53:6	Deer 24:24	desk 6:3
24:15	danger 54:14	definite	destroying
crowing 39:5	dark 7:18	27:24	52:7
cubic 19:24	26:6 43:24	definitely	destruction
cumulative	date 4:6	37:15	41:19
36:23	dawn 24:11	degree 24:10	detailed 56:4
current 16:12	day 19:24	degrees 24:12	develop
currently	46:15	50:1	3:24 10:1
19:21 20:2	days 42:12	delighted	14:18 14:19
currents 24:6	45:24	47:15	18:9 21:20
curve 48:22	deadline	demand 6:10	developed
customer	56:11	6:22 6:25	6:17 14:5
31:20 37:10	deal 30:21	14:1 14:4	25:18 27:22
37:15	41:7	14:13 14:18	46:12
customers	dealing 20:11	14:19 18:22	developing
30:7 30:9	37:18	19:20	7:22
	dealt 52:6	demands 19:21	development
	death 43:23		6:11 6:23

8:7 14:24 56:15 develops 7:15 8:1 devise 16:17 dewatered 50:17 dices 37:13 died 35:25 different 4:7 12:18 31:9 31:11 37:13 39:19 46:23 difficult 19:19 39:20 dig 51:7 dioxide 24:3 directly 54:15 director 17:17 17:21 34:10 directs 3:23 dirtying 17:2 discovered 26:10 discussing 42:21 diseased 51:23 dismal 36:7 dispatch 10:6 10:14 10:18 10:20 disrupting	52:15 district 40:14 document 15:12 17:13 documented 19:4 dollar 46:16 46:17 dollars 8:19 17:22 51:5 52:19 52:21 dominant 6:10 6:23 7:14 Don 49:23 53:19 done 4:11 9:3 10:13 11:21 16:15 17:1 28:17 29:9 30:18 31:5 31:20 31:24 39:24 50:23 50:24 52:16 57:4 door 32:5 34:5 42:23 44:6 doors 42:21 double 48:14 doubled 48:13 doubts 41:14 50:14	draft 3:2 4:3 4:5 4:9 34:20 drafted 56:24 dramatic 11:20 draw 10:12 drill 18:8 drive 44:3 50:14 drivers 18:5 56:25 drop 11:5 11:12 13:10 13:11 49:8 dropped 8:18 drops 7:19 13:6 drought 54:18 drove 38:25 dry 50:16 DSIs 42:18 dunes 24:24 during 6:9 14:13 dust 33:13 dwindle 18:16 18:17 <hr/> E <hr/> early 4:17 42:16 earth 43:6 43:7 earthen 52:24	East 44:5 Eastern 21:6 eating 51:22 echo 27:17 34:15 56:23 57:6 Eckman 5:21 5:22 33:7 ecological 25:4 ecology 27:3 economical 10:7 12:22 21:11 52:18 economics 13:16 18:12 18:23 economies 31:23 economist 37:12 economy 39:1 Ed 42:3 42:3 42:4 45:5 edge 27:11 effect 7:18 7:21 9:3 12:7 12:14 36:23 51:17 effective 6:11 efficiencies 39:7 efficiency
---	--	--	---

6:9 6:12	electrical	encouragement	40:16
6:21 7:13	25:23	25:15	41:3 42:6
7:14 7:15	electricity	encouraging	42:20 42:21
8:1 8:9	23:21 23:24	57:4	42:22 42:24
8:16 8:20	25:10 25:18	energy 6:8	43:15
8:22 9:6	31:15 52:15	6:9 6:12	44:1 44:8
9:20 9:21	electronic	6:12 6:21	44:10
11:8	23:18 23:20	6:22 7:13	46:1
12:12	eliminate	7:13 7:14	50:25 52:12
13:5	39:7	7:25 8:9	53:1 54:8
13:24	eliminating	8:20 8:21	55:4 55:5
15:4	40:18	9:6 9:19	engaged 4:1
16:21 20:19	elimination	9:21 11:8	engineer 21:7
28:7	41:13	12:12	38:18
28:14 28:17	Elizabeth	13:5	engineer's
29:2 29:6	15:19	13:24	42:24
29:8	else 45:9	14:2	Engineers
29:12 29:19	53:19 56:1	14:10 14:12	50:20 53:16
30:15 30:17	elsewhere	14:13	ensure 4:24
31:1	51:6	15:4	environment
31:25 32:13	emission 11:5	16:21	25:6 50:22
34:18	emissions 8:8	17:1	environmental
39:5 47:16	10:21 11:13	22:18 22:19	ly 55:19
efficient 5:7	12:17 12:22	23:16 24:21	EPA 12:5
29:21 47:18	12:24 13:1	25:1 25:2	12:21
55:17 55:19	emphasis	25:3 25:8	EPA's 8:7
effort 4:2	16:10 32:13	25:9	equity 14:25
14:8 22:20	empower 31:21	25:12 25:13	especially
efforts 55:3	empty 43:13	25:15 25:19	38:7 41:16
Eight-eight	50:19	27:23	estimate 51:2
51:12	encourage 5:7	28:1	51:4
Eighty-	25:24 33:25	28:14 28:15	estimated
eight 51:14	41:5 44:2	28:17	51:2 51:20
EISs 39:24	44:19 55:4	29:2 29:6	et 53:15
either	encouraged	29:8	evening 3:8
28:25 37:15	34:17	29:12	4:13 5:18
39:14	37:3 56:9	30:6	16:5 17:6
electric 3:24		30:14 30:17	22:24 22:25
17:10 19:10		30:25	
20:8 21:24		34:1	
		34:13 34:18	
		37:7	

28:5 32:7 38:16 40:22 eventually 38:11 everybody 26:19 40:7 55:2 everyone 3:8 3:10 5:7 36:3 everything 48:21 49:11 49:13 49:16 49:16 everywhere 40:10 evolved 6:1 exactly 38:20 54:8 54:10 example 12:1 12:23 31:15 exhaust 21:9 22:9 exhausts 45:6 existent 8:4 existing 6:17 8:4 8:10 8:16 9:7 9:12 10:5 10:11 14:16 22:4 40:1 exists 10:10 Expand 14:1 expect 4:17 24:24 experience	18:24 experiencing 24:4 experimented 52:17 explanations 24:6 exploration 18:15 19:18 explore 18:9 Export 19:24 exports 19:25 expressed 57:10 external 14:21 extra 14:2 <hr/> F <hr/> face 48:25 Facebook 23:23 faced 43:22 facing 49:1 fact 23:23 48:4 48:5 52:13 fair 53:13 fairly 7:21 11:10 17:23 19:4 32:12 falls 40:15 53:4 familiar 17:23 family 25:19	fan 50:12 fantastic 35:13 farms 23:22 23:22 fast 14:17 48:17 48:22 faster 48:9 48:20 father 45:14 favorable 36:13 federal 7:18 8:6 feel 15:22 20:15 34:19 56:11 feet 19:24 F'g 52:5 52:6 figure 29:22 44:6 filled 20:24 final 4:16 finally 13:12 15:2 15:6 financing 29:11 29:15 finding 6:7 9:11 findings 5:25 6:2 12:16 finish 5:25 finite 40:1 fire 25:12 fireplace	25:12 fires 54:18 first 3:10 6:3 16:4 19:11 25:18 28:10 39:4 39:22 40:3 42:23 50:17 fish 34:19 35:15 35:19 35:23 36:6 36:19 36:24 51:9 51:25 fisheries 50:3 51:19 fisherman 49:24 fishery 35:6 51:10 51:12 fishing 34:11 34:12 35:18 five 3:25 24:10 24:11 33:22 35:1 50:1 56:7 five-year 4:1 fixing 50:9 flat 7:15 flood 10:16 38:9 floor 6:2 flow 52:15
--	--	--	---

's 46:18	guys 22:16	33:11 33:17	Hi 17:7
grandfather	<hr/>	40:14	32:8
45:14	<hr/> H <hr/>	healthcare	32:25
Granite 38:18	habitat 35:12	33:22	42:3 53:23
51:13	35:13	hear 20:8	high 18:4
graph 48:12	handle 28:10	20:9	19:13 19:13
48:14	Hanford 39:16	55:20 57:9	21:21 35:11
graphs	happen 30:2	heard 51:2	51:20
47:19 47:22	47:18	51:3	higher 10:6
47:23	48:6 48:20	hearing 3:3	24:12
48:9 56:19	happened	3:21 4:10	highest 6:22
great 20:20	18:11 42:17	5:11	highly 31:5
31:6 41:9	48:7 48:19	15:21 55:25	high-power
green 7:17	happens 10:16	57:16	22:6
grew 35:17	11:17 20:3	hearings 4:7	high-
35:18	happy 23:11	heat 21:8	voltage
ground 49:7	49:10	21:13 21:13	22:6
groundwork	harder 38:6	22:9	Hirotsu 15:17
41:12	38:6	23:21 23:25	historical
groups 34:12	hardhat 42:24	24:23 36:21	19:6
growing 33:18	Harrison's	heating 16:17	history 19:4
growth 8:2	15:17	24:5	hold 4:6
8:22 11:8	hat 53:3	held 3:4 3:21	32:16 39:2
12:13 14:18	hate 21:7	hell 52:8	home 24:9
43:15 43:16	26:22	Hello 28:6	25:16 25:18
GTN 21:15	haul 33:15	32:24 40:21	30:10 32:19
guarantee	haven't	Hells 53:10	44:9
20:22	4:11	help 20:25	homes 25:17
guaranteed	30:20 45:19	28:22 30:21	25:19 55:17
43:4 43:6	having	32:20 46:2	55:18
guess 29:1	18:24 20:18	helped 39:6	honestly 41:8
40:25	29:14 43:19	helpful 57:8	horizon 41:6
41:5 47:8	43:20 49:22	Henry 19:1	horsepower
gusto 16:22	55:25 57:3	19:2 19:2	21:5 21:17
guy 35:25	headlines	here's 10:22	hot 36:24
39:17 42:23	51:11	he's 20:7	46:10
	health	47:21 49:3	51:8 51:8

hotter 36:22	28:1	42:7 45:8	55:18
house 25:8	32:12 39:10	46:3	include 11:23
25:8	Idaho 3:14	46:14 47:12	11:25 53:13
25:11 45:17	17:11	47:14 47:15	included
45:23	21:6	47:21	5:3 34:22
houses 25:9	35:14	48:3	includes
50:9 55:16	36:4 37:21	48:22	12:19
housing 25:20	idea 16:24	49:4	including
Hub 19:1 19:2	26:22 46:25	49:10 49:23	5:11
19:2	ideally 41:3	52:19 53:24	income 44:4
huge 29:24	ideas 56:16	54:1 57:7	increase
30:10 33:21	57:10	immediately	14:15 24:10
50:13 51:11	identified	11:13 11:18	increased 9:4
51:11 51:19	7:24 11:3	immense 53:11	10:16 20:19
51:25	Identify	impact 9:11	24:3
53:2 53:2	53:21	53:2	increases
53:12	I'll 4:21 5:8	impacted	10:4 20:4
human 23:19	15:9 20:8	54:15	increasing
48:3 48:5	21:18 45:11	impacts	24:23
48:23	I'm 3:11 3:12	25:4	increasingly
humans 23:17	3:17 5:5	36:20 54:22	8:13
humongously	5:20 5:22	54:23	incredible
33:12	6:5 15:1	impeding	54:17 54:18
hundred	16:8 16:8	35:10	incremental
30:3 41:2	17:9	important	13:20
41:9	17:10 17:23	16:21 32:17	individual
hundred-and-	20:18	34:25	22:21 25:17
some 51:14	21:7	35:1	industry
hundred-	21:12 22:22	35:16 38:12	44:21
page 15:12	23:10 23:11	56:14	inefficient
hunter 49:24	26:16 26:17	impose 10:3	10:9 13:20
hunting 50:17	26:17 26:19	12:2	inexpensive
50:19	26:23	imposed 8:11	10:17
hysteria 40:8	27:5 28:7	imposing 12:3	information
	28:14	13:17	20:15 23:12
	33:1 33:1	improve 32:15	23:18 23:20
	33:3	in/year 29:23	23:25
	33:10 33:23	incentive	
	34:9		
	34:16 38:17		
<hr/>			
I			
<hr/>			
I'd 3:10			
15:13 22:15			

lags 18:5	less 8:18 9:2	listening	43:22 50:25
lake 36:5	9:20	32:5	long-term 9:1
36:5	11:17	little 5:8	15:5
Lamont 50:14	12:8	5:9 6:16	loss 46:21
land 17:3	32:15 36:12	7:17	51:10 51:16
50:19 50:20	let's 4:20	10:17 11:17	51:19
landlords	5:10 16:3	11:17 12:18	lost 39:3
55:18	20:10 22:24	12:23 13:16	39:4
large 19:21	23:19	14:16 17:14	50:20 51:22
largely 6:17	34:5 40:7	26:10 28:24	51:25
largest 17:20	41:12 47:3	33:4	lot 5:4 9:2
last 4:24	levies 38:11	38:21 45:18	16:13 19:18
7:19	Lewiston	47:9	20:12 20:22
18:10 18:11	37:21 38:10	48:24 50:10	22:1
19:15	51:7	54:25	22:15 23:20
21:4 27:8	lexicon 42:6	livable 50:10	23:21
29:5	lifetime 48:5	live 49:14	29:3 29:9
33:22 37:23	49:23 49:24	52:1	29:11 29:15
52:21 53:23	49:24 49:24	lived 50:8	29:16
55:6	lights	lives 54:14	31:5
late 16:1	40:10 40:10	LNG 19:24	31:20 31:25
later 24:19	43:25	load 7:13	32:15 34:15
latest 4:1	likely	7:19 7:21	34:17 35:19
Laughter 43:5	36:11 36:18	8:1 8:9	35:19 35:20
48:2	limit 5:5	8:16 9:20	36:14 39:24
lay 41:12	12:5	9:20 11:8	46:1
learned	limitations	12:12 14:18	46:11 50:23
18:2 55:14	20:4	loads 7:15	51:5 51:5
learning	limited 18:21	Lobby 47:13	51:18
30:18	line 9:22	local 40:14	52:8
leave 4:12	11:4 11:7	54:22	52:10 55:14
Lee 40:21	12:5	Lock 38:18	lots 10:22
40:22	43:16 54:8	Logan 44:5	18:4 19:19
L-e-e 40:22	lines 7:5	long 5:8 14:6	lot's 50:4
LEE 40:22	list 4:21	33:12 33:15	love 31:19
legal 3:18	34:4 34:4	39:15	44:16
	45:6 47:7	53:5 55:9	loved 44:17
	listen 3:15	longer	low 8:17
			19:13 25:23
			50:18

51:2 51:15	market 9:1	megawatt	metric 11:1
low-cost	10:17 14:21	21:20	11:21
10:17	marketplace	megawatts	12:9 13:2
lower 8:24	18:6	6:15 6:25	13:5 13:7
34:22	markets 14:2	7:20 9:2	13:10 13:11
35:9	matches 15:8	11:8	13:14
35:12	math 21:18	13:24 21:16	mic 5:22
38:4	47:21 56:20	21:19	mid-basin
38:18	matter 43:19	member 3:11	42:18
44:4	mature 51:22	3:12 3:13	middle 19:9
51:12 52:24	may 4:23	3:14	19:9 52:14
low-income	45:24	17:10 23:10	mid-term 15:6
55:15	55:8 55:11	23:11 26:15	miles 35:13
l-s-o-n 33:1	maybe 4:17	26:17	military
lunch 20:6	15:15 15:21	53:4 53:5	41:20
<hr/>	22:10	54:1	million
M	39:2	members 22:15	8:18 8:19
Mace 34:7	41:24 45:7	23:12	11:1 11:1
34:8 34:9	mean 29:11	44:3 54:3	11:21
51:10	38:24	56:7 56:7	12:9 13:1
Magnuson	39:3 45:23	memo 36:20	13:4 13:7
42:17	means 44:14	mention 15:16	13:10 13:10
main 34:18	Meanwhile	15:24	13:14 19:16
maintain 51:3	45:25	mentioned	19:23 19:25
51:4	medicine	19:1	21:19 35:24
maintaining	33:24	26:25 56:9	36:2 51:3
38:7	meet 12:12	mentioning	51:4
major 22:2	14:3	49:3	millions
22:2	14:14 41:22	mercury 40:11	17:22 52:20
Malin 19:5	52:11 52:11	40:13	52:20 52:21
management	meeting	Merrill 42:13	minded 49:18
50:2	6:23 7:7	metals 43:6	mine 15:25
manager 27:25	8:22 14:7	43:7	minimize
managing	39:4	methanol	33:14
52:12	42:20 57:14	19:23	minimum 16:23
March 4:18	meetings	methodology	misuse 52:6
margin 47:10	22:13	37:9	MMBTU 19:16
		methods 29:7	19:17

modern 31:22		44:5	4:8 10:24
modernizing	<hr/> N <hr/>	Nelson	11:23 11:25
30:17	name's	32:24 32:25	12:6 19:3
money 18:8	47:12 49:22	32:25 33:9	19:5
20:12 20:12	55:12	nervous	19:22 22:19
21:1	natal 36:22	28:8	26:24 28:15
26:16 35:16	national 24:5	28:12 28:13	28:24 29:13
38:9	46:14 46:19	net 7:12 8:16	29:18
38:23 39:21	nationally	Nevada 9:17	30:2
39:21	31:4	12:15	30:13 30:25
51:1 51:5	nationwide	news 36:14	31:13 31:25
52:23 52:25	41:2	nice 15:11	34:10
Montana	natural	26:11	37:7
6:19 12:20	6:16 7:2	27:4	42:14 43:21
month 37:12	9:11 9:12	28:12 46:15	Northwest's
months	9:14 9:18	55:17	20:2
25:22 42:20	9:21 9:23	nicely 55:10	Northwest-
Morkill	9:25 10:4	night 27:8	TransCanada
32:7 32:8	10:5 10:6	nobody 18:3	17:19
32:8	10:11 10:14	26:5 26:25	notes 56:4
morning	10:18 11:14	noise 32:4	56:5
24:9 24:11	14:15 14:16	non-carbon-	nothing 26:14
Morrison	14:16 17:16	generated	noting 36:21
49:22 49:23	17:24	15:5	NOVEMBER 3:5
mostly 3:17	18:1 20:7	None 27:19	nuclear 39:15
Mountain 50:7	nature 48:3	nonprofits	nudged 36:1
mountains	N-e 32:25	31:17	number's 12:8
54:19	necessarily	nor 50:12	nwcouncil.org
move 41:2	46:7	normal	5:13 5:14
41:8	54:11 55:1	36:16	<hr/> O <hr/>
45:12 54:7	necessary	48:5 54:19	obligated
multi-	22:18	North 9:17	41:7
family	NEEA 30:22	9:17 21:6	ocean 36:10
25:20	30:24	Northeast	oceans 24:4
municipal	neighborhood	35:14	24:7
28:23	12:4	northwest 3:1	October 4:3
myself 33:12	20:22	3:11 3:23	odd 47:9
	44:4 45:23		
	neighborhoods		

office 28:15	opportunity	ounce 49:7	29:14
offline 11:7	16:9 17:4	outcome 9:5	particular
offset 44:23	22:7 23:1	outdoor 24:8	7:3 14:4
offsets 10:12	32:11	output 14:10	34:20 35:22
oh 23:2 26:18	34:8	overdevelop	parties 31:16
31:2 49:4	44:25 45:22	18:9	Pasadena
oil 24:20	53:18	overhead	25:21
49:8 50:12	option 12:22	28:11	Pasco 38:3
okay 5:24 6:5	options 12:13	overheated	38:4
12:16	oral 5:11	51:24	Passage
26:1 26:8	order 4:21	overheating	36:6 36:19
38:15 44:18	56:22	51:16	passing 33:12
46:25	Oregon 6:18	overview 5:19	passionate
47:9	9:17	5:25	54:21
47:24 53:21	12:15	Owings 42:13	past 24:5
55:10 55:24	19:9	Owned 17:11	24:12 36:11
56:1	19:23	_____	48:7
old 20:21	21:7 22:5	P	48:10 48:19
25:8	23:22 35:14	_____	48:21
33:20 33:20	35:17	p.m 3:6 57:17	Pat 28:5 28:5
50:9 52:1	organization	Pacific 17:18	28:6
omission	4:23 16:8	19:3 19:5	42:10 44:2
34:20	23:11	43:21	patterns 48:7
omissions	organizations	panel 41:6	pay 18:14
34:19	30:12 30:15	panels	peak 6:8 6:20
ones 15:8	31:13 31:14	32:19 45:19	6:23 7:1
ongoing 46:10	34:13	45:20	14:2
open 6:2 45:9	organizing	Parents	14:10 14:13
opening 6:6	53:24	42:3 42:4	pellet-
operates	o-r-k-i-l-l	P-a-r-e-n-t-s	fired 25:11
39:20	32:9	42:5	pending 41:1
operating	Osborne 15:19	PARENTS	Penny 26:2
30:4	others 5:16	42:4 43:4	26:8
operations	35:7	43:6	27:12 55:12
17:17	36:13 45:15	Park 24:25	people 5:4
opportunities	55:7	25:22	15:20 19:18
7:23	ought 18:25	participate	20:14 20:22
	21:10 22:10		

21:12 22:15	34:15 46:13	7:24	39:3 39:5
27:9	petition 54:5	10:21	39:8
27:10 29:13	phase 12:7	18:1	40:12 43:13
29:15 29:20	Phil 3:13	18:25 27:22	players 19:20
32:10 32:19	56:22 57:7	28:10 32:12	42:19
32:20 32:20	phones 15:25	34:17 34:20	please 4:11
34:6	pick 53:14	34:23 34:25	4:11 4:22
35:21	picture	38:14 43:21	33:25 45:1
39:5	21:2	47:15 47:16	plus 12:12
43:22	28:19 33:20	53:13	21:17
45:6 45:8	33:21	54:9	PNGC 31:15
45:21 46:15	pieces 37:2	54:12	point 16:1
48:13	pigtail 40:9	55:3 56:14	48:18 56:3
52:6 52:7	pioneers	planet 24:3	points 5:8
52:10	29:18	24:23 27:11	policies 8:4
54:6	pipeline	52:7	policy 8:3
54:10 54:21	17:16 17:19	planned 43:10	8:10 8:16
57:2	17:23 18:18	planning	9:7 12:13
per 12:24	18:19 18:21	4:2 23:1	40:23
12:24 13:11	20:3 21:4	23:15 24:17	pollutant
19:16 37:14	21:5 21:18	50:22 53:11	40:6
percent	pipelines	plans 29:4	pollute 54:15
7:25 8:1	17:21	41:21	54:16
10:16	22:3	plant 10:9	population
12:2	39:18 39:25	11:5	48:12
12:17 13:15	40:1 44:23	12:11 19:23	portfolio
13:17 37:14	pipes 21:9	planting	6:13 6:18
37:23	placed 4:14	46:23	8:5 10:15
38:2 38:4	places 19:5	plants 9:10	13:5 13:9
41:2 43:16	44:7 52:17	9:12 9:13	14:11
percentile	plan 3:2 3:16	9:15 9:22	portion 34:20
36:8	3:23 3:24	9:24 10:9	52:24
perhaps 16:25	3:25 4:3	10:24	Portland
period 6:9	4:5 4:10	11:3	15:18
6:15 7:20	4:15 4:17	11:19 11:22	position
8:12 8:14	5:14 5:17	11:24 12:10	45:17
person 16:4	5:19 5:25	12:19	possible 5:12
55:15	6:7 7:19	13:4 13:6	
personally		13:7	
22:20 24:8		13:19 24:18	
		26:21 33:10	

24:18 25:14	54:9	8:15 8:17	7:10 8:13
42:9	54:11	8:25 9:7	problems 8:13
49:11 49:13	55:3	10:3	53:7
possibly	56:24 57:1	10:20 11:10	process 4:2
39:15 49:13	powerlines	18:11 18:17	19:19 19:20
post 5:15	22:2 22:6	18:18 18:20	22:19
post-2025	PowerPoint	18:22	29:8 54:25
14:17	26:12	20:3 44:21	produce
posted 5:12	practicing	prices 8:18	8:20
potentially	26:16	10:6	21:16 23:25
14:21	Precautionary	11:16	39:12 44:14
potholes	41:15	18:4 18:4	44:15 45:3
50:15	predecessors	20:9	produced
Potlatch	43:19	39:17 39:18	9:2 39:22
42:19	predict 19:17	pricing 17:23	producers
power 3:1 3:2	27:19	18:1 19:6	18:7 18:8
3:11 3:16	predicts 18:3	19:12	producing
3:22 3:23	present 9:8	20:7 20:8	18:14 38:24
3:23 3:24	42:9	primarily	production
4:3 4:5 4:9	presentation	45:14	17:24 18:15
4:15 4:16	5:18	primary 37:20	23:24 38:20
5:14 5:19	16:12 26:13	40:4 56:25	39:10
5:25 6:7	27:14	primitive	professional
13:1	33:5 35:5	41:11	33:11
15:14	56:18	principle	program 21:3
16:9	presenting	9:11 9:25	programs
17:25 22:11	47:15	14:8 41:15	29:11 29:14
25:17 26:25	presently	privates	30:17 31:19
27:10 28:10	14:10	42:18	44:9 44:10
34:23 34:25	pretty 11:2	privileged	project 21:14
37:5	13:15 18:20	42:16	25:21 41:2
37:10 37:15	21:20	probability	projecting
38:13 38:14	22:3 30:4	8:13	43:15
38:20 38:24	30:22 34:23	probably 3:20	projects
39:10 39:13	44:18 51:15	27:19 32:14	46:23
39:14 39:14	previous	36:15	promote 16:13
42:14 43:21	32:14	problem 20:11	16:14
45:19	price 8:11	24:20	pronounce
46:3 46:5		problematic	
52:13 53:11			

26:2	question 41:7	23:15	52:22
proper 27:5	questions	25:3	recreation
properly 4:25	26:14 56:13	26:18 26:18	38:22 53:1
provide 7:6	Quincy 23:22	27:4	red 7:18
14:9	quite 46:3	27:24 28:18	Redfish 36:5
14:13	<hr/>	28:21	reduce
31:7 56:25	R	29:4	10:13 10:22
provided	radiant	29:15 29:20	12:16 12:21
23:15 35:15	25:9 25:13	29:21 29:22	44:22
50:19	radioactive	29:24	46:1 55:4
provides 6:22	43:3	31:6 31:6	reduced 11:8
23:12	raise 38:11	31:9	reducing 39:2
providing	39:21	31:20 32:16	reduction
10:13	raised 44:21	32:17	11:20 12:14
public 3:3	randomly 8:12	35:9	13:15 44:10
3:21 4:4	range 18:1	35:17 35:20	reductions
4:6 5:10	rate 21:22	36:21 36:24	8:20
26:18 40:23	rates 36:7	37:2	referred
56:15 57:16	rather	37:25 38:13	51:10
publics 42:19	11:17 16:23	46:15	refrigerator
pull 49:7	ratio 25:2	48:8	20:20 20:23
pulled 20:7	38:21	48:17 48:17	region 10:9
purchased	reach 39:25	49:3	10:19 11:19
8:25	41:12	55:14 56:14	11:24 12:18
purchases	reading 17:13	57:10	13:20
14:21	real 18:3	reason 18:7	14:5
purpose 37:20	30:9	29:4	14:23 14:24
putting 33:13	50:13 50:13	37:21 43:20	16:25 28:16
41:21	reality 51:4	rebates 29:13	30:3
puzzled 26:23	realize 26:24	recapturing	37:16 54:20
PV 14:11	really 7:10	21:13	56:17
<hr/>	7:10 9:5	recently	57:1 57:3
Q	16:7	28:18 36:20	regional 3:24
quality 23:19	16:21 16:22	recognize	14:2
quarter 35:24	19:1 19:4	19:21	16:24 24:17
36:2	21:10 22:10	record 4:14	regions 14:6
		4:25 23:3	region's
		24:8	42:21 42:22
		recorded 4:14	
		recovery	

regulations 12:6	renewables 16:9	7:15 9:20 10:14 10:19	10:2 11:6 12:11 13:3
reinsurance 41:17	16:10 16:19 32:18 32:18	11:9 14:7 14:9	retiring 13:19 34:22
reinvigorated 44:9	renewal 8:5	14:23 15:3 15:4	return 50:10 52:25
relates 41:1	rent 55:19	15:5 34:2 50:1 50:3	returned 25:22
relative 13:21	renter 55:16	50:6 52:6 52:12	Returning 51:12
released 4:2 4:3	replacing 11:14 40:18	53:1 57:2	reversing 11:13
releasing 24:21	report 37:8 37:12 40:14	respected 31:5	review 3:25 4:4 4:15 56:6
reliability 39:12	representativ e 53:25	response 6:10 6:17 6:25	revised 4:3 rid 20:21 26:21 27:1
reliable 39:13	represented 46:4	14:1 14:4 14:19 14:19	ridiculous 43:16
reliance 32:15	representing 23:7	15:2 15:3	Riggins 35:16
remember 27:21	26:17	responsibly 52:12	rising 38:7
28:8	33:1 46:4	rest 16:25 45:12	risk 8:11 38:10
28:11	requirements 8:8 14:3	restoration 34:14	risks 8:10
39:3	requires 23:20 23:24	restore 35:7	river 34:22 37:22 50:24
42:10	resident 49:23	result 8:15	50:24 51:8
52:4 52:5	residential 29:12	retire 9:12 9:24	51:19 52:14 52:24 53:9
removal 35:8 37:2	resolutions 41:1	10:25 11:19	rivers 34:14 35:8
remove 52:23	resource 6:1 6:13	retired 9:22 10:8	RN 33:1
removed 37:6	7:12 7:14	12:9 13:4 13:7	road 18:15
renewable 6:18	8:7 10:1	24:18 24:19 38:17	Robbins 17:6 17:7
10:15	13:23	retirement 9:10 9:16	
13:9 14:7	14:3 14:4	10:25 11:3	
14:9 15:4	18:20	retirements	
25:1 25:2	resources 6:10 7:11		
25:3 53:1			
55:4			

17:9 17:9	Sandra 15:17	29:10	54:12 55:3
Rockefeller	sanity 50:1	33:9	several 15:12
3:13 57:6	Satsop 43:10	36:15 37:22	22:5
57:7	save 25:12	52:19	share 43:1
roof 45:18	34:10	seems 20:14	sheet 4:10
room 3:20	saving 17:1	22:1	shift 20:16
rough 35:22	savings	23:19 25:20	shine 7:8
round 39:4	6:22 29:23	32:12	shipping
row 47:5	saw 10:23	seen 18:10	37:22
RPS 12:2	18:24 47:19	19:15	shoulder 36:1
12:21 13:17	scale 29:6	29:7	showed 44:17
rules 12:21	30:14 31:23	40:13	shown 34:23
run 5:8	scaler 12:25	48:8 48:9	shut 39:14
10:7 10:14	Scandinavian	50:18 50:18	shy 29:19
running	52:16	50:18 51:11	Sierra
13:6 22:6	scenario 10:8	select 53:14	23:10 26:15
runs 17:19	scheduled	sell 31:15	33:1
21:6	13:8	Senators	47:13 53:25
Rutherford	scientists	42:17	sign 4:11
45:13 45:13	35:5	senior 27:5	signals 18:20
47:2	36:11 36:13	senioritis	signatures
<hr/>	scope 41:23	27:6	54:5
S	screwed 50:22	sequestered	signed 4:20
<hr/>	seaport 37:21	24:20	significant
sales 25:17	seat 16:5	serious 41:21	7:21 11:11
salmon 27:1	second 6:4	seriously	significantly
34:10 34:14	secondhand	43:20 52:2	9:6
35:7	43:11	serve 56:17	signup 4:10
35:10 35:24	Secondly	served 53:16	Simple 50:10
36:13	19:12	server	simply 5:13
37:1	sector 29:12	23:21 23:22	13:19
51:14 52:22	sediment 38:8	services 24:1	single
Sam 34:7 34:7	seeing	Seventh 3:2	25:19 49:18
34:9 51:10	14:20	3:16 3:22	sinks 51:7
samples 10:23	24:9 29:2	5:14	sit 3:9 17:11
sand 24:24		17:25 34:25	
Sandpoint		38:14 54:9	
21:15			

41:23	software 29:7	45:7 47:4	10:1
47:5 49:10	31:22	47:25 53:18	staff 3:18
site 5:15	solar 6:16	53:20	5:19 5:21
39:16 39:24	7:3 7:5	54:2 55:8	15:14 15:22
sitting 51:13	14:11 32:18	speaker 32:14	54:1
six 4:8 25:22	32:19 39:11	speakers	stand 33:5
Sixth 27:22	45:19 45:20	55:14	standard
34:23	52:13	speaking 57:5	10:15 13:9
Skidmore	sold 17:22	specifics	standards
42:13	40:7	49:15	6:18 7:18
skies 17:3	soldier 32:5	speculate	8:5 14:8
slices 37:13	somebody	39:22	standpoint
slide 27:13	20:19 20:20	speed 5:9	6:8
33:5	23:7 41:20	spell 4:24	Stanfield
slides 5:24	somebody's	spelled	19:4 19:8
28:10 28:25	28:10	4:25 53:24	19:9
slowly 11:16	somewhat 19:2	spend 51:6	start 7:22
small 18:8	somewhere	spent 17:16	11:1
28:22 28:23	43:11	20:13	12:25 18:16
30:4 30:8	sooner 41:4	21:1 52:21	40:19 49:12
30:13 30:18	sorry 31:2	Spokane	started 3:9
31:6	32:4 33:4	3:13	3:17 5:21
31:11 31:17	42:7	25:21 25:23	15:13
31:19	sort 12:25	34:9	16:3 30:5
Snake 34:22	26:23	40:24	starting
35:9 38:1	sounds	44:4 53:3	11:11
38:4	47:17 47:18	54:1	starts 6:14
50:24 52:24	source 9:25	55:22 55:22	18:17 32:16
53:9	14:21 40:16	sport 34:12	state 8:5
SNAP 50:8	south 24:24	spot 48:23	9:16
snowpack	Southeast	Sprague 50:14	28:15 45:11
54:18	35:14	spring/summer	statement 5:1
Society 35:6	southwest	36:8	5:2 6:1
Sockeye 36:4	19:3 50:14	springs 46:10	states 4:8
Sockeyes	souvenir 43:1	stab 26:6	11:23 11:25
51:21 51:23	speak 16:9	stack 7:12	12:6
51:24	32:9 33:3		17:21 52:17
			stating 4:22

station 21:15 22:3	streams 36:22 36:23	24:23	50:24
stations 21:6 21:25 22:5	strength 30:10 31:18	sunshine 45:24	systems 51:8 51:17
stay 38:11	strip 45:2	supplies 40:17	<hr/> T <hr/>
stayed 25:22	stripping 44:11	supply 14:2 18:16 18:17	Tahoe 46:19
Steelhead 35:8 35:11 36:9 37:1 51:15 52:22	strong 31:23 44:1 55:3	support 31:8 31:10 31:17 31:24 37:7	tail 7:3 7:20 taking 49:9 51:21 53:12 56:4 57:11
step 13:15	structures 43:14	supported 31:12	talk 15:1 21:12 30:8 37:24 50:5 51:1 55:8 55:9
Stephen 27:15 27:16 28:4	students 48:11	supporting 55:2	talked 12:19 16:11 46:22
Stephenson 16:5 16:6	studied 21:15	sure 5:23 15:1 29:22 46:4 53:22	talking 16:1 16:12 20:14 26:11 39:17 40:11 44:2
S-t-e-p-h-e-n-s-o-n 16:7	studies 37:4	surprised 19:14 49:2	target 27:19
STEPHENSON 16:6	stuff 36:14 44:11 44:12	survival 36:7 51:9	tax 12:3 51:5 52:19
steps 32:18 44:9	sturgeon 51:22 51:25 51:25	survive 33:18	taxes 8:5 8:6
stones 22:15	submit 5:2 56:10	suspect 45:7	teacher 47:21 56:20
stop 15:9	submitted 4:18 5:10	sustainable 29:23	technical 20:16 22:23 54:2
stopping 53:8	successful 53:8	swing 25:20	technological 16:18
store 43:11	sudden 48:16	swings 19:15	technology 13:12 16:12 16:14 16:14
stories 36:15	suggestion 19:11	system 9:4 9:7 9:8 10:3 13:1 13:18 35:19 35:25 36:4 36:7 36:21 36:25 37:25 38:1 38:3	
storm 44:5 44:6	Sumas 19:5		
story 10:21	summary 15:12		
stove 25:11	summer 36:17		
straight 43:15	summers 54:17		
strategy 6:1 13:23	sun 7:8 16:16		
	sunlight		

27:6 46:9	49:20 49:21	25:13	tired 52:19
temperature	49:22	they'd 19:18	today 3:15
24:9	53:9	they'll 41:22	35:2 35:4
temperatures	53:18 53:19	they're	43:1 44:8
24:10	53:22	27:1	51:13 53:10
Terminal	55:5 55:6	29:22	53:18
19:25	55:21 55:21	30:4 30:7	54:3
terms 10:18	55:24	30:9	54:25 57:5
17:1 19:7	56:2	31:10 31:16	Tom 3:11 5:20
34:18	56:21 57:11	33:13 35:15	6:5 15:11
37:5 37:19	57:15	38:2 38:8	15:25 27:13
tested 6:14	thanks	38:10 50:25	33:3 57:6
8:3 15:8	15:11 15:11	51:8 53:17	Tom's 28:25
testify 6:3	22:22 23:13	they've 18:13	56:18
testifying	26:6 28:3	52:16	ton 8:15
5:5	28:4	thinking-	11:11 11:12
testimony	32:22	out-of-	12:4 12:24
4:22 5:3	34:8	the-box	tonight
5:11 5:15	38:15	33:21	4:13 34:9
5:20	42:2 56:1	think's 48:6	45:7
15:10 35:4	56:23	third 31:16	45:10 57:8
thank 16:8	themselves	thoughts 20:9	tonight's
17:4 17:5	45:22	34:16 57:9	5:11
22:21 22:25	there's	thousand 54:6	tons 11:1
25:25	9:23 18:2	thousands	11:21
26:1	18:4	35:13 35:13	12:9 13:2
27:11 27:12	18:12 18:19	48:4 48:7	13:5 13:7
28:6	19:19 19:20	throughout	13:10 13:11
30:22	20:22 21:14	4:8 45:17	13:14
32:3 32:4	21:24 27:24	throw 22:15	Tony 37:13
32:10 32:22	29:3 29:4	22:16	tools 29:6
32:23	29:10 29:24	THURSDAY 3:5	30:14 31:21
34:2 34:3	30:11 31:16	tiered 40:2	top 6:24
38:14 40:19	31:25 32:14	tightened	7:2 7:17
40:20 41:25	33:17 33:21	45:18	topics 56:14
42:4	37:4	Tina 15:18	toss 26:16
43:18 43:18	37:12 41:15	tiny 30:12	total 9:4 9:9
44:25	44:12 46:11		12:17 13:1
45:4 45:5	49:17 50:23		
47:1	54:21 56:19		
	thermostats		

tough 48:24	trouble 57:11	understanding	9:24 50:2
towards 25:20 54:7	Trout 53:4	49:5	utilize 22:1
towers 25:4 43:9 43:13	true 4:18 38:20 47:17	unit 40:17	<hr/> V <hr/>
towns 35:16 35:17 35:19	truly 35:7 41:8	United 17:21 52:17	Valley 25:21
traction 30:9	trust 30:7	Unlimited 53:4	Valmy 9:17 13:3
trade 46:20	try 5:8 22:10 39:16	unreliable 39:11	valuable 25:5 28:1
trading 46:22	44:6 48:24 56:16	unthinkable 41:11	value 9:8
trains 33:12	trying 10:13 25:10	upgraded 30:20	verbal 5:3
transcribed 56:5	27:1 39:2 39:19 42:8	upper 51:19	verbatim 56:5
transcripts 56:8	turbine 21:17 22:4 52:14	upstream 38:4	viable 14:21 21:13 50:4 50:25
transmission 17:18 17:18 20:2 21:24 31:14	turbines 21:9	upwards 52:1	VICE 56:23
transparencie s 28:11	turn 15:25 16:1 20:10 36:12	urgent 49:8	vicinities 21:25
transparency 57:1	turned 42:20	useful 7:7	view 57:12
transportatio n 37:20 37:25 38:1 38:5 38:21	<hr/> U <hr/>	user 18:20	voice 57:3
travel 38:2 38:3	U.N 27:9	users 40:4	<hr/> W <hr/>
tree 46:17 46:18	U.S 30:16	usually 32:9	wait 45:15
trees 24:13 46:14 46:19 46:23	uhhhhhh 49:11	UTC 39:20	walk 42:23
trend 33:7	unbelievably 18:4	utilities 27:10 28:22 28:23 30:3 30:4 30:8 30:14 30:16 30:18 31:7 31:12 31:17 33:24 42:24 54:5 54:7	Walla 50:8 50:8
	understand 26:12 28:25 42:7 44:16 46:8 54:10 54:11 54:13 54:17 54:25	utility 17:11 27:25 31:19 46:16 46:20	warm 43:25
		utilization	warming 26:20 33:16 40:8 41:19 50:13
			Washington 3:12 3:14 6:18 12:15 21:6 23:22 35:14

39:20 49:23 57:8 wasn't 9:5 42:23 43:17 waste 21:8 25:19 50:25 water 17:3 26:25 36:24 50:16 50:18 51:9 51:24 wave 14:12 15:15 ways 10:22 28:1 29:7 29:20 31:11 32:15 56:19 weakness 30:11 wealthier 19:18 wear 53:3 wearing 42:23 weather 24:10 24:16 44:11 45:2 51:17 weatherizatio n 44:9 44:11 50:9 weatherize 45:1 website 5:12 we'd 9:15 27:18 wedge 6:13 6:21 7:18 weeks 4:8 welcome	3:10 3:21 26:7 we'll 3:9 5:15 5:19 14:19 15:6 16:25 31:25 32:5 43:23 47:5 well-balanced 32:12 we're 3:15 3:18 5:17 5:18 9:19 10:12 11:21 14:5 23:1 23:23 24:14 25:5 25:10 27:4 27:13 29:4 29:10 29:17 32:1 33:10 33:15 33:17 36:15 36:16 36:17 37:3 39:14 44:18 49:1 52:3 56:15 West 44:3 Western 3:14 57:7 we've 4:2 6:24 8:25 14:8 20:12 29:7 30:2 33:22 35:3	36:10 39:3 39:5 45:24 48:4 48:25 54:6 54:17 Whereupon 57:16 whether 14:18 15:7 21:23 21:23 Whitworth 45:15 whole 29:8 43:7 wholesale 9:1 wholesalers 31:14 who's 46:4 Wild 34:10 wildlife 34:19 50:3 willing 32:20 wind 6:16 7:3 7:5 7:9 14:12 25:4 39:11 52:12 windage 27:18 window 44:6 windows 45:2 45:17 winter 6:9 6:20 6:22 6:24 7:6 7:8 7:9 14:2 14:10 14:13	14:13 14:22 24:10 witnessed 33:11 wonderful 22:17 24:6 25:21 26:13 47:18 47:20 wood 25:11 work 20:13 27:13 28:15 28:22 30:6 45:1 52:20 worked 28:15 38:18 48:8 50:6 50:8 working 21:4 34:14 54:4 world 23:20 29:2 57:12 worldwide 24:2 worried 41:18 54:21 worth 17:22 WPPSS 42:25 WPPSS-3 43:9 write 30:19 47:10 written 3:18 4:5 4:12 4:18 5:1 5:2 54:10
--	--	---	---

56:8 56:10

wrong 26:2

Wyoming 11:24

12:20

Y

year-round

46:9

yellow 12:5

Yep 47:2

yesterday

50:17

yet 7:23

40:12 45:19

y-l-e-n-g-a

53:24

you'll

18:16

20:8 21:1

31:12 31:24

45:3

yourself

53:21

you've 18:9

19:15 20:19

21:17

38:8 38:9

55:10

Z

zero 6:14

8:12