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**NORTHWEST POWER AND CONSERVATION COUNCIL
SEVENTH DRAFT POWER PLAN**

PUBLIC HEARING

TRANSCRIPT OF PROCEEDINGS

**TAKEN ON
TUESDAY, DECEMBER 15, 2015
6:30 P.M.**

**ECOTRUST BUILDING
721 NORTHWEST NINTH STREET
PORTLAND, OREGON**

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APPEARANCES

NORTHWEST POWER & CONSERVATION COUNCIL:

PHIL ROCKEFELLER, CHAIR, WASHINGTON

BILL BRADBURY, OREGON

HENRY LORENZEN, OREGON

TOM KARIER, MONTANA

PAT SMITH, MONTANA

1 **NORTHWEST POWER AND CONSERVATION COUNCIL**

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8
9 **COUNCILMAN LORENZEN:** Good evening,
10 everyone. We're here -- don't know whether you call
11 this a meeting or assemblage or what, but we're here
12 to take --

13 **AUDIENCE MEMBER:** We can't hear you.

14 **COUNCILMAN LORENZEN:** One moment, if you
15 will.

16 We're here to take your testimony, your
17 input on the Draft Seventh Power Plan. And we have
18 -- we're scheduled in this room until 8:00. We have
19 about 12 or 15 people signed up, so given that that
20 is the number, we have about five minutes per
21 person.

22 If -- if -- the other thing I wished you
23 would consider, I do not want to rob you of your day
24 in the sun or day of infamy, whatever might be, but
25 I notice there are a number of folks from the Sierra

1 Club. And if you have similar comments, I would
2 appreciate if you would all come up at the same
3 time. And I will invite four people at a time up to
4 the -- up to the podium and to the table.

5 And if your comments follow along the same
6 line, I would appreciate if you would indicate your
7 concurrence of the prior speaker or add additional
8 comments to the extent you feel appropriate. That
9 may help us to get through the schedule tonight and
10 allow people who have individual comments or
11 different comments the opportunity to fully explain
12 their position.

13 So to start with, Tom Eckman will give a
14 brief overview of the Seventh Power Plan and then
15 we'll jump right into the public comments.

16 **MR. ECKMAN:** And this indeed will be
17 brief. So we have about five principal findings.
18 I'll walk through those and then we'll go through
19 the resource strategy that's in the Plan, in the
20 Draft Plan, and then we'll turn back to you folks to
21 comment on what we've done in discovery.

22 First, we have a little summary of the
23 Power Plan requirements. The goal of the Power Plan
24 is to ensure reliable and adequate regional power
25 supply at an affordable cost going forward, taking

1 into account environmental impacts. The Plan guides
2 primarily Bonneville's resource acquisition, but it
3 also is a message and guidance to the remainder of
4 the region for resource development for those
5 utilities that are not supplied by Bonneville.

6 It has three major elements: A forecast
7 of resource need going forward, a plan to meet those
8 needs, and we update it every five years. This is
9 the seventh update since 1982, when the first plan
10 was started.

11 First key finding, it's a parallel process
12 here. We've got a wedge chart that shows the amount
13 of resources developed by type. This is the annual
14 energy slide. This is the amount of energy
15 efficiency being developed in the resource
16 portfolio, regional resource portfolio over the next
17 20 years.

18 It's about 4500 average megawatts of
19 energy. On top of that there's some natural gas and
20 solar and wind resources filling out the portfolio.
21 The renewable resources that are being built in that
22 portfolio are largely in response to the existing
23 regional resource portfolio standards for renewables
24 in the region.

25 On the capacity side, winter peak energy,

1 we see about 10,500 megawatts of capacity being
2 provided by energy efficiency. So from the
3 standpoint of annual energy and winter peak energy,
4 energy efficiency is the dominant resource in the
5 resource portfolio over the next 20 years. On top
6 of that are some demand response resources. And the
7 average portfolio is about 700 megawatts, but it
8 varies between zero in some futures and up to 3,000
9 in others. So it's not a single number.

10 There's also some natural gas at the end
11 and some wind and solar PV that they'll provide a
12 lot of -- a lot of energy during the peak periods.
13 And so they don't show up very much in the chart.
14 So natural gas, demand response and energy
15 efficiency are the dominant supply options for
16 meeting winter peak demands going forward.

17 When we look at what happens after we
18 apply energy efficiency and cozen standards to the
19 process, this is the net load after energy
20 efficiency and you can see it starts out about
21 20,000 average megawatts, and it finishes at about
22 the same point. So the major thrust of the analysis
23 that we've done says that in well over the 80
24 percent of the cases we can meet 100 percent of load
25 growth going forward -- load growth -- not all load,

1 load growth with energy efficiency.

2 This is the amount of energy efficiency
3 called for in the Plan. This is the amount that
4 will be developed by federal standards going
5 forward. It reduces the demand by about three-
6 tenths of a percent in terms of annual load growth
7 from the federal standards adopted since the sixth
8 plan was put into action in 2010.

9 That's the net load growth after we've
10 done. 80 percent of the futures we see no load
11 growth. That's the worm of load growth in the
12 existing policy case. If we take the carbon risk
13 case, that's another scenario where we added the
14 social cost of carbon and we end up with the same
15 net result. If we take the low gas price scenario
16 on top of that, we end up with the same result. At
17 the -- at least through 2015 to 2020, we see no net
18 load growth even when we assume less than \$3 per
19 million BTU gas going forward.

20 In the lower conservation case, which is
21 this upper red line there, building less
22 conservation to the tune of about 1200 megawatts,
23 about 25 percent less than the base scenario. Cost
24 to region about \$14 billion in under-investment and
25 energy efficiency.

1 This is the carbon look. We have about
2 seven scenarios that we've thought of here. The
3 first one is the average carbon emission for the
4 Northwest Power System between 2000 and 20 -- or
5 2012, that's the average. It ranges between about
6 40 million metric tons a year, up to over 65. But
7 the mean value across all those years is 55.

8 We have three coal plants scheduled for
9 retirement over the next ten years: Centralia in
10 Washington state, Boardman in this state, and North
11 Valmy in Idaho -- or in Nevada, that serves Idaho
12 Power. If those weren't retired, we'd take 55 down
13 to 45 million metric tons.

14 With their retirement, the existing policy
15 case takes us down to 34 million metric tons. That
16 case also includes about 4,500 megawatts of energy
17 efficiency and demand response. So that's the
18 existing policy cases. All RPS in the region, all
19 existing energy efficiency that's cost effected to
20 pursue going forward.

21 If we add the renewable portfolio
22 standards at the regional level, not state level,
23 regional level, everybody in, that drops it to
24 another five million metric tons. If we take the
25 carbon risk case, which is where we take prices of

1 carbon and raise them somewhere between zero and
2 \$110 a metric ton going forward, that reduces out
3 year 2035 carbon content down to about 24 million
4 metric tons per year for the power system.

5 If we add a couple other scenarios there
6 where we raise the price of carbon based on the
7 social cost of carbon, the mid range ends up at
8 around \$60 a metric ton. The social cost of carbon
9 high ends up at about \$80 a metric ton. We see less
10 carbon reduction. What's happening here is those
11 carbon prices dispatch natural gas ahead of coal,
12 that reduces our carbon footprint.

13 Without those carbon price increases, coal
14 continues to operate until we get down to the last
15 carbon reduction scenario where we actually take all
16 existing coal plants in a region out of service.
17 That gets us down to about 12 million metric tons.
18 It also takes some inefficient gas out. They don't
19 all cost the same.

20 That particular increment at the regional
21 level is a \$34 billion investment and that increment
22 to get down to 12. If we just close the coal
23 plants it's 20. So the first order of business is
24 to get rid of the high carbon producing resources if
25 that's what your goal is.

1 The resource strategy, we see 1400
2 megawatts on average for the first six years through
3 2021. As I said earlier, about 4500 over the 20-
4 year period. If we expand the use of the demand
5 response, that's a new resource in this region.
6 First time this plan has really called for some
7 significant components of it. The last plan called
8 exploration. This plan calls for actual development
9 because we need it for winter capacity. It looks
10 like a really attractive resource.

11 With respect to renewable resources, we
12 want to encourage renewable resource development
13 that brings with it winter capacity. And that's
14 probably the biggest message out of there. We --
15 that would encourage things like geothermal
16 development, perhaps wave energy and other resources
17 that might be able to provide consistent winter
18 supplies, not intermittent supplies.

19 We don't see that changing in the
20 renewable resource standard from region really, is a
21 satisfactory way to get rid of the carbon and
22 develop resources that are cost effective at this
23 point in time. Resource strategy also relies
24 heavily on existing natural gas to make up for
25 resources that are being retired and also to

1 backfill against resources that are more carbon
2 intensive going forward if we see carbon reduction
3 goals being met. Individual utilities might have a
4 need for those resources if they can't access market
5 supplies.

6 On regional resource use, this is part of
7 the deal. We assume that there's a big, happy
8 family in the region. That everybody that has
9 resources will supply in-region need. If those
10 resources are sent out of region, we end up building
11 more here as the consequences. And that's clearly
12 indicated by the analysis.

13 Finally, we need to expand resource
14 alternatives, in particular, energy efficiency and
15 renewable resources that have more constant output,
16 enhance geothermal or wave energy as I said earlier.

17 So that's the resource portfolio and it's
18 now your turn to comment.

19 **COUNCILMAN LORENZEN:** Tom, thank you very
20 much.

21 I'm going to call the first four names.
22 If you'd come forward, appreciate it, and we'll
23 start the testimony.

24 Bob Paleck, Megan Schrader, Ken Nichols,
25 and Tim Sheldon.

1 **MR. PALECK:** I'm Bob Paleck.

2 **COUNCILMAN LORENZEN:** Bob, welcome.
3 Begin, please.

4 **MR. PALECK:** Good evening. My name's Bob
5 Paleck. I live near Vernonia in Columbia County,
6 Oregon. And I -- on behalf of Western Oregon
7 Electric Cooperative and the Pacific Northwest
8 Generator Cooperative, both of which I serve on.

9 **MR. CHAD:** Sir, can we have you use the
10 microphone, please.

11 **MR. PALECK:** Sure.

12 **COUNCILMAN LORENZEN:** Start again.

13 **MR. PALECK:** We got it to work.

14 I am grateful for the opportunity to come
15 before you to tonight with some comments on this
16 Seventh Power Plan and appreciate the opportunity.

17 The reason I'm grateful is because in the
18 process of developing the Plan, it's very obvious
19 that both the Council as well as staff supporting
20 you were listening. And that's terrifically
21 gratifying because frankly we spent an awful lot of
22 time trying to understand it. But in light of that,
23 I'd like to help you understand who we are.

24 Some of you know where Vernonia is. Let
25 me put it on the map a little better for the others.

1 Vernonia is about 40 miles from here and it's kind
2 of the capital of the area west Oregon serves, which
3 are the five northwest counties in the state of
4 Oregon. And if you've obviously been paying
5 attention, you know that those five counties right
6 now are on the top of the list of Governor Brown's
7 disaster area. As a matter of fact, as I'm speaking
8 here tonight, we're still trying to restore a little
9 over 1.8 -- almost two miles of transmission line on
10 the Scappoose-Vernonia Highway.

11 We've still got customers out of service
12 no matter what you read in the Oregonian. And
13 frankly, it's not easy. The reason it isn't easy is
14 because it's expensive. We've only got less than
15 4,000 members, not customers, not rate payers,
16 members of that cooperative. And already just the
17 first of October this year, we had to raise rates
18 six percent as well as increase our per meter charge
19 to \$38 per month. We have the highest electric
20 cooperative rates in the state of Oregon. We're not
21 proud of that.

22 But once again, knowing who you are and
23 that you are paying attention, you'll kind of
24 reflect back to the 2006 and '7, and understand,
25 well, this one is the sixth, what we call FEMA

1 events, in love with acronyms the way we are, in
2 eight years. And it's only the 15th of December.
3 The mud slides are continuing to occur, but as of
4 noon today, the most reliable estimate was that
5 we've already spent just over \$500,000 recovering
6 from this storm.

7 Now, I'm bringing this to your attention
8 because although the plan goes into great detail
9 about generation and equivalent of how much that
10 saves us to conserve, when you get down to the end
11 of the line, like in the Woody Guthrie song that he
12 wrote for the BPA quite a few years ago -- and he
13 wrote it about Vernonia, by the way -- when you get
14 to end of the line, and we're not a generating
15 cooperative, that is still a significant amount of
16 money that frankly we're not budgeted for.

17 Being a cooperative we have no profit to
18 dig into. Essentially, every time rates go up for
19 any other reason, we have to pass it on to the
20 membership, not the customers, not the investors.
21 There's only 4,000 of them.

22 That great increase alone raised the
23 average bill for a residence that uses 1,000
24 kilowatt hours per month by \$10.50. 98 percent of
25 west Oregon's membership meters are residential. We

1 don't have any industry. If you're familiar with
2 the area, you know it's the tree farm. That's where
3 your toilet tissue, boxes and construction materials
4 come from. We're very proud of that. We get to
5 live there. It isn't easy. Maybe that's why more
6 folks aren't trying to right now, but it is
7 expensive.

8 So it was apparent to me when I last spoke
9 to a few of you in Astoria a little over a year ago,
10 you listened. And that's why I'm back tonight, once
11 again, expressing my gratitude. But among other
12 things, I wish you'd take a harder look about things
13 like setting targets as opposed to ranges. Frankly,
14 targets don't work. Every year we look forward to
15 providing a little bit of money back to the
16 membership if there's any left over. And since I've
17 been a board member going on 11 years, that has not
18 happened.

19 I wish you good luck on it if you stick
20 with targets, but I was gratified to see in demand
21 response alone on the slide you just put up there,
22 it didn't mention that 700 megawatts -- because
23 people like us, we can't afford smart meters. In
24 that one -- one six-day event, we've lost
25 essentially any headway we might have made to the

1 tune of \$500,000.

2 The other thing I'd like to leave an
3 impression on is the absolute necessity of
4 hydroelectric power to us. Not only are we
5 concerned about the economics and the fact that it's
6 the cheapest available, but we are living
7 consequences of climate change. Whether you want to
8 argue it or not, frankly, I don't care. On the
9 other hand, a lot of us believe in it because we see
10 it. And it's not just worrying about the number of
11 leaves in the storm drain. Thank you very much for
12 the opportunity. I appreciate it and most -- most
13 appreciate the fact that you are listening.

14 **COUNCILMAN LORENZEN:** Thank you, Bob.

15 Megan.

16 **MS. SCHRADER:** Good evening, Chair

17 Lorenzen and members of the Council. My name is
18 Megan Schrader. I'm the Executive Director of Tech
19 Net in the northwest region. Tech Net represents
20 over 70 of the nation's leading companies in the
21 fields of information technology, ecommerce,
22 Internet media, venture finance and green
23 technology. I cover state and local policy for 15
24 states, including Washington, Oregon, Montana and
25 Idaho.

1 Energy is a top priority us for Tech Net.
2 It's a really great issue for us because not only do
3 we represent some of the cream of the crop of clean
4 energy technology companies, but also many of the
5 consumers who invest in and use those technologies.

6 Tech Net supports policies to spur
7 deployment of clean energy resources such as fuel
8 cells, solar, wind demand side, enhanced clean
9 combustion and clean transportation, and we work
10 diligently to advance them. Tech Net also supports
11 smart grid technologies that increase the
12 reliability and the resilience of electric grid.
13 Enable clean technologies in the electric vehicles
14 and help consumers reduce their electric bills.
15 Tech Net supports empowering consumers with access
16 to their energy data and technology to manage and
17 reduce their energy use.

18 Thank you so much to the Council for the
19 opportunity to comment on the Seventh Power Plan and
20 for the open and transparent process that the
21 Council has instituted. We believe that Council
22 staff has conducted robust and thorough analysis of
23 the Northwest Power System, and it's constructed
24 valuable recommendations for the region. We have
25 identified a few issue areas in the Draft that we

1 believe should be addressed in both the final Plan
2 and in ongoing Council work following the Plan's
3 release.

4 These areas are, first, demand response
5 and distributed generation forecasts should included
6 as a target in the Plan and used for both resource
7 and transmission planning. Second, that integrated
8 demand side management captures all demand site
9 resources into the planning processes at the
10 Council, which would be energy efficiency, demand
11 response and distributed generation.

12 Third, the consideration that technology
13 maturation and consumer adoption is faster than
14 expected by utility planners. Fourth, that consumer
15 -- or customer, sorry, and vendor engagement will
16 accelerate distributed energy resources, cost
17 effectiveness and adoption. And there I'm referring
18 to energy efficiency, all forms of demand response
19 and distributed generation.

20 And finally, that Pacific Northwest should
21 consider new methods of procuring, evaluating and
22 integrating cost effective, distributed energy
23 resources. Tech Net will submit full written and
24 detailed comments later this week of a more robust
25 nature, but we -- we've worked in conjunction with

1 many of our members and also with Ken Nichols on my
2 right, from EQL Energy, who will provide additional
3 remarks. Thank you for the opportunity to comment
4 today.

5 **COUNCILMAN LORENZEN:** Thank you, Megan.

6 I'm sure everyone knows, but just as a
7 reminder, we also obviously take written comments.
8 So to the extent you feel you have not had the
9 opportunity to fully explain your position in oral
10 testimony, we encourage you to submit written
11 comments in support of your position.

12 Ken.

13 **MR. NICHOLS:** Thank you, Chair Lorenzen
14 and Council members. I'm just here to provide a few
15 more details. I live here in Portland and I
16 followed and participated in parts of the Plan
17 development, so I'm happy to provide some comments
18 to Tech Net and to you guys here this evening.

19 The first one was include targets for
20 seasonal capacity, winter and summer, for all cost
21 effective distributed energy resources. So this
22 means energy efficiency, demand response and
23 distributed renewables. The Plan, Draft Plan has a
24 target for energy, average megawatts, but has left
25 off the target for capacity.

1 And everything we hear, see and even read
2 in the Plan suggests that capacity is, in fact,
3 something to be focused on in the -- in the next
4 five to six years, especially if you're going to
5 integrate renewables and start closing some coal
6 plants, et cetera. So we think it's important to
7 begin focusing on capacity as a target. We think
8 you need to target and begin to measure it if you're
9 going to achieve it.

10 Second, we recommend the region to begin
11 to move towards integrated DSM and should perform
12 distribution resource planning. IDSM is looking at
13 measures that provide both energy and capacity.
14 Examples are smart thermostats, building management
15 systems, VFDs or variable-frequency drives with
16 controls, so you're beginning to see it. I think
17 there's a table in there that has integrated -- in
18 your first page, that kind of shows the different
19 levels of -- or different categories of DSM.

20 And certainly energy has been a big part
21 of the northwest. It's -- it's a non-dispatchable
22 form of capacity reduction because all the -- as Tom
23 showed, the energy efficiency that we get here in
24 the northwest does reduce winter and summer
25 capacity, but it's not dispatchable. And demand

1 response has a dispatchability characteristic.

2 You also see a category has price and
3 behavior base and you're going to start seeing more
4 -- you're going to see time of use and variable
5 rates begin to play an impact on the load and the
6 load forecast. And frankly, the Council in its load
7 forecast has none of those aspects in it at this
8 stage. And we think in the next five years or
9 certainly the next, you know, 20 years, you're going
10 to see a big impact from that -- from that type of
11 DSM.

12 And then the fourth category is education
13 and market transformation. And we're big supporters
14 of NIA. And that's called out in the plan for them
15 to begin playing a role and looking at these types
16 of technologies and how they -- how they contribute
17 to the resources of the northwest.

18 Third topic is to include a target for
19 demand response specifically. The Plan calls for
20 seven -- a range of 700 to 1,000 megawatts by 2021.
21 We think soft words, like, "be prepared" or
22 "continued efforts to establish" are insufficient
23 and to meet Council objectives. And you don't see
24 those words tied to energy efficiency and we think
25 it's time for the region to move towards targets.

1 Just to give you some numbers, 1,000
2 megawatts is about 1-1/2 percent of the winter peak
3 in the northwest. And if you look at winter demand
4 response programs in other parts of the country,
5 Quebec, the Northeast, Ontario, et cetera, you see
6 ranged -- this is, like, old data, this is 2013 data
7 -- you see ranges from four to five percent of
8 winter peak coming from demand response so -- so we
9 are to say 1-1/2 percent is a target for 2021 is
10 conservative in my estimates.

11 So why target DR now? A couple of the
12 reasons, one is we've heard things like lead times
13 on demand response six months to a year. Well, I
14 would say that may be true if you're going to
15 curtail a pulp refiner or an aluminum smelter. You
16 could get them to curtail in six months if you get
17 good contracting mechanism.

18 But for the demand response I'm talking
19 about and what's happening around North America, it
20 takes years to engage customers, put in proper
21 control systems and do it in a way that doesn't
22 inconvenience customers. So if we're going to do
23 this right, we need to begin now because the lead
24 times are years to begin to aggregate and put
25 customers into these kind of programs.

1 The other reason to start now is lost
2 opportunities. You hear in the energy efficiency
3 world all the time, but new controls, new systems,
4 new construction, if you're not there making those
5 decisions and involved in the decisions when they're
6 being made, you would lose that opportunity. So we
7 think, you know, being prepared and efforts to
8 establish -- again, doesn't get -- doesn't get us
9 there.

10 And finally, you know, I've looked at --
11 in there is like a census of integrated resource
12 plans, 2015 IRPs from some of the IAUs. There's
13 over 1700 megawatts of gas generation being planned
14 for between 2020 and 2026. Most of that is peaking
15 power generation. So my fear -- my fear is that the
16 region justifies natural gas generation for a need
17 for capacity, not energy, but once built for
18 capacity, they'll run it and they need to run it and
19 the economics change. Once you have something in
20 place, you should use it. That's how the economics
21 work.

22 An example, Jim Yost isn't here, so Idaho
23 Power is an example. Idaho Power in 2012 finished
24 Langley Gulch. They had over 400 megawatts of
25 summer DR, demand response, irrigation, air-

1 conditioning, et cetera. When they finished Langley
2 Gulch, some of their forecasts for load growth and
3 capacity didn't materialize. And their decision was
4 to try to turn off, get rid of all of the demand
5 response programs that they had established, because
6 they had excess capacity. So projections makes
7 sense. So I just bring that up as an example of
8 what can happen if you don't begin to develop this
9 resource today.

10 I think the -- the last reason is people
11 still don't believe it here in the northwest. It's
12 still not real. It's not reliable. So I think you
13 need to gain comfort with the capabilities of --
14 that come with this new technology or new programs.
15 I think starting now helps. Hopefully, I'm not
16 going too long I'm almost done.

17 Actually -- oh, one last thing, market
18 reliance. I read the -- in the Plan there's some
19 risk that won't need demand response because we're
20 going to be relying on the market. And I know that
21 that's caused some angst in the past, I think. And
22 they bring up Enron and stories about relying on the
23 California market.

24 And I think in general, I think if you do
25 rely on the market for that capacity, it's going to

1 be resources from the Southwest which will be
2 natural gas and coal that we'll be importing. So in
3 general, I just don't think it's a great policy to
4 be relying on the market when we have cost effective
5 resources like energy efficiency and demand response
6 that, again, are, I think low-hanging fruit at this
7 stage for this region. Thank you for your time.

8 **COUNCILMAN LORENZEN:** Thank you, Ken.
9 Tim.

10 **MR. SHELDON:** Thank you, Chair Lorenzen
11 and Council members. Ladies and gentlemen, I'm Tim
12 Sheldon. I'm a Washington State Senator representing
13 the state's 35th District which includes all of
14 Mason County and parts of Thurston and Kitsap
15 counties. I also serve on the Energy Northwest
16 Executive Board. I was appointed to the executive
17 board by the agencies 27-member board of directors
18 in 2003. And it's in that role in which I attend
19 council meetings which brings me here this evening.

20 On the executive board of Energy
21 Northwest, I take the role of protecting first and
22 foremost, the best interests of Washington and
23 regional rate payers. Among several interesting
24 public roles, I have already served as a public
25 utility district commissioner and am currently a

1 county commissioner. So I have some idea of the
2 challenges you all must have faced to ensure local
3 voices and interests for community throughout the
4 region who are reflected in the Draft Seventh Power
5 Plan.

6 It is my opinion that you have
7 accomplished that task well by being responsive in
8 this Plan to local interests and concerns. As
9 Energy Northwest staff commented during the hearings
10 in Tri-Cities, this Power Plan presents a great deal
11 of research and thoughtful planning which will
12 hopefully guide the Bonneville Power Administration
13 and other regional energy organizations to work
14 together to achieve our future energy needs in a
15 responsible, cost-effective manner.

16 I also serve on the Senate Transportation
17 Committee as well as the Joint Transportation
18 Committee. The prospect of carbon reduction through
19 increased use of electric vehicles powered by clean
20 hydro, clean nuclear, or renewable energy holds our
21 greatest opportunity for carbon reduction gains.

22 This is why Energy Northwest and many
23 Washington state utilities advocate for local
24 utility flexibility for achieving carbon reduction
25 goals, either through generation transmission or

1 transportation. The Council's push for further
2 smart grid development to specifically integrate
3 electrical vehicles into the power system is timely
4 and sound, and again, appropriately aimed at the
5 sector which as the greatest challenge and greatest
6 opportunity for carbon reduction.

7 Let me also reiterate what you heard from
8 Energy Northwest staff in Pasco last month. The
9 Council's Plan acknowledges, and rightly so, the
10 enormous potential for small modular reactors and
11 advanced nuclear energy. The Plan calls for regional
12 attention, again, rightly so, to our nation's
13 abundant and controllable nuclear fuel supply and
14 despite from what we have all heard from a few
15 activists, nuclear energy remains immune to the
16 price fluctuations that affect natural gas, and
17 unlike natural gas, low-cost nuclear will be
18 unaffected by future climate policy.

19 I would personally like to thank you for
20 keeping lower income rate payers in your thought
21 process and at the forefront of this plan. I'm also
22 vice chair of the Washington state energy --
23 Washington State Senate's Energy Committee. And my
24 colleagues and I are very much aware of the enormous
25 opportunity for energy efficiency gains if

1 individual rate payers are engaged and properly
2 informed by the utilities.

3 We also know, as you do, that low-income
4 families among other segments are a very-hard-to-
5 reach group. Your recommendations to BPA and
6 utilities to gather demographic and business data
7 either independently or from government agencies to
8 help identify and engage low income, hard-to-reach
9 groups, holds significant potential for all of us if
10 such guidance is taken seriously and followed.

11 On a personal note, over the past several
12 months, I have enjoyed my opportunities to attend
13 your meetings. You have an excellent staff and you
14 do an excellent job of listening. So thank you very
15 much tonight, Mr. Chair and Council members, for
16 your time and hard work, and all that you have put
17 forth on this Draft Plan. Have a great evening.

18 **COUNCILMAN LORENZEN:** Thank you very much.
19 Thank you for your comments.

20 And I'm going to skip around a little bit
21 on this list. And so the next four people we'll
22 call up will be -- have an indicated affiliation
23 with the Sierra Club. Gregory Monahan, and I'm sorry
24 if I mispronounce your name, it's Rhett Lawrence,
25 Patricia Bellamy and Diane Winn. And I know I

1 mispronounced names and I apologize profusely. And
2 Gregory.

3 **MR. MONAHAN:** Good evening. Thank you for
4 the opportunity to speak. My name is Dr. Gregory
5 Monahan. I'm a resident of Portland, Oregon. I'm
6 here speaking on behalf of my three grandchildren
7 and the children of Oregon and Washington. I've
8 spent the last six years developing and maintaining
9 a climate change and sustainability course content
10 for the required engineering curriculum at Portland
11 Community College. During the same period. I've
12 served on the Sustainability Advisory Board for Lake
13 Oswego. I currently serve as the chair for the
14 Beyond Gas and Oil Team for the Oregon chapter of
15 the Sierra Club.

16 We have now gone beyond the point where
17 any reasonable person can doubt that humans are
18 causing the warming of earth, primarily by burning
19 fossil fuels. The imperative to move to clean,
20 sustainable energy sources is well understood by
21 anyone who has taken the time to understand the
22 science. Adopting a full cycle -- life cycle
23 accounting approach to analyzing the carbon impact
24 of fuels will lead one to the inescapable conclusion
25 that natural gas is not a clean fuel bridge to the

1 future.

2 The latest independent research
3 demonstrates that leakage rates for fracked natural
4 gas have been hugely under-reported by the industry.
5 Quoting from a paper by Dr. Robert W. Howarth of
6 Cornell University, "Using these new best-available
7 data and a 20-year time period for comparing the
8 warming potential of methane to carbon dioxide, the
9 conclusion stands that both CO gas and conventional
10 natural gas have a larger greenhouse gas than do
11 coal or oil for any possible use of natural gas. In
12 summary, there is no fossil fuel solution to the
13 fossil fuel problem."

14 I urge you to aggressively plan for a
15 fossil-fuel-free electrical power system and begin
16 the implementation of that immediately. Recognize
17 the need for fossil fuel power no longer exists.
18 Renewable energy sources coupled with energy
19 conservation can meet our needs now and for the
20 future. Completely eliminate from the Plan any new
21 construction of natural gas fuel plants beginning
22 immediately. Recognize that peak power needs are
23 beginning to be able to be met by renewable storage
24 facilities using current technologies available at
25 commercial scale.

1 I urge you to become part of the solution
2 by actively seeking partnership with energy storage
3 companies to build proof of concept energy storage
4 plants. As someone who has made a commitment to
5 lifelong learning, I expect no less than the leaders
6 of -- from the leaders of society. The future
7 welfare of our children and grandchildren demands
8 leadership from you. Thank you very much for your
9 attention.

10 **COUNCILMAN LORENZEN:** Thank you. Now, I'm
11 not going to pronounce your name again. Please let
12 me know your name.

13 **MR. LAWRENCE:** Chair Lorenzen, Council
14 members, my name is Rhett Lawrence --

15 **COUNCILMAN LORENZEN:** Rhett, yes.

16 **MR. LAWRENCE:** I'm the Conservation
17 Director for the Oregon chapter of the Sierra Club.
18 I'm here on behalf of the more than 20,000 members
19 and supporters of the Sierra Club in Oregon, both to
20 thank you for your important work on the Seventh
21 Power Plan, and to urge you to continue to give
22 priority to energy solutions that move us away from
23 fossil fuels and toward a more renewable future.
24 Thank you for allowing my brief comments this
25 evening.

1 The Sierra Club is pleased that the Draft
2 Seventh Plan builds on the power council's previous
3 plans that demonstrate energy efficiency is the
4 regions most cost effective and abundant resource.
5 In fact, the Draft Plan shows that the region can
6 meet all its energy needs through energy efficiency
7 and reducing demand. It is clear that there is
8 simply no need to build new gas plants anywhere in
9 the region or to continue using coal power. However,
10 we have do have some suggestions to make the Draft
11 Plan even better in it's final form.

12 First, we believe that the Seventh Power
13 Plan should include stronger energy efficiency
14 targets. The Plan can reduce -- the Plan can reduce
15 electricity bills and continue our region's clean
16 power leadership by maximizing the amount of energy
17 efficiency in the northwest.

18 Over the past 35 years, energy efficiency
19 measures have helped the region to greatly reduce
20 our electricity bills, saving about \$3-1/2 billion
21 every year. The final Plan should set a more
22 ambitious energy efficiency goal than the current
23 4500 megawatt savings target. Our region has always
24 met its energy efficiency goals so we can and should
25 aim for even greater savings.

1 Second, the Council's Plan should push
2 states to set an ambitious -- to set ambitious
3 renewable energy goals to affect our health and
4 climate. Nowadays, many renewable resources are
5 cost competitive with coal and gas. Investing in
6 renewable energy can create good family-wage jobs.

7 But the Council's current energy models
8 undervalue renewable energy and don't consider its
9 full potential to help meet electricity needs in the
10 winter when demands are high. We believe that the
11 Seventh Plan should call on states to use more
12 renewable energy and speed up our transition away
13 from dirty coal and climate-polluting gas.

14 We also urge the Council to reduce demand
15 instead of adding any more climate pollution in the
16 form of new fossil fuel generation. As you know,
17 gas plants cost a lot to build and create a
18 significant climate pollution of their own, and the
19 truth is that we don't need them. Instead we
20 believe that the final plan should include a 700 to
21 1100 megawatt target. A low-cost, higher-term
22 demand response programs that incentivize using
23 power outside of peak demand times.

24 Together, aggressive efficiency and demand
25 response targets make it possible for our region to

1 power the next 20 years with clean, low-cost energy
2 solutions. And, of course, accelerating the
3 retirement of existing coal plants is the single-
4 most important cost-effective step we can take to
5 meet our regions carbon pollution reduction goals.

6 We believe the Council's estimate of coal
7 retirement is conservative, and that more coal plant
8 retirements are likely to occur or be scheduled in
9 the next few areas. This argues for a more robust
10 analysis of how renewable energy can help fill that
11 gap.

12 Finally, the Sierra Club urges the Council
13 to conduct a full assessment of salmon recovery
14 costs in its final Plan. As the dams and the
15 federal hydrosystem age, their maintenance costs
16 will continue to skyrocket. At the same time,
17 climate change is further stressing our already
18 imperiled salmon stocks.

19 We've also recently become more aware of
20 the importance of those salmon for resident
21 northwest Orcas. We believe the Council should take
22 an honest look at the costs and benefits of
23 maintaining or retiring the four large but limited
24 output dams on the lower Snake River to aid passage
25 and survival of wild salmon stocks and the

1 consequent impact on Orcas.

2 Indeed, the Council has done such analyses
3 in previous plans, but failure to do so here is a
4 major shortcoming. We strongly urge the Council to
5 update and expand its earlier lower Snake River dam
6 removal and energy replacement analysis as an
7 addendum to the Seventh Plan.

8 So in conclusion, we do believe the
9 Council and its staff has done good work in
10 preparing this Draft Seventh Plan. There is some
11 room for improvement, however. And we hope you will
12 take our suggestions to heart to complete the Plan.
13 So thank you very much for the opportunity to
14 testify tonight.

15 **COUNCILMAN LORENZEN:** Rhett, thank you
16 very much.

17 Patricia Bellamy, please.

18 **MS. BELLAMY:** My name is Patricia Bellamy.
19 Thank you for the opportunity to speak this evening.
20 I'm here to give you a nurse's perspective. I've
21 read your charter. I commend your efforts in saving
22 citizens' dollars and improved efficiency. I
23 strongly suggest you add renewables to your mission
24 statement to read "Will ensure affordable, reliable
25 and renewable energy systems." With your leadership

1 we can and must move away from fossil fuels to clean
2 renewable energy. Every effort must be made
3 immediately to take and tackle climate change by
4 stopping combustion of fossil fuels.

5 Nurse's are very worried about the
6 accompanying health-and-safety-related issues with
7 climate change. Such as vector-born diseases and
8 wide-spread famine from drought and floods. Climate
9 change is a looming public health crisis. I'm
10 currently a member of the Sierra Club health
11 outreach and I'm also a retired critical-care nurse.
12 I have over 40 years membership in the American
13 Nurses Association, ANA, as well as Oregon Nurse's
14 Association, ONA.

15 The following is from the ANA house of
16 delegates resolution it reads: "Resolve that the
17 American Nurse's Association recognizes that the
18 challenges we face as the result of global climate
19 change are unprecedented in human history. It is
20 critical that nurses speak in a united voice and
21 advocate for change on both individual and policy
22 levels."

23 Additionally, this year, ONA sent a letter
24 to Governor Kate Brown, encouraging her to continue
25 the policy of no coal export. Prevention is the

1 cornerstone of public health and there are no single
2 silver bullets to combat climate change, but there
3 are silver buckshot. Adding more job-creating,
4 renewable energy systems is a piece of silver in
5 efforts to further prevent climate-related risks to
6 Oregon citizens. Policy and innovative changes such
7 as the evolving electrical grid and additional
8 renewables can meet the challenges of demand and
9 energy shortage. Our future depends on it. Thank
10 you.

11 **COUNCILMAN LORENZEN:** Thank you very much.
12 Diane.

13 **MS. WINN:** Good evening, I'm Diane Winn.
14 I'm here from Portland and I don't come from a
15 technical background, but everybody else does here,
16 but I -- so I went ahead and read your bios and I
17 was very impressed with your experience and
18 background. And I really think that this is
19 reflected in the Council's Seventh Energy Plan which
20 emphasizes the positive role of energy efficiency
21 and demand response. But with my background in
22 nursing and public health research related to child
23 health and safety, I would like to point out a
24 couple of issues that I'd like you to consider as
25 you move forward with finalizing this plan.

1 All major medical, nursing and public
2 health professional organizations have raised the
3 alarm about the numerous negative effects of climate
4 change on human health, and support efforts to move
5 towards a clean energy future. As you well know,
6 coal is the most carbon-intensive fossil fuel and is
7 a major contributor to climate change. It accounts
8 for over a third of carbon emissions in the U.S.,
9 and only half of the emissions globally. I,
10 therefore, urge you to accelerate the retirement of
11 existing coal plants in the region. This is an
12 important step to meet our regions carbon-reduction
13 goals.

14 But natural gas, as other people have
15 mentioned, should not be considered an alternative.
16 Like coal, natural gas contains many hazardous
17 pollutants and also contributes to climate change.
18 Natural gas emits methane which is one of the most
19 potent greenhouse gases. Therefore, I would ask that
20 you also transition us off of gas and move us
21 towards a renewable energy -- towards renewable
22 energy sources.

23 I think we all need to take to heart the
24 words of the American Academy of Pediatrics in their
25 recent policy statement, which states that failure

1 to take prompt, substantive action would be an act
2 of injustice to all children. With all of the
3 recent action and progress that has been made to
4 address climate change, now is an opportune time for
5 you to join in these efforts to protect our
6 children's future and set up a very aggressive,
7 clean energy standard for the northwest for the next
8 20 years. Thank you for your time.

9 **COUNCILMAN LORENZEN:** Thank you very much.
10 Thank you for your testimony.

11 Steven Eldred and I think it's Clyde Wolf.
12 And Bryce Yonker and Michael -- is it Dean or Deer?
13 I'm not sure which. I'm sorry.

14 We'll start with Steven.

15 **MR. ELDRED:** First off, my apologizes for
16 not dressing nicely. I'm here for the cause, not
17 the appearance.

18 Okay. So now -- to start off, I don't
19 normally share my thoughts about climate change to
20 just anybody, knowing that most people -- the
21 average person is -- they have -- too many other
22 things are going through their mind, as an example
23 of the way most people today think. It's -- if
24 there's anyone or anything that I plan to devote my
25 time to and has -- it has to be impact-oriented

1 people which most of us here are. That's why I'm
2 here today.

3 Out in the world are the universe you see
4 every day, usually the stressed out ones, people who
5 like, say, use too much drugs or something, which
6 obscures the way the brain thinks, their awareness.
7 If there was a pros and cons list for continuing to
8 let oil usage continue, I say just ignore the pros
9 because obviously allowing to continue more usage is
10 an invite for more climate degradation. As -- as
11 oil -- as the consequences of oil outweigh the
12 benefits of them.

13 What level restrictions would be placed on
14 the free market to completely ensure carbon
15 standards are met. That depends on what's sold and
16 if -- if it's -- if there has to be impact
17 restrictions, then the fact that it's a free market
18 is a bit of a contradiction, but that's -- that's
19 kind of off topic.

20 Now, this sounds a little bit -- this
21 sounds like a little bit of an, like, outwardly
22 idea, but it's real and enchanting. Imagine a
23 future, like, say, money wasn't the operating factor
24 of society. There was maybe a merit system. Like,
25 for example, education would be free. Paying jobs

1 would not be around to be an excuse to shirk your
2 education and involve your mind, your mindset and
3 what affects what.

4 Not -- I've heard that it's not the love
5 of money that is the problem but in some cases
6 that's not always true. Money still being around is
7 once again the core thing that obscures people's
8 awareness. It basically -- it's like a dollar bill,
9 find a blindfold made of dollar bills, you know.

10 Okay. Past hardships versus present.
11 Pollution -- back in the -- before the -- life
12 before the industrial revolution, in general, there
13 wasn't much pollution going on because we didn't
14 have as much convenient technology as we do today.
15 And the fact that we today means that there's carbon
16 emissions and greenhouse gases from those devices.
17 But it's -- so until those -- until we reach a
18 future where both are combined we all -- we stay
19 caught in the -- in the mental vulnerability and
20 become prone to be assimilated with polluting
21 companies.

22 Now, I'm not an expert on the different
23 factors of climate change. I do as much research as
24 possible and I'm still in the process of learning
25 many different things and trying -- and keeping up

1 with current environmental-related articles, but I'm
2 mainly more about observing typical human behavior
3 which has an impact and -- because it's there. So
4 that's why I'm here today. I just wanted to share
5 my thoughts and -- because if I hadn't to come
6 today, I don't feel as though I would -- I mean, I
7 obviously wouldn't have been another voice to be
8 heard. So thanks for letting me share.

9 **COUNCILMAN LORENZEN:** Thank you very much
10 for your comments.

11 Clyde Wolf, please.

12 **MR. WOLF:** I'm Clyde Wolf from Hillsboro,
13 Oregon. I'm a member of the Sierra Club. My topic
14 today has nothing to do with the Sierra Club, as you
15 will find out shortly.

16 **COUNCILMAN LORENZEN:** That's okay.

17 **MR. WOLF:** It hit me, first of all, that
18 you've viewed very detailed analysis. You've done a
19 lot of great work on this topic. The one thing that
20 I've kind of found missing mentioned throughout all
21 your plan, was the we have a Columbia River and that
22 most of our power today comes from that. Is there
23 something we can do to heal and make the river more
24 productive more helpful.

25 I've come from Montana and I'm going to

1 talk just a second about a small dam up in Montana.
2 I don't know if any of you have ever been up to the
3 west fork of Bitterroot River, but there's Lake
4 Como, high in the mountains there in an area that
5 normally gets a lot of snow. Well, now, we know
6 that in the coming years we're likely to get cycles
7 of a lot less snow and more rain in the wintertime.
8 Places like the west fork of the Bitterroot is
9 ideally suited to capture that rain or snow and
10 deliver it down the Columbia River late in the
11 summer.

12 Now, that's just one little dam, but it
13 has a significant impact on that river and that
14 river could have a significant impact on the
15 Columbia River. The question I really I have is is
16 it now time for us to start looking at those, what
17 I'll call headwater dams, and is it time for us to
18 start looking at building not one or two or three,
19 but dozens to hundreds of these small dams above
20 where the migrating fish go where they would capture
21 water when it lands as rain rather than just snow
22 and release it slowly down the river so that we can
23 use that water.

24 First of all, those small dams could be --
25 have a generating source so we now have dispatchable

1 power for peaking capacity. We have fairly deep,
2 small lakes so we can be putting cold water in those
3 rivers which the salmon so desperately need. And we
4 can capture a lot of that peak flow early in the
5 spring when the BPA and Columbia River is struggling
6 with a factor of too much water. Just -- it's a
7 small piece but I think now is the time to start
8 looking at it. Thank you very much.

9 **COUNCILMAN LORENZEN:** Thank you, for your
10 comments.

11 Bryce.

12 **MR. YONKER:** Power Conservation Council
13 Members, staff and guests, thanks for having me. My
14 name is Bryce Yonker. I'm the Executive Director of
15 Smart Grid Northwest. Smart Grid Northwest is a
16 regional trade organization founded to help support
17 grid and smart grid industry and solutions. We were
18 founded in 2009 and last year expanded our focus to
19 expand more broadly across the whole region.

20 The organization has a growing member base
21 of about 70 organizations, including investor- and
22 consumer-owned regional utilities, growth, grid
23 modernization, technology companies, leading
24 industry corporations, higher education and research
25 institutions, regional and national government

1 agencies and more.

2 Nearly 30 organizations directly
3 contributed for the remarks that we have prepared
4 and submitted for you. Like our membership, these
5 comments are from a diverse set of industry
6 professionals including utilities, early and growth-
7 stage technology companies, multinational
8 corporations, higher education and nonprofits. Our
9 remarks for the Draft Seventh Power Plan cover four
10 areas, including smart grid, demand response, demand
11 side management, distributed energy resources and
12 transactive energy.

13 Keeping in mind the Council's objective
14 and I quote, "Assuring the region a safe and
15 reliable and economical power system with due regard
16 for the environment," and the 20-year time period of
17 the Plan, we believe that each of these four areas
18 requires additional attention in the Seventh Power
19 Plan and certainly leading into the eighth plan.

20 Although, we address each topic
21 separately, we want to stress that for the purposes
22 of the Council's planning process is useful to the
23 most demand side management resources, including
24 energy efficiency, demand response, distributed
25 generation, dispatchable standby generation, smart

1 inverters and many forms of energy storage in a
2 systems perspective rather than in an isolation.

3 We encourage the Council to review Smart
4 Grid Northwest comments. If there is any support we
5 can provide on the smart grid, demand response,
6 distributed energy resources, transactive energy and
7 similar topics, we'd be happy to engage with the
8 Council and regional stakeholders. Thank you.

9 **COUNCILMAN LORENZEN:** Thank you very much.
10 Michael.

11 **MR. DEAN:** Hi. And it is Michael Dean.

12 **COUNCILMAN LORENZEN:** Okay. Got it.

13 **MR. DEAN:** I'm here today on behalf of the
14 Public Power Council which I think most of you are
15 familiar with. I'm a senior policy analyst there.
16 For those that don't know that might be in the room,
17 PPC is nonprofit association representing the
18 interests of Bonneville's -- the Bonneville Power
19 Administration preference power customers that pay
20 all the costs of the federal and Columbia River
21 power system. And take power to serve their loads
22 at no profit for their consumers and members.

23 We are going to be submitting detailed
24 written comments, but I wanted to offer a few verbal
25 comments as well. I should mention also that I

1 served as an expert on the systems analysis advisory
2 committee in the development of the Plans. So I'm
3 very familiar with Ben's work and I've worked with
4 Tom a lot as well in the development of the Plan.

5 I think my first comment is that we think
6 the overall resource strategy makes a lot of sense
7 in terms of a mix of conservation, energy
8 efficiency, demand response, some need for natural
9 gas potentially, and also for re-dispatch of
10 existing resources as well. We do have, as I said,
11 some detailed written comments which we hope you'll
12 consider.

13 A few areas I'd like just to highlight
14 quickly. We do really think there is a need for a
15 range in conversation goal. There's a lot of
16 uncertainty inherent in the forecasting process.
17 And additionally, I think the analysis by your own
18 staff -- well, many of the scenarios are quite
19 closely grouped. There are -- there is a range that
20 are, from our perspective, in the analytical
21 results. So we really encourage you to adopt a
22 range in your final recommendations.

23 Another area that I know has gotten a lot
24 of discussion, I heard got some discussion at your
25 meeting earlier today, is the natural gas price

1 forecast in the Plan. It's a key input and we think
2 it's pretty far off right now, given the vintage of
3 when it was done. I'd really encourage to you adopt
4 a forecast that has a midpoint at least that's in
5 line with current futures prices. We don't think
6 there's really a need to guess or make a
7 fundamentals-based forecast for the period of time
8 when there are existing transactions being done.
9 And that should really be the midpoint of your
10 forecast.

11 Just briefly one other item that you'll
12 see again in our comments, this gets a little
13 technical, but Appendix G to the Plan, which defines
14 a cost-effectiveness calculation for energy
15 efficiency, and defines a lot of variables on a
16 regional level for that calculation. We'd like to
17 have you guys in the final Plan have some
18 recognition at that individual sort of utility
19 service area circumstances may be different than a
20 regional average.

21 They may have their needs -- may have
22 needs to vary some of those inputs based on their
23 own circumstances. And also, the fact that some
24 utilities conduct their own portfolio modeling,
25 similar to the methodology that you use, that your

1 staff uses, and that may be a valid way for
2 determining cost effectiveness of energy efficiency
3 in particular service territories as well.

4 Again, all that's going to be in the
5 comments we'll be submitting to you, definitely by
6 Friday, if not before. And I hope you'll take them
7 into consideration, so thank you.

8 **COUNCILMAN LORENZEN:** Thank you, folks.

9 All right. Brad Mullins, Cameron
10 Yourkowski, Inga Fisher Williams and Art Lewellan.

11 **COUNCILMAN LORENZEN:** We'll start with
12 Brad.

13 **MR. MULLINS:** Good evening, Council
14 members. My name is Brad Mullins. I'm here today on
15 behalf of the industrial customers at Northwest
16 Utilities. And for those in the room who don't know
17 who we are, we represent many of the large
18 industrial and other large loads in the region, many
19 of which take power from preference customers BPA,
20 and we're very interested in the planning process of
21 BPA and the Seventh Plan as well. So I'll keep my
22 verbal comments very brief. We will be filing some
23 written comments later this week.

24 However, as an overall comment, we'd just
25 like to express our appreciation of the large amount

1 of work that the Council members and the staff has
2 taken to complete the Plan and to bring to this
3 current stage. And in addition to that, as far as
4 the portfolio going forward, we are generally
5 supportive of using energy efficiency and demand
6 response as the resource to meet the region's demand
7 going forward.

8 Now, over recent years, our customers have
9 invested heavily in energy efficiency and so we look
10 forward to doing so more in the future as the
11 current Plan is unveiled and carried through. And
12 then on -- I guess the issue of demand response, I
13 just would like to express our sort of customers --
14 just the large interest from industrial customers is
15 pursuing demand response. In each of our board
16 meetings, I seem to get a question on, you know,
17 what sort of demand response opportunities are out
18 there. So as we develop those programs, we
19 encourage folks to think about the industrial loads
20 as well.

21 As far as technical issues go, I think I'd
22 just echo two things that Mr. Dean had pointed out
23 earlier. First, we -- we would also like to see
24 more of a range in the energy efficiency targets in
25 the Plan. And then the second issue is that we

1 would like to see the utilities -- we would like to
2 have them have greater discretion in the cost
3 effectiveness measurements that they employ to
4 evaluate energy efficiency. So those are my
5 comments. I appreciate the chance to be here today
6 and I'll turn over the mic.

7 **COUNCILMAN LORENZEN:** Thank you.

8 Cameron.

9 **MR. YOURKOWSKI:** Good evening, thank you
10 for the opportunity to comment and being here this
11 evening. My name is Cameron Yourkowski. I'm here on
12 behalf of Renewable Northwest. We're a nonprofit
13 advocacy group, coalition of diverse interests,
14 supporting the development of responsible renewable
15 energy development in the four northwest states. I
16 also did submit written comments today prior to
17 coming here this evening, on your website. I'd
18 appreciate it if you'd take a look at those. They're
19 about four pages and they go into more detail than I
20 am this evening.

21 I want to start by recognizing all the
22 hard work that has gone into the release of the
23 Draft Plan, both by the Council, staff and you, the
24 members. It's a massive undertaking and there's
25 much to support in the Draft Plan.

1 Sticking with the positive side, the Draft
2 Plan, once again, presents solid analysis on the
3 benefits of energy efficiency as identified cost-
4 effective supply and various energy efficiency
5 measures. We support this work. We support those
6 findings. In addition, the Council has done
7 excellent work identifying cost-effective demand
8 response resources, capable of providing various
9 types of capacity products. And as clean energy
10 advocates, we are especially excited about this new
11 development, using a clean source of capacity out
12 there in the future. And we're very encouraged by
13 these findings and support -- support that work as
14 well.

15 And we are also pleased to see that for
16 the first time, certain renewable energy resources,
17 especially in Idaho and Montana, were identified as
18 the least-cost sources of energy generation and
19 beyond energy efficiency. And this was a result of
20 the GRAC, Generating Resource Advisory Committee,
21 and the good work of that staff. So we appreciate
22 the efforts of that committee as well.

23 Switching to some of our concerns with the
24 Draft Plan, I want to call to your attention what we
25 see as a shortcoming on the analysis of renewables

1 and their ability to contribute to the capacity
2 needs of the system. We understand the Council
3 identifies with the need for capacity to meet the
4 winter peak. And that this is an important focus of
5 the model, however, the Council's current modeling
6 approach assumes renewable resources are not able to
7 contribute in a meaningful manner to meet peak
8 requirements of the system. And this drives a lot
9 of results of the model.

10 So even though the Council Draft Plan does
11 find that the price of some renewables is least
12 cost, the model limits renewable because they're not
13 modeled in a way that allows them to contribute even
14 collectively as a package of resources to meeting
15 the peak requirements, capacity requirements of the
16 system.

17 So we are concerned about continuing along
18 this approach for modeling renewables in the future
19 considering the carbon reduction goals of both
20 Washington, Oregon. And what the science tells us
21 is necessary to mitigate worst impacts, climate
22 change, we may think it's necessary to start
23 thinking ahead and modeling how we can run the grid
24 and meet the energy and the capacity needs of the
25 system with the least amount of carbon emissions,

1 including a large percentage of new renewable
2 resources.

3 This is why we are asking the Council to
4 include an action item in the final plan to
5 facilitate what we call low-carbon grid study. This
6 would evaluate how renewables and other clean energy
7 technologies can work together to meet both the
8 energy and the capacity needs of the system. Doing
9 so would be consistent with the policy goals in
10 Oregon and Washington, and also the guidance
11 provided by Northwest Power Act to prioritize cost-
12 effective renewables.

13 Like I said earlier, the Draft Plan does
14 find certain renewables are a cost-effective energy
15 resource. Now we need to prioritize finding out --
16 finding ways to help them meet the capacity needs of
17 the system as well as contribute to the capacity
18 needs of the system.

19 So that's our first ask, to include an
20 action item to facilitate a low-carbon grid study
21 for the northwest. Details on what that study would
22 look like and how to move that forward are in our
23 written comments. We please ask that you look at
24 those.

25 Our second comment is related to the Draft

1 Plan -- to what the Draft Plan refers to as a 35
2 percent RPS scenario that was highlighted in the
3 presentation earlier this evening. The work done on
4 this scenario, we feel, is less rigorous than other
5 scenarios in the Draft Plan, and we think it should
6 not be given the same weight as some of the
7 Council's more robust analysis. Our written
8 comments go into detail of some of the underlying
9 assumptions that drive this analysis.

10 Briefly, the main problem with this
11 scenario is that it assumes that doubling of the
12 amount of the new renewables on the system today
13 without retiring any existing generation coal or
14 existing natural gas plants. And predictably, that
15 results in very costly overbuild of the system and a
16 large amount of exports of energy out of this
17 region. We build more energy than the region
18 actually needs.

19 So this scenario does not accurately
20 represent the design and the flexibility that is
21 built into existing RPS policies and is anticipated
22 in the new RPS discussions going forward. And so we
23 ask the Council rename this scenario to the high-
24 export scenario to reflect the overbuild of
25 resources and associated exports. And to include a

1 clear and up-front description of all the
2 assumptions underlying the scenario and any
3 narrative description of the final plan. Again,
4 there's more detail on all the assumptions that we
5 would like to see highlighted in the narrative and
6 final Plan in our written comments.

7 So in closing, I want to thank the Council
8 again, and staff, for all their hard work on the
9 Draft Plan and for the opportunity to comment this
10 evening. There's much to be pleased with in the
11 Draft Plan but in order for the renewables community
12 to support it, we really want to see a commitment to
13 dig into the renewable energy modeling issues, an
14 action plan for a low-carbon grid study, and also
15 appropriately describing the 35 percent RPS scenario
16 in the final plan. Thank you.

17 **COUNCILMAN LORENZEN:** Thank you.

18 **MS. FISHER-WILLIAMS:** Good evening,
19 members of the Council. Bear with me as I construct
20 my comments. I just decided walking in that I would
21 address you. I've been interested in energy for
22 four decades and I'm ecstatic to see conservation in
23 the heading of a future power plan for the BPA.
24 Because I can remember working on League of Women
25 Voter's energy panels and conservation efficiency

1 was laughed out of the room.

2 And when I was on the city council and we
3 attempted to get the builders to go to two-by-six
4 construction and higher R values for insulation, we
5 had a devil of a time in the '70s because the
6 incentives were all wrong. The builders wanted to
7 keep the costs low and they didn't care about the
8 build because they weren't going to live there. And
9 especially on rentals, it was an uphill battle and I
10 lost many.

11 Those of us who are old enough to remember
12 the Woods debacle, understand just how important
13 underlying assumptions are because they will drive
14 policy decisions and investments, private and
15 public. And so I'm here to ask you to lean a little
16 bit more into the future. Times are changing.
17 Where it may have taken four decades to get
18 conservation to the heading of the BPA plan, but if
19 you are reading the papers and listening to radio,
20 you know there's a building momentum towards clean,
21 renewable energy. There's no doubt about it.

22 And when our Mayor introduced the
23 resolution to oppose infrastructure expansion for
24 carbon industries, which passed unanimously, he said
25 he was reminded of being fishing with his dad, and

1 the drift boat would sort of accelerate and they
2 could hear the rapids in the -- on the horizon.
3 They couldn't quite see around the bend, but they
4 could feel the water moving faster. That's where we
5 are. We're moving faster.

6 Everybody knows about climate change.
7 There may be folks who hate it and will avoid it and
8 deny it, but they know about it. It's on the table.
9 So I want associate myself with the former speaker's
10 comments about a low-carbon future scenario study.
11 This is where we have to head as a region and if the
12 BPA sets the tone, the states in the northwest can't
13 help but notice. And as they construct their plans,
14 they will align themselves with the tone that you
15 have set, which is critical because many of us want
16 to see the coal plants shut down.

17 I am unhappily a customer of PacifiCorp
18 which has 60 percent of it's generating fuel in
19 coal. And they have not been amenable to listening
20 to the future. And I bet you that they're going to
21 send their attorneys out to fight the clean power
22 standards to delay implementation rather than face
23 the music. It makes no sense to pour money into
24 yesterday's technology. We're moving forward. This
25 is what America has always been proud about and

1 known for.

2 So, in conclusion, I want to get a chuckle
3 out of you and that is a quote from somebody I don't
4 remember, but I've always liked it. It goes like
5 this: If you don't aim for the moon you aren't ever
6 going to clear the top of the trees.

7 **COUNCILMAN LORENZEN:** That's very good.

8 Thank you.

9 Art.

10 **MR. LEWELLEN:** I came here tonight,
11 Council, to testify on my experience in the home
12 weatherization program that was started in the
13 Carter era, home weatherization tax credit program
14 between 1980 and 1992. And found that homes today
15 are both more energy efficient, but more
16 comfortable, cleaner, healthier and have higher
17 value, last longer. A value-added use of an
18 investment to make homes not just more energy
19 efficient, but more than just that.

20 In '92, I transitioned that effort into
21 transportation energy conservation and
22 transportation, and I became and advocate for light
23 rail and the streetcar here in town, better transit.
24 But transportation planning also includes all forms
25 of travel and I see the future -- I see an industry

1 in the future taking off one day that our grids, our
2 regional utility grids, should incorporate every
3 household being able to have an electrical vehicle
4 in the garage.

5 My preference is for the plug-in hybrid,
6 that smaller battery pack that can serve as many as
7 15 times more households than the all-battery
8 electrics, like the Teslas, it's a much smaller
9 battery. And I believe that smaller battery pack is
10 a better match with a rooftop solar, photovoltaic
11 solar systems that in an emergency would act as an
12 emergency battery power system.

13 So a household that invests in this one is
14 getting more than just a very efficient, fuel
15 efficient car. They're getting an emergent
16 lifesaving system. And I believe that the grid
17 would be more resilient by adding this type of power
18 system to it overall.

19 So I'm making that statement. That's
20 really the main statement I did want to make about
21 what I see as a future solution addressing the
22 problems that we've had overall fuel energy
23 consumption, household-wise. The amount of travel
24 we do. Household gains the means to monitor and
25 more closely monitor and reduce the overall

1 consumption both from the house and for driving.
2 And I just -- I'm just see a huge industry growth in
3 that sense which I'm trying to explain as best I
4 can. Okay. So that's really my main point I wanted
5 to make for you tonight. Thank you. Thank you very
6 much.

7 **COUNCILMAN LORENZEN:** Thank you, folks,
8 for your testimony.

9 Dan James, Wendy Gerlitz, Tracy Farwell
10 and Rick Williams, please.

11 **MR. JAMES:** Good morning -- good
12 afternoon, members of the Council. I'm Dan James
13 with PNGC Power. Thank you for giving us this
14 opportunity to testify to comment on the Council's
15 Seventh Plan. We do appreciate the development of
16 the Plan. It was accessible and transparent, and as
17 others have said, the Council members and staff did
18 an outstanding job of reaching out to a cross sector
19 of stakeholders.

20 We do support the Council's acknowledgment
21 of the region's success in meeting the energy
22 conservation targets in the Sixth Plan. We, like
23 others, believe that the Council should establish a
24 range for new conservation targets rather than a
25 specific number because a range would be more

1 appropriate given the difficulty in forecasting
2 future energy conservation savings.

3 We support the forecast for growth and
4 demand response programs. A number of our members
5 are deploying those programs or are testing them.
6 However, it may have been overly optimistic to
7 predict 700 megawatts of demand response that will
8 soon be built. We also believe that the Council may
9 have actually under-estimated the need for more
10 natural gas fire generation to meet peak demand
11 after the Boardman and Centralia plants are retired.

12 Others have said, and we agree, that the
13 Council should update its forecast for natural gas
14 prices because, in fact, the current gas price
15 forecast in our view may be too high.

16 And finally, we believe that the Council
17 should resist efforts of those who advocate for a
18 reduction in renewable hydropower production. Thank
19 you.

20 **COUNCILMAN LORENZEN:** Wendy.

21 **MS. GERLITZ:** Good evening. I'm Wendy
22 Gerlitz. I'm the Policy Director with the Northwest
23 Energy Coalition. We are a diverse, member-driven,
24 nonprofit organization that works to promote clean
25 and affordable energy throughout the northwest. The

1 -- we have worked extensively with the Council on
2 the development of the Seventh Plan, and so I want
3 to start out as a number of people having
4 acknowledged here tonight that the Council staff and
5 Council members, we think you've done an excellent
6 job with both the process and content overall of the
7 Plan.

8 But in particular, I want to speak to the
9 process. It's been a very open and transparent
10 process this time around. We have felt very
11 included, but also very knowledgeable about what was
12 going on. The staff really kept everyone updated on
13 how the model was working, what assumptions were
14 going in, and provided opportunity for input into
15 those assumptions.

16 And I really feel that that process has
17 led to a very good outcome for the Plan, with a lot
18 of people participating and really providing input
19 that strengthened both the assumption into the Plan
20 and the analysis. So I wanted to start out with
21 some nice things about the process because I know
22 people have worked very hard to get there, so that's
23 recognized, I think.

24 We also want to support the energy
25 efficiency analysis in the Plan. It's a huge

1 undertaking we know. We don't -- we have been diving
2 into the spreadsheets and all of the measure-by-
3 measure assumptions that go into the Plan. And it's
4 a very strong analysis and it really -- it makes it
5 abundantly clear that energy efficiency continues to
6 be our least-cost, least-risk resource, saving
7 customer's money and also reducing greenhouse gases.
8 So we are going to urge the Council to stick with
9 the target, not go with the range.

10 I am going to agree with PTC that's a lot
11 of uncertainty in those forecasts. However, I'm
12 also going to point out that historically over the
13 course of the last many plans, the Council has
14 consistently underestimated the amount of resources,
15 energy-efficiency resources available, every single
16 time they have underestimated. And we would say
17 that's probably due to the known and available
18 construction that you use in the measure-by-measure
19 approach to adding up known and available measures
20 right now.

21 Over the next six, 10, 20 years, it's very
22 difficult to predict what resources and energy
23 efficiency are going to be available and at what
24 price. And so we would say that the conservative
25 estimates that go into that assumption really speak

1 to, it's okay to set the target. We've exceeded it
2 every time and we have no doubt that the region will
3 exceed it again. So ask for what you want and
4 you'll get it and more.

5 So the second thing we also want to urge -
6 - or thank you for, actually, is the detailed
7 recommendations that focus on ensuring low-income
8 families and other hard-to-reach populations get
9 their fair share of energy efficiency services.
10 This is something that the coalition has been
11 working very hard on with our low-income, advocacy
12 community to approve services to low-income
13 customers.

14 Those customers, people living in
15 manufactured housing, people living in multi-family
16 buildings, as well as rural communities and small
17 businesses, they all pay for these efficiency
18 programs and it's only fair that they should be able
19 to benefit from these programs as well. And we have
20 more work to do in the region on making sure that
21 these -- these segments of the population really can
22 benefit from energy efficiency. So I really
23 appreciate the detailed recommendations that are in
24 the Plan with regard to that and strongly support
25 those.

1 We also want to strongly support the
2 demand response programs. I'm going to echo a
3 number of comments tonight that ask for a goal or a
4 target for demand response. We think it's important
5 to give the region a number to shoot for. The
6 demand response in the Plan really shows that this
7 is a low, low cost resource. It's going to save us
8 a lot of money if we can acquire those demand-
9 response resources. And it's important to give the
10 region some kind of a goal, even if it is a range of
11 700 to 1100 megawatts, in the Plan, we think that's
12 important.

13 I think -- I think that Ken Nichols spoke
14 very eloquently to the reasons for that. And the --
15 the resource calls for natural gas that we see in
16 the utility IRPs are just extraordinary, and far
17 above and beyond anything -- any amounts that the
18 Plan actually says that we need in the region. And
19 so the emphasis on demand response from this Council
20 I think is going to be particularly important in the
21 coming years.

22 Now, I want to just talk about a couple of
23 areas for improvement. I'm probably talking too
24 long, but one is I want to echo Cameron's comments
25 on the improvements that are needed in the area of

1 renewables analysis. We have talked with a number
2 of you about this, but we really feel the model
3 undervalues renewable resources and their ability to
4 contribute to system needs. I was in the Power
5 Committee this morning. I heard that you're making
6 a few updates to the model in this regard. We think
7 that those are going to be important improvements,
8 but we don't think that they're really sufficient.
9 We think there is a number of other things that need
10 to be improved in the renewables analysis.

11 And so, specifically, I want to talk for a
12 minute about the 35 percent renewable portfolio
13 standard scenario. Frankly, we think this is the
14 weakest element of the Draft Plan. The scenario,
15 frankly, doesn't really make any sense to us. Build
16 a whole bunch of renewables, but leaves the coal in
17 the system. Builds natural gas, significantly
18 overloading the system. And so I appreciate
19 Cameron's effort to rename the scenario.

20 I think that would be a good step. But I
21 also want to recommend that this was not a low-
22 carbon scenario in my mind. It doesn't really
23 reduce carbon emission and I'm not really sure what
24 it accomplishes. And it's discussed a lot in the
25 climate change chapters in the Plan. And I'm going

1 to recommend taking the discussion of that scenario
2 out of those chapters. I think it's very confusing.
3 It's not laid out well what the scenario does and
4 doesn't do, and I don't see any reason for it in
5 those chapters. I think it confuses the issue. So
6 that's another recommendation that I'd like to lay
7 on the table.

8 And then finally, just on fish and
9 wildlife issues, I would like to note that as the
10 existing hydropower system is aging, the costs to
11 maintain the system are increasing. And we all know
12 that climate change is stressing out the salmon
13 stocks as well. And so we think it's really
14 important to adequately assess the costs and
15 benefits of the lower Snake River dams on the
16 Columbia River system. We think it's important to
17 look at the power system costs and benefits and we
18 think the Council is the right body to do that. It
19 wasn't done within the context of the Seventh Plan.

20 I think that's actually okay, because I
21 think it's going to be an undertaking to get the
22 accurate costs of maintaining those dams, and to
23 understand how they really affect the power system.
24 I mean, there's a lot of questions that we have
25 about whether they really contribute to the capacity

1 of the system. I ask that, you know, for a -- a
2 back-of-the-envelope analysis that we did and we
3 weren't really able to get good answers. So we
4 think it's an important analysis and we'd like to
5 see a return to that as soon as the Seventh Plan is
6 completed and do that analysis justice. We're going
7 to be submitting much more extensive comments and so
8 I'll conclude with that. Thank you.

9 **COUNCILMAN LORENZEN:** Wendy, thank you.
10 Tracy.

11 **MR. FARWELL:** Thank you very much. I'm
12 happy to concur with the same deference that
13 everyone else has expressed to the Chair and to the
14 Council. Being brought in at the draft phase, this
15 is really important. I'd like to offer some
16 information that perhaps wasn't anticipated because
17 it's impossible, because it's only recent data
18 coming form California.

19 I'm Tracy Farwell, and for 45 years of
20 engineering I've made a good living solving problems
21 for other folks. When you're an engineer, you
22 really better know your science if you expect to
23 keep your job. So I'm coming at this from a science
24 and engineering perspective. And regrettably, it
25 looks to me like the Seventh Northwest Conservation

1 Electric Power Plan is broken. Not through an
2 inefficiency on your part. It's like any battle
3 plan. After the first shot is fired and reality sets
4 in, the plan is off the table. And the reason is
5 that in the executive summary it states that, "New
6 gas-fired generation may be required."

7 I'd like to suggest you should hope not.
8 The reason I'm saying that is there's a very poorly
9 reported natural accident in Los Angeles that's
10 currently worse than the Deepwater Horizon blowout
11 in the Gulf. We're not hearing about it in Oregon.
12 We're not hearing about it in Washington. The Gulf
13 accident only ruined fisheries and a coastline for a
14 decade.

15 The methane storage well that's leaking in
16 the Aliso Canyon, the one that nobody knows about,
17 has been dumping hellacious quantities of natural
18 gas methane for two months now. In my two minutes,
19 I can't tell you the cause nor the solution because
20 the gas company doesn't know and they're not telling
21 us. And they have only a theory about fixing it and
22 they're guessing an experimental fix will take maybe
23 three or four months. So we're up to six months for
24 daylight on this. And not only that, they don't
25 know if it will work at that time or if ever.

1 And, by the way, I'm sure you already
2 know, methane is 80 times worse for than climate
3 than CO2. You should know, but perhaps you don't,
4 that this accident is dumping 25 percent more
5 methane into your air than all the known industrial
6 leaks estimated by industry in California. The CARB
7 described this ongoing accident as dumping 100,000
8 pounds of methane every hour.

9 That's not my number. That's not an
10 industry number. That's regulators who are
11 responsible to rate payers and tax payers. If this
12 methane is not set alight, it represents 80 times
13 100,000 pounds of -- in terms of CO2. So you take
14 your 100,000 pounds, you multiply it by 80, you get
15 eight -- you get 8 million tons equivalent of CO2
16 per hour.

17 If the cost of carbon to society is
18 considered and I don't know whether you've done that
19 in your Power Plan or not, the typical number is \$60
20 dollars a ton. And if you're looking at a hundred -
21 - at these uncontainable escape rates at \$60 a ton,
22 you're looking at \$133,000 an hour, for the
23 estimated six months that they say might be needed
24 to plug the well if it works.

25 If the gas company were paying the cost

1 for their accident for six months at this rate,
2 you're looking at \$575 billion. It's just what you
3 get on your calculator. If they had to pay that,
4 they would quit and go home. Instead our grandkids
5 are getting the bill.

6 This is like a train wreck where the train
7 keeps coming and I don't know why this is the only
8 one. Did we see this one coming? No. Do we know
9 what's around the corner? No. In my view so far
10 we've been lucky. In my engineering career, if I
11 ever reported any technical incompetence like this
12 to my supervision, my paycheck would soon disappear.

13 I will summarize my message to the
14 Northwest Power and Conservation Council about what
15 you are getting natural gas industry proposals, a
16 couple of which we've heard this evening, summarized
17 in two little words. I'm sorry if this offends
18 anybody, but from the evidence I've seen in the last
19 week, this is looking like junk science.

20 Northwest Natural Gas, serving customers
21 in Portland, please explain the real natural gas
22 home economics to your rate payers. In my view, I
23 believe that any suggestion of reliance on gas
24 generating resources should really be eliminated
25 from your planning, for the simple reason that

1 whatever cost -- whatever cost-effective analysis
2 you performed, the cost just went hellaciously up.
3 Thank you for your time.

4 **COUNCILMAN LORENZEN:** Thank you.
5 Rick.

6 **MR. WILLIAMS:** Good evening, Council
7 members. My name is Rick Williams. I live in rural
8 Oregon City. The topic I'd like to discuss tonight
9 is disaster resilient power. I'm here tonight as a
10 Portland State University graduate student in
11 engineering policy and management. As a frame of
12 reference and introduction, I'm a civil construction
13 engineer and ocean engineer from Oregon State
14 University. Retired nuclear submarine captain and
15 an engineering consultant in systems engineering and
16 ocean engineering.

17 I'd like to encourage the Council to
18 consider disaster resilience in the Seventh Plan.
19 The background for that is during the two term smart
20 grid class that Professor Hammarlund led, we studied
21 the energy policy resources, utilities, technologies
22 including demand response, demand site management
23 and renewables. We also considered the predicted
24 Cascadia event, magnitude nine earthquake -- I was
25 watching the light fixture move over there,

1 distractedly -- which is predicted in the next 50
2 years. And that disaster is expected to induce
3 extended outages of the bulk electric grid.

4 We're not talking about neighborhood
5 grids, we're talking about the bulk electric grid,
6 not to mention the fuel hub in North Portland
7 liquefying, so fuel supplies would be scarce. And
8 also that the solar photovoltaic resource in the
9 state, 84 megawatts uses the older inverter standard
10 of anti-islanding so most of that 84 megawatts will
11 not work if the grid reference is down. Or if you
12 have a back-up generator, when your fuel is
13 exhausted, the solar panels would be there but they
14 will not provide power.

15 I searched the Sixth Plan for the words
16 "Cascadia, earthquake, disaster and resilience," and
17 found that they were not mentioned. I studied the -
18 - or I searched the Draft of the Seventh Plan for
19 the same words and found earthquake mentioned once
20 and historical reference, referring to Japan and the
21 Trojan Nuclear Plant where I was a construction
22 engineer. So it appears to me that disaster
23 resilience has not been brought to your attention as
24 yet. So that's my purpose here tonight.

25 I'd encourage the Council to address

1 disaster resilience along with the energy efficiency
2 and demand response that is in the Draft Seventh
3 Plan. The business model and ancillary services
4 required to implement demand response can also serve
5 disaster resilience if it's addressed at the senior
6 level that you represent and if the systems approach
7 is used. We need to consider least cost, integrated
8 resource, but also what is the value of power in a
9 disaster.

10 Voluntary reductions require knowledgeable
11 consumers, knowledgeable consumers who need to be
12 informed about the threat of the Cascadia event as
13 well as the situation with their solar arrays if
14 they have them. The technologies, demand response
15 controls, distributed generation, renewables,
16 storage and standby dispatchable generation fit into
17 a systems approach for disaster-resilient power.

18 We held a disaster resilience solar PV
19 workshop after the class that some of you were aware
20 of in smart grid. 42 members across multiple
21 disciplines including the director of the Oregon
22 Department of Energy, deputy director of Oregon
23 Emergency Management, and we discussed the
24 situation, the problem statement and addressed
25 alternatives, which I have a paper, and I'll submit

1 to the Council.

2 The residential use case was the catalyst
3 for the discussion. And although that was
4 interesting, particularly for families with medical
5 special needs who need electricity for assistive
6 devices, and also for the rural use case where the
7 community centers are distant, it turned out that
8 the community centers caught the interest of the
9 workshop members. Because that's where the
10 displaced citizens can be served best.

11 What really was the outcome of the these
12 42 people that I had not anticipated as the -- as
13 the workshop leader, was a concept called disaster
14 resilient community micro-grids. Recognizing that
15 schools and colleges are evacuation sites. That
16 senior centers are used to serving people. Service
17 halls, grange halls, churches are used to
18 collections of people, libraries, and then critical
19 infrastructure. I'm an emergency responder and when
20 I was a third fleet command and control officer, I
21 did the civil operations plan for U.S. Third Fleet,
22 that we will be using in the event of a Cascadia
23 event.

24 You've got to serve the displaced
25 citizens. And, if possible, if you can encourage

1 with a small amount of disaster resilient power
2 citizens to shelter and place, you have less
3 displaced or refugees for the emergency managers to
4 deal with. So there is a public benefit case for
5 disaster resilient power. Along with the cost,
6 again, please consider the value of power in a
7 crisis situation.

8 In summary, I'd like to encourage the
9 Council to address disaster resilience in your
10 Seventh Plan and encourage BPA, the utilities, and
11 the public utility commissions to consider that in
12 the rate cases and ancillary services so we can
13 approach it in a business-like manner as opposed to
14 hoping, which is not an engineering method. Thank
15 you.

16 **COUNCILMAN LORENZEN:** Thank you very much.

17 Next group, Jeff Hammarlund, Johnny
18 Casana. Sorry, I could not read the next name but it
19 has a couple of Z's in it and you probably know --
20 it's Power Past Coal, representing Power Past Coal,
21 and Kris Nelson, please.

22 **MS. MEDALION:** What's the name you can't
23 pronounce?

24 **COUNCILMAN LORENZEN:** It's --

25 **MS. MEDALION:** Is it T-a-i-z-z?

1 COUNCILMAN LORENZEN: What is it?

2 MS. MEDALION: Is it T-a-i-z-z?

3 COUNCILMAN LORENZEN: Yes, that is it.

4 MS. MEDALION: Okay. All right.

5 COUNCILMAN LORENZEN: It's not pronouncing
6 it, I'm having difficulty reading it.

7 MS. MEDALION: I'm used to that. No
8 worries.

9 COUNCILMAN LORENZEN: I'm having
10 difficulty reading it. I'm sorry. Jeff?

11 PROFESSOR HAMMARLUND: Yes.

12 COUNCILMAN LORENZEN: Go ahead.

13 PROFESSOR HAMMARLUND: Well, we're getting
14 into 8:15, things are moving along here. But I
15 wanted to -- I'm going to start with an admission.
16 I was sitting there next to my friend Mark over
17 there and I have an admission to make. I think I am
18 a Council junkie. Now, there's no AA program -- AA
19 program or Al-Anon program that I'm aware of for
20 this. And so probably that's just as well because I
21 like being a Council junkie.

22 I'm realizing this is the Seventh Power
23 Plan -- I have testified on six of those seven power
24 plans. First one, I did not testify because I was a
25 senior manager at Southern California Edison, so I

1 was unable to, but it's a fascinating process and
2 I'm glad to be here once again. This may be my last
3 time. I'm planning to retire at the end of this
4 academic year, but you never know.

5 The other reason I think I'm a Council
6 junkie is I had the great honor, when I was a young
7 man, of working for the U.S. Senate Energy Natural
8 Resources Committee, when the committee was
9 developing the Northwest Power Act. That was, in
10 fact, my PhD dissertation and they hired me to work
11 on their staff. And Senator Jackson, the Chairman,
12 basically said, your job, Jeff, is to make sure the
13 northwest members of our committee are taken care of
14 in this legislation.

15 So I've always been a -- let's call it a
16 rooster of the Council when you guys do a great job.
17 I'm in there cheering. When you mess up every once
18 in a while, I wince just a little bit, but I feel a
19 sense of pride that I got to work on a legislation.
20 By the way, this legislation, Senator Hatfield has
21 told me several times was his -- in his opinion, one
22 of his crowning achievements was the work he did on
23 the Power Act, including creation of the Northwest
24 Power Conservation Council and defining energy
25 efficiency as a resource. Very important.

1 Well, so since -- I'll be honest with you,
2 I think this Plan does have some excellent features
3 and I could spend some time talking about them, but
4 I think it's better use of my little bit of time I
5 have left here to talk about the things that I think
6 need to be improved.

7 It does a remarkable job on energy
8 efficiency, of course, as always, Tom Eckman is one
9 of my heroes. Recognizing demand response to a much
10 greater extent than before, but my opinion is
11 there's still a lot of work to do before this Plan
12 reaches its potential. And I'm a little concerned,
13 I think we may not be able to get there, everything
14 we want in this Plan, but I think we need to at
15 least tee up for the next one.

16 And why do I say this? Well, first of
17 all, the smart grid which was discussed in quite a
18 bit of detail, it had a whole appendix associated
19 with it in the previous plans, the Sixth Plan, it's
20 virtually ignored in this Plan. There's a few
21 comments here and there about the smart grid. I've
22 been teaching courses on the northwest energy policy
23 at Portland State University for 22 years. The last
24 seven years I've been teaching courses on the smart
25 grid, demand response, energy storage, and

1 distributed generation and those sorts of things,
2 and I was disappointed not to see much about the
3 smart grid.

4 The smart grid in my opinion can boost a
5 lot of demand response, DSM efforts, in ways that
6 make them much more effective, more powerful and
7 more efficient. And the careful deployment of the
8 smart grid technology is going to help the northwest
9 power system achieve a whole host of benefits. I
10 won't read them now but they're going to be in the
11 testimony I send you, but a whole bunch of benefits.
12 And I think that's virtually ignored and I think
13 that's unfortunate.

14 Secondly, the Plan does a very good job of
15 introducing demand responses role in reducing both
16 winter and summer peak. And it also briefly
17 introduces some of the other benefits that demand
18 response can offer. But then inexplicably to me, it
19 almost ignores them throughout the rest of the Plan.
20 The Plan in my opinion needs a much broader
21 designation of demand response, such as the one that
22 FERC has developed. One that does not relegate
23 demand response just in times when the power system
24 is under stress, as the Council's definition does.

25 We need a definition in my opinion that

1 anticipates coordinated actions between both power
2 systems and distributed resources that can provide
3 enhanced power systems flexibility and grid
4 stability, that include new ways to addressing
5 additional ancillary services, such as contingency
6 reserves, regulation and load following.

7 I forgot to mention, we had a public forum
8 at the end of our smart grid two term class and I
9 was so honored that Council Member Smith came all
10 the way from Montana, along with one of his staff
11 members, and Bill Bradbury participated by phone
12 from three airports, an amazing, amazing job. But
13 that was -- those are the sorts of things that we
14 were exploring, as you recall, Council members, in
15 that course.

16 We need a definition of demand response, I
17 think, that integrates the -- that looks at the
18 integration and applies the full value of
19 intermittent, renewable resources, economically and
20 efficiently. I think that was one of the points
21 that Cameron made. And we -- we need a definition
22 of demand response that offers a more effective and
23 politically acceptable ways to respond to future
24 oversupply events. Smart Grid Northwest has
25 proposed what I think is a very good definition in

1 their comments, and I encourage you to take a look
2 at that.

3 Now -- well, it may be true that the
4 entire region may not be ready for price-responsive
5 demand response. There was a time when the region
6 really wasn't ready for energy efficiency. I was
7 working for -- I was Senior Policy Analyst at the
8 Public Power Council at that time. I testified on
9 behalf of PPC about that. But you know what, the
10 Council said, you know, we need energy efficiency.

11 Actually, it's right there in the Act,
12 it's number one, and we are going to go out and get
13 it. The region -- and it gave the region the kind
14 of push it needed to take on energy efficiency,
15 frankly, with some resistance from the utilities,
16 but most of the utilities have come around and I
17 think that's a great thing.

18 I am hoping that the same sort of thing
19 can happen here with demand response. When we've
20 looked at the energy efficiency programs, the model
21 conservation standards and so on, we developed, and
22 Council played a very key role in this. Early
23 adoptive programs, various programs to test various
24 approaches, to encourage that to happen, and I'd
25 like to encourage Council and Bonneville and other

1 parties to take a look at those programs. Which
2 ones worked, what didn't work, what can be enhanced,
3 what can we borrow from those, what lessons can we
4 learn.

5 Third, the renewable issue of -- Cameron
6 covered that and Wendy, so I won't go over that
7 again, the things to be addressed capacity issue,
8 renewables.

9 Fourth, until recently the Council and the
10 region, very correctly, seemed to interpret the
11 Act's focus on power systems reliability to meet
12 adequacy of generation. Right. The Draft Plan
13 correctly has concerns about peak demand to that
14 equation. But the scope of the power system
15 reliability in my opinion needs to be expanded even
16 further. The Council and the region need to explore
17 how distributed generation, energy storage, micro-
18 grids, data platforms and other DSM tools can help
19 address grid and power system resiliency in the
20 event of a natural or human-caused disaster.

21 Rick Williams' comments about the 9.0
22 earthquake is a great example. But, you know, we
23 could even have terrorist attacks and other things
24 around here too. We need to look at resiliency in
25 the power system as one of the key parts of the

1 power planning process. In my opinion, to ignore
2 what we know now about the potential for a major
3 earthquake and the likely implications is simply
4 irresponsible. Disaster planning and power system
5 including resiliency need to be addressed in the
6 Plan and we can't wait until the eighth plan to do
7 that.

8 Finally, the electric utility industry is
9 going through a period of momentous change. We read
10 about this all the time. The utility of the future,
11 et cetera, et cetera. The problem is none of us
12 know when that change is going to be. And it's a
13 very difficult time for Council staff or the Council
14 members to come up with a plan that assumes much of
15 anything about the future 20 years down the road.
16 And yet that's your charge. That is your charge and
17 in my opinion, there could be a lot more work.

18 Maybe it all has to be in the next plan
19 and looking up multiple scenarios that are very
20 distinctly different, because I don't think this
21 Plan yet has -- is reflecting all of the interesting
22 thinking about the utility of the future that's out
23 there. It's -- it's -- in my opinion, it's still
24 seeped pretty much what I saw in the Sixth Plan and
25 I think the Eighth Plan and the Ninth Plan are going

1 to look so much different than the Seventh Plan.

2 I expect -- I would encourage Council
3 staff and members to at least think about some of
4 those, you know, possibilities out there with
5 storage and with electric vehicles, and so on,
6 beyond what you've done so far. That's enough.

7 **COUNCILMAN LORENZEN:** Thank you very much.
8 Johnny.

9 **MR. CASANA:** I love that passionate
10 testimony late in the evening. You guys have a lot
11 groupies? I'm sure you can get an autograph later.

12 **PROFESSOR HAMMARLUND:** Can I get an
13 autograph?

14 **MR. CASANA:** Hi, my name is Johnny Casana.
15 I represent EDP Renewables. We're one of the
16 world's largest wind energy companies. We've been
17 in the northwest for about 15 years. We have a base
18 here in Portland. We have several hundred megawatts
19 of operating assets. And I'd like to echo, also,
20 some of the great work that we've seen. An immense
21 amount of work has gone into this Plan and a lot of
22 parts are done really well. Energy efficiency,
23 demand response, I think are great improvements on
24 what we've seen before and what allowed those
25 efforts.

1 I would also like to echo some of the
2 concerns we have about renewable energy assumptions
3 that went into the modeling. I believe that some of
4 them have been -- some of the key assumptions were
5 overly conservative in terms of what renewable
6 technology, modern technology can provide in terms
7 of reliability, capacity and even some of those peak
8 loads in the wintertime. And I'd like to speak a
9 little bit about the idea that Cameron from
10 Renewable Northwest raised about a low-carbon grid
11 study. There was a version of this idea.

12 It was executed in California about 18
13 months ago by the National Renewable Lab. I sat on
14 the steering committee for that effort and the
15 results of that were very influential for lawmakers
16 in California. The other Governor Brown cited it as
17 one of the key influences in his decision to pursue
18 50 percent RPS, that could be done cost effectively
19 and reliably, not through the heroic assumptions in
20 new technologies or some sort of black box of
21 something that it doesn't exist yet.

22 But through managing the technologies that
23 we have in a system that we have in -- towards
24 abundance rather than towards compliance. And this
25 was one of the key ideas of the low-carbon study was

1 flipping the script not from overlaying or sort of
2 layering on a little bit of renewables that's
3 variable and trying to squeeze it into the system
4 and still ask the rest of the system to operate
5 conventionally and do all of the work, even if it's
6 only 75 or 70 percent of the system.

7 But instead, as renewables move from the
8 edge of the system towards the middle, actually, ask
9 them to do the work of the system also and that
10 means providing capacity and providing the
11 flexibility in ways that look different than
12 conventional flexibility that's carbon intensive,
13 but matter greatly when what you're looking at is
14 not compliance, but cover reduction.

15 Because the source of your flexibility
16 affects the rest of the energy on the system and
17 there's ways that you can utilize your demand
18 response and energy efficiency, regional
19 coordination, flexible load with -- and ask for the
20 sorts of inertia and capacity and voltage drive that
21 you can get from wind turbines and solar panels with
22 the right kind of inverters that -- that modern
23 renewable technology can provide but is not asked
24 to.

25 And in that regard one of the things that

1 we would recommend is that for the final version of
2 the Seventh Plan, some of those assumptions about
3 the role that renewables can play in the system be
4 forward thinking rather than backward thinking.

5 We do think that there is some work that
6 can be done on tweaking the assumptions, and like
7 it's been mentioned earlier tonight, the assumptions
8 are the baseline for the rest of everything that
9 happens. And getting them right affects what you're
10 telling everyone what you think we can do. And we
11 think we can do more. Thank you.

12 **COUNCILMAN LORENZEN:** Very good. Thank
13 you. Next.

14 **MS. MEDALLION:** Hi, my name Taizz
15 Medalion. I live in north Portland overlooking Swan
16 Island. And thanks very much for taking comments on
17 the great work that Council is doing and will
18 hopefully continue to do. 30 years as a respiratory
19 therapist has made me aware of the terrible toll
20 that burning fossil fuels has taken on our health.
21 The health cost from the pit to the grid are often
22 disproportionately borne by the most vulnerable
23 among us. Since one-third of the energy in Oregon
24 comes from coal, it seems like the right time and
25 place to start transitioning from coal to clean

1 energy. We need policy solutions to fix this.

2 A nonpartisan survey found that 71 percent
3 of Oregonians support clean energy solutions.
4 Political will leads to economic response. 1,000
5 megawatts are waiting to come online and removing
6 coal from our electricity mix could open up room for
7 those job-creating, clean energy projects. There
8 are 5,000 long-term jobs Oregon created and DOE data
9 supports that even a fraction of Oregon solar and
10 wind resources could provide electricity for all
11 Oregonians with excess to sell to other states.

12 Transitioning from coal to clean energy
13 would improve our air quality, lead to local job
14 creation and protection of our life-sustaining
15 planet. Thanks very much.

16 **COUNCILMAN LORENZEN:** Thank you. Kris.

17 **MR. NELSON:** Thank you Chair and members
18 of the Council, staff. I am Kris Nelson. I'm
19 principal of the Phoenix Finance here in Portland,
20 and over the decades, I've been involved in
21 renewable energy consulting, development and
22 writing. And more recently, I've been involved in
23 assisting in the development of a few advanced
24 renewable energy technologies. So I'd like to
25 address a couple of points regarding that topic in

1 the Plan.

2 I applaud your comprehensive scope of the
3 Draft Plan and its inclusion of minor renewable
4 energy technologies, and specifically on the local
5 level. But I believe the Plan could be improved by
6 further discussion of the cost and benefits of an
7 under-utilized renewable technology in the region,
8 and that is namely anaerobic digestion.

9 And the reason I say this is because,
10 frankly, it's one of those sleeper technologies in
11 not only the northwest, but also, nationwide. As
12 you may know, the leaders of this technology in the
13 world are in Europe and it's only been recently that
14 some of this leading-edge technology has filtered
15 its way into the U.S., and just barely introduced
16 itself to the northwest.

17 So over the last approximately two and a
18 half years, I've been assisting in the development
19 of a company based in Boise that has patented
20 several aspects of advanced digestion technology. A
21 couple of the important features of this technology
22 is that, one, it is extremely efficient, and namely
23 it uses a three-stage process instead of a
24 conventional one- or two-stage process. And two, it
25 actually has a capacity to use carbon dioxide as a

1 source of fuel. So not only does it have carbon
2 dioxide offset benefits as a renewable energy
3 technology, but it also has capacity to incorporate
4 emissions of CO2 in its production.

5 So in light of this, I think it would be
6 warranted to explore based on a report that the
7 Climate Trust conducted two or three years ago on
8 the generating capacity of anaerobic digestion in
9 Oregon. And as I recall, it concluded that
10 approximately 12 megawatts of capacity would be
11 available in Oregon using, frankly, your
12 conventional anaerobic digestion technology.

13 However, with capacity of Oregon using an
14 advanced technology that could be increased, I
15 think, substantially. So if we were to just take a
16 back-of-the-envelope forecast and say, well, maybe
17 there would be a minimum of, you know, 50 megawatts
18 of renewable energy capacity available in the four
19 northwest states through additional anaerobic
20 digestion applications.

21 And so I think secondly, my main point
22 here tonight is that with this kind of realization
23 and in light of this capacity, I think that with the
24 carbon offset benefits of anaerobic digestion, that
25 reassessing the costs and benefits of maintaining

1 the four lower Snake dams would also be warranted.
2 Especially if this is considered in light of the
3 total mix.

4 So with that, thank you very much for your
5 hard and good work and listening here tonight. Keep
6 up the good work.

7 **COUNCILMAN LORENZEN:** Thank you, Kris.
8 Thanks everyone.

9 Last but not least, Bill Eddie. Is he
10 here? Bill, you get the final word.

11 **MR. EDDIE:** I appreciate the opportunity
12 to comment. I do want to echo -- introduce myself
13 first. Bill Eddie, I am the President of One Energy
14 Renewables. We're a renewable energy developer
15 focused on solar. Based here in the northwest, with
16 an office in Seattle and Portland. Growing fast in
17 our work around the country developing solar
18 projects. We have a project three megawatts, you'll
19 see on the way to the coast from here to Lincoln
20 City, just -- just now operating.

21 I want to echo the comments of Renewable
22 Northwest -- Cameron from Renewable Northwest and
23 Wendy from Northwest Energy Coalition. I appreciate
24 what the Council has done over all these years on
25 energy efficiency. Truly have been a thought leader

1 on energy efficiency around the country. And my
2 challenge is to become a thought leader on the
3 integration of renewables into a flexible, low-
4 carbon grid.

5 I really want to endorse the idea of the
6 Council's playing an active role in facilitating a
7 low-carbon grid study. It would be key to have in
8 this region where we're not -- we are at the moment
9 where we need to actively integrate renewables into
10 the grid on the same basis as other resources and
11 treat them like we treat all the other resources in
12 terms of their role in the future.

13 My particular comment on the Plan and some
14 of the analysis it underlies, it is -- some of it
15 happens, I see all around the country with utility
16 planning, which is an overestimation of cost and
17 underestimation of deployment of renewables. If you
18 were sitting here, which you may have been, five
19 years ago, would you have thought there would be
20 10,000 megawatts of solar in California? There are
21 10,000 megawatts of solar in California.

22 The current cost estimates in this Plan,
23 this Draft Plan for solar have a capital cost
24 estimate of \$2,400 per kilowatt AC for solar. If
25 someone bid that price into our project today, they

1 would come in last. That contractor would lose every
2 time. These prices for solar in the range \$500 to
3 \$1,000 per kilowatt AC are too high for today. Not
4 in 2020, not next year, today.

5 And it's a missed chance to be great, but
6 it's also a missed chance to do what's right for the
7 region, and right for the climate. So my challenge
8 is to get the renewables piece right, focus on it.
9 Actively put the Council's intellectual heft into a
10 low-carbon grid study. Again, I appreciate the
11 chance to speak. Thank you.

12 **COUNCILMAN LORENZEN:** Thank you very much.
13 It's always -- I don't quite know what will happen,
14 but if anyone who has not yet signed up wishes to
15 testify, you can sign up right now and do so. But -
16 - going once, twice, three times. So we're -- it's
17 too late.

18 And -- but thank you all for coming
19 tonight. We appreciate it very much. Your comments
20 are very helpful and will certainly be taken into
21 consideration. And have a good evening and safe
22 travels home.

23 **(Whereupon, hearing concluded at 8:37**
24 **p.m.)**

25

1 CERTIFICATE

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

8
9 I further certify that I am neither related
10 to counsel or 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 24th day of December, 2015.

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19 _____
20 Kimberly R. McLain
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