Department of Commerce

Washington State Electric Utility Resource Planning

2016 Report

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Report to the Legislature
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Acknowledgements

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Introduction

Background

Washington consumers and businesses depend on electric utilities to provide an essential basic service of electric power. These utilities vary greatly in size, geographic scope, history and governance, but share this common obligation for ensuring an adequate supply of an essential resource.

Washington law requires that each utility plan for the future by examining the projected amounts of electricity that will be required by customers in the coming decade, and identifying the power resources that will be used to meet those demands.[1] Each utility must prepare a report every two years and submit the result to the Department of Commerce. Commerce reviews the utility reports and submits a summary to the Legislature. This is the fifth report since the Legislature enacted the resource planning law in 2006.

Depending on their size and power sources, utilities submit either a "resource plan" (RP) or an "integrated resource plan" (IRP). The RP is a short-form report of load[2] resources and is primarily provided by utilities having only one or two suppliers of power resources (usually, the Bonneville Power Administration and, perhaps, market power). The IRP is more complex plan and must incorporate a number of specific requirements identified in statute. IRPs are generally required for utilities with 25,000 or more customers.

Purpose of this Report

Utilities develop resource plans to assess their individual load and resource situations. This report aggregates the individual reports in order to provide an assessment at the statewide level of whether utilities are planning for adequate supplies, and what resources are expected to meet any growth in electric power demand.

This report summarizes the electricity loads and resources reported by Washington utilities in their 2016 reports to Commerce. It compares them to estimated summaries from previous years. Resources proposed to meet load are categorized by generating fuel type and source type (such as contract or market). An imbalance of loads and resources may indicate either a resource surplus or deficit, and this will be identified.

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[1] Chapter 19.280 Revised Code of Washington, Electric Utility Resource Plans. http://app.leg.wa.gov/RCW/default.aspx?cite=19.280

[2] As used in the statute and this report, "load" means the amount of electric energy demanded by a utility's customers during a defined period.

The information collected for this report is limited to the identification of loads and resources and their associated aggregate quantities. It does not attempt to evaluate specific goals or outcomes for resource acquisition strategies used by utilities.

This report provides information on utilities' energy efficiency and renewable energy resources. It does not analyze issues related to the energy efficiency and renewable energy requirement of, or compliance with, the Energy Independence Act (RCW 19.285).

Results

The 2016 resource plans submitted to Commerce are summarized in Table 1 through Table 3 of this report.

The current round of utility resource plans indicates a continued reliance on energy conservation as the primary resource for balancing electricity supply and demand. The statewide aggregate growth in electricity demand is expected to be moderate and most of this growth will be offset through energy conservation programs operated by utilities. Several utilities project that their conservation programs will result in more electricity savings than the projected amount of demand growth. These utilities expect to experience negative growth in observed electric loads.

With the majority of load growth met by conservation programs, utilities are projecting little or no need to acquire additional generating supply resources.

Table 1: Washington State Projected Requirements and Resources - Energy (aMW)

	Base Year	Five Year Estimate	10 Year Estimate
Requirements			
Loads	10,104.6	10,880.7	11,581.8
Exports	456.0	489.6	58.1
Conservation Efficiency	-	528.4	946.5
Total Net Requirements	10,560.6	10,841.9	10,693.4
Resources			
Hydro	3,192.3	2,999.8	2,945.8
Wind	489.8	522.5	457.9
Other Renewables	52.9	98.0	97.2
Cogeneration	14.8	15.6	4.6
Natural Gas	1,795.8	1,955.6	1,910.3
Coal	974.1	1,037.3	962.2
Net Long Term Contracts	585.9	875.9	68.6
Net Short Term Contracts	(233.4)	10.2	14.8
Other Resources	69.0	74.4	75.6
Distributed Generation	0.9	3.0	5.6
Undecided	-	3.0	5.0
Market Purchase Non BPA	34.1	25.8	60.8
BPA Tier 1	1,258.9	1,230.8	1,234.5
BPA Tier 2	10.5	27.5	28.9
BPA	3,196.6	3,026.4	3,024.4
Imports	103.4	52.9	47.1
Total Resources	11,545.7	11,958.7	10,943.3
Load Resource Surplus	985.1	1,116.78	249.84

Table 2: Washington State Projected Requirements and Resources - Winter Capacity

(MW)

	Base Year	Five Year Estimate	10 Year Estimate
Loads	11,651.9	10,436.1	11,144.0
Exports	1,071.0	1,185.0	-
Demand Response	-	141.0	150.0
Conservation Efficiency	-	489.4	831.7
Total Net Requirements	12,722.9	10,990.7	10,162.3
Resources			
Hydro	3,825.9	3,574.9	3,612.8
Wind	111.7	110.1	102.1
Other Renewables	30.8	34.8	34.8
Cogeneration	13.0	11.0	-
Natural Gas	2,886.0	2,899.0	2,846.0
Coal	737.7	737.7	737.7
Net Long Term Contracts	496.0	1,345.3	35.3
Net Short Term Contracts	2,031.7	1,265.6	1,265.7
Other Resources	33.0	0.7	0.7
Distributed Generation	-	0.3	0.3
Undecided	-	-	-
Market Purchase Non BPA	-	-	-
BPA Tier 1	-	-	-
BPA Tier 2	-	-	-
BPA	3,279.6	1,797.1	1,796.8
Imports	308.0	308.0	308.0
Total Resources	13,753.4	12,084.5	10,740.1
Load Resource Surplus	1,030.5	1,093.8	577.9

Note: Winter capacity results reflect only utilities submitting integrated resource plans. Smaller utilities submit resource plans and do not report capacity requirements or resources.

Table 3: Individual Utility Growth Projections, with and without Conservation

Utility	Projected Percentage Change in Load (Before Conservation)		Percent of Projected Load Growth to Be Met by Conservation	
	First Five Years	Second Five Years	First Five Years	Second Five Years
Alder Mutual Light	4.6%	5.0%	0%	0%
Asotin County PUD No. 1	3.1%	3.3%	0%	0%
Avista	5.8%	6.0%	43%	57%
Benton County PUD No. 1	2.7%	2.1%	57%	67%
Benton Rural Electric Assn	-3.3%	8.3%	NA	0%
Big Bend Electric Cooperative	-1.6%	5.7%	NA	0%
Blaine, City of	1.1%	0.4%	65%	0%
Centralia, City of	4.0%	5.3%	0%	0%
Chelan County PUD No.1	13.5%	12.9%	22%	16%
Cheney, City of	10.7%	6.7%	3%	0%
Chewelah, City of	5.4%	1.1%	0%	0%
Clallam County PUD No. 1	4.3%	5.5%	67%	50%
Clark Public Utilities	5.5%	3.5%	82%	102%
Columbia REA	4.0%	10.8%	0%	0%
Coulee Dam, Town of	3.6%	3.7%	0%	0%
Cowlitz County PUD No. 1	3.5%	-0.1%	0%	NA
Douglas County PUD No, 1	36.6%	27.6%	1%	0%
Eatonville, Town of	7.9%	0.9%	0%	0%
Ellensburg, City of	4.0%	1.2%	7%	0%
Elmhurst Mutual Power and Light	8.8%	4.1%	7%	0%
Ferry County PUD	-22.4%	1.5%	NA	0%
Franklin County PUD No. 1	8.9%	5.2%	43%	45%
Grant County PUD No. 2	26.5%	15.9%	6%	11%
Grays Harbor County PUD No .1	-10.2%	3.1%	NA	62%
Inland Power and Light	4.1%	3.2%	28%	0%
Jefferson County PUD No. 1	6.6%	1.3%	0%	0%
Kittitas County PUD No. 1	6.5%	2.4%	32%	3%
Klickitat County PUD No. 1	3.0%	3.6%	11%	3%
Lakeview Power and Light	5.2%	2.4%	21%	0%
Lewis County PUD No. 1	0.0%	-0.1%	NA	NA
Mason County PUD No. 1	12.5%	0.8%	3%	0%
Mason County PUD No. 3	8.2%	1.3%	3%	0%
McCleary, City of	24.8%	1.6%	4%	0%
Milton, City of	20.7%	2.7%	36%	0%
Modern Electric	0.9%	1.5%	63%	0%

Nespelem Valley Electric Cooperative	24.7%	4.2%	2%	0%
Ohop Mutual Light Company	6.2%	0.6%	9%	0%
Okanogan County Electric Cooperative	-0.1%	-2.0%	NA	NA
Okanogan County PUD No. 1	5.1%	5.1%	0%	0%
Orcas Power and Light Cooperative	7.3%	6.0%	12%	10%
Pacific County PUD No. 2	7.4%	1.1%	23%	100%
Pacific Power and Light (PacifiCorp)	5.4%	2.7%	129%	162%
Parkland Light and Water Company	5.9%	1.0%	9%	0%
Pend Oreille PUD	-72.0%	12.5%	NA	0%
Peninsula Light	1.5%	1.5%	50%	50%
Port Angeles, City of	5.9%	-0.3%	9%	NA
Puget Sound Energy	9.6%	8.6%	109%	79%
Richland, City of	13.6%	4.4%	25%	62%
Ruston, Town of	2.9%	-2.8%	0%	NA
Seattle City Light	2.9%	2.0%	244%	281%
Seattle, Port of	23.2%	4.0%	0%	0%
Skamania County PUD No. 1	4.0%	0.9%	8%	0%
Snohomish County PUD No. 1	20.7%	10.9%	24%	36%
Steilacoom, Town of	6.8%	2.5%	0%	0%
Sumas, City of	5.6%	1.9%	5%	0%
Tacoma Power	2.8%	2.9%	155%	129%
Tanner Electric	10.8%	8.1%	8%	0%
Vera Water and Power	8.5%	2.9%	0%	0%
Wahkiakum County PUD No. 1	5.8%	0.0%	7%	NA
Whatcom County PUD No. 1	6.6%	0.7%	0%	0%
State Total	7.7%	6.4%	68%	60%

Utility Reporting

The utility resource planning statutes (Chapter 19.280 RCW[3]) require that each utility prepare a resource plan and submit it to Commerce by Sept. 1 of each even-numbered year. Commerce received reports from 60 utilities. These are summarized in Tables 1-3, and all of the individual reports are presented in Appendix A.

Electric utilities in Washington vary significantly in size and scope of operations. This is reflected in the way utilities approach resource planning and forecasting. Larger utilities typically use multiple sources of electricity supply to meet their customers' requirements and engage in sophisticated assessments of risks and benefits in evaluating alternative sources of new energy. Many smaller utilities rely on a single supplier to supply all of the power required by their customers. For smaller utilities, the upstream provider – often the Bonneville Power Administration but sometimes another electric utility – undertakes the complex planning and forecasting exercise that leads to a resource plan.

The resource planning statute reflects this difference in approaches. It requires that larger utilities prepare and submit integrated resource plans, which are the product of a thorough assessment of future needs and alternatives for meeting those needs through both demand-side and supply-side resources. Smaller utilities are allowed to prepare and submit a simplified assessment of loads and resources.

Interpretation of base-year, five-year, and 10-year data

The resource plan summary submitted to Commerce includes load and resource information for three points in a 10-year planning cycle. These points are the base year, a five-year plan and a 10-year plan. In 2016, most utilities used 2015 as the base year, and the five-year and 10-year points are 2020 and 2025, respectively. However, utilities vary in their planning cycles and some utilities use an earlier or later set of years in their reporting. For purposes of the statewide summary, Commerce aggregates all base year data into a single value and does likewise for five-year data and 10-year data.

Interpretation of conservation and load data

An important principle of integrated resource planning is that all resources should be evaluated on a consistent basis. This includes both different generating resources – such as wind and natural gas – and demand-side resources in the form of energy conservation. With conservation analyzed as resource and compared to supply-side options, utilities are able to determine whether customers are better served by improving the efficiency of their energy consumption or increasing the amount of energy delivered to them.

[3] http://apps.leg.wa.gov/rcw/default.aspx?cite=19.280

A consequence of this approach is that energy conservation is sometimes portrayed as a reduction in the utility's load and sometimes portrayed as a resource available to meet load. This can lead to confusion in interpreting utility plans.

Here is how this potential confusion is resolved in the reports submitted to Commerce and summarized in this document:

> Utilities report a base-year load amount that reflects whatever conservation has occurred in the past. For the five-year and 10-year values, utilities are directed to report the load that they would expect to serve in the absence of any additional conservation savings. The report separately lists the conservation resources that the utility expects to acquire during the five-year and 10-year periods.
>
> For example, Clark Public Utilities reports that its load in 2015 was 514 average megawatts (aMW).[4] This figure represents the actual load of its customers in the base year. It reflects many years of conservation programs at Clark Public Utilities and would be significantly higher without those historical conservation achievements. For the five-year interval, Clark forecasts a load of 543 aMW and conservation savings of 23 aMW. The first number represents the load that Clark would expect if it achieved no conservation savings after the base year. Without conservation, its load would increase by 29 aMW. Clark has identified resources to meet this expected growth, including 23 aMW of additional conservation. With its planned conservation savings, Clark would expect its actual load to increase by only 6 aMW during the five-year interval.

In summary, the amounts reported as load for the five-year and 10-year intervals are based on an assumption of no new conservation. The actual loads at those points are likely to be lower by the amount of energy conservation identified by each utility.

[4] aMW, or average megawatt, is an amount of electric energy equal to one megawatt-hour per hour for an entire year, or 8,760 megawatt-hours.

Comparison to Regional Plans

PNUCC 2016 Northwest Regional Forecast

The Pacific Northwest Utilities Conference Committee is an electric utility association that compiles information on expected loads and resources of electric utilities in the Pacific Northwest. It includes the loads and resources of Washington utilities along with those of utilities in Oregon, Idaho and Montana.[5]

The *2016 Northwest Regional Forecast* concluded that regional utilities are expecting only modest growth in retail loads and expect to acquire substantial amounts of energy efficiency through utility programs, market transformation programs, and governmental codes and standards.

According to the PNUCC report, utilities plan to acquire wind, solar and natural gas resources during the next decade. The forecast reflects planned retirement of three coal-fired generating units: Boardman and Centralia Unit 1 in 2020 and Centralia Unit 2 in 2025.

The compiled results from PNUCC indicate that the Northwest utilities collectively expect to have surplus energy resources through the 2021-2022 operating year. The regional forecast shows an energy deficit starting in 2022 and continuing through the end of the 10-year planning period.

PNUCC highlights winter-peaking requirements as a concern. The region's projected peak demand, including a planning margin that increases over time, is projected to exceed utilities' firm resources in every year of the planning period. The supply of peaking resources does not include out-of-region imports, the capacity of independent power projects within the Northwest or hydroelectric system capacity in excess of critical water conditions.

The projected load-resource balance does not reflect the contribution of generating projects that are planned but not yet formally committed. The planned resources identified by utilities would provide 1,307 aMW of energy – more than the 1,225 aMW projected energy deficit. However, the largest of these projects are combined cycle combustion turbine natural gas projects that would enter service in 2026.

Pacific Northwest Power Supply Adequacy Assessment for 2021

The region's power planning body, the Northwest Power and Conservation Council (Power Council), evaluated the adequacy of the electric power supply in 2016 and concluded that

[5] *Northwest Regional Forecast of Power Loads and Resources*, April 2016. www.pnucc.org/system-planning/northwest-regional-forecast. The PNUCC report provides considerably more detail on individual generating units than utilities submit through the state resource plan reporting requirements.

resources are expected to be adequate through 2020. However, with the planned retirements of four Northwest coal plants by July of 2022, the system will no longer meet the Power Council's adequacy standard, and will have to acquire nearly 1,400 MW of new capacity in order to maintain that standard.[6]

Compared to the PNUCC forecast, the Power Council's assessment reflects more recent information about planned coal plant retirements, and includes the retirement of the Colstrip 1 and 2 plants in Montana by July 2022.

The Power Council found these results to be "not surprising" and noted that utilities are already developing new resources to address the projected deficit. However, the council also noted that there is substantial uncertainty about future levels of electricity demand, the amount of energy available for import from other regions and the performance of the region's generating resources.

[6] *Pacific Northwest Power Supply Adequacy Assessment for 2021*, September 27, 2016, Document 2016-10. http://www.nwcouncil.org/media/7150591/2016-10.pdf

Overgeneration Concerns

In 2013, the Legislature amended the resource planning statute to address concerns about the potential for "overgeneration" events. The legislation required that utilities consider this potential in their planning "if applicable to the utility's resource portfolio," and required that Commerce include in this report an assessment of utility approaches to overgeneration.

The statute defines an overgeneration event as:

> *"an event within an operating period of a balancing authority when the electricity supply, including generation from intermittent renewable resources, exceeds the demand for electricity for that utility's energy delivery obligations and when there is a negatively priced regional market."*

Overgeneration might occur when high river flows and high wind volumes coincide. The capacity of the hydroelectric system to store extra river flow is limited, and even the option of spilling water over the dams is restricted by fish mortality concerns. In these rare and short-lived circumstances, the regional power system may have more electric generation from hydroelectric and wind resources than what is required to meet regional loads and export opportunities.

Since 2013, the Bonneville Power Administration has adopted an Oversupply Management Protocol, providing tools for the operators of the hydroelectric system and transmission grid to manage oversupply situations.[7] The implementation of this protocol has generally shifted the overgeneration issue from a planning concern to an operational concern.

In many cases, utilities did not find it necessary in their 2015-2016 integrated resource plans to address overgeneration as an issue separate from the more general assessment of generating resource alternatives. The overgeneration prospect is one that contributes to an increasing interest among utilities in energy storage technologies, such as pumped storage and battery storage systems.

Here are excerpts illustrating utilities' analyses of the overgeneration issue:

Clark Public Utilities (2016 IRP, p. 33):

> Pumped storage provides probably the best combination of size and response to integrate renewables on a wholesale power scale at a reasonable cost. However, the 10-year planning horizon now contemplated in this IRP removes pumped storage from consideration. Any new pumped storage development in close proximity to Clark Public Utilities to make it cost effective from a transmission viewpoint is at least 10 years away from operation if not more.

[7] www.bpa.gov/projects/initiatives/oversupply/Pages/default.aspx

Grays Harbor PUD (2016 IRP, p. 47):

> During spring months in the Northwest, hydroelectric resources produce significant amounts of energy from spring run-off. At the same time, windy spring conditions results in large quantities of wind energy available at the same time when demands for electricity are low. This oversupply of energy has been resolved in the past by generation curtailment, which can be highly contentious and disruptive. Pumped storage may become the energy storage solution of choice as more wind is added to the balancing area and curtailments increase. During periods of high wind and high water, water is pumped to a storage reservoir using wind energy to power the pumps. The water is then released through the hydroelectric facility once demand increases or there is less generation from wind resources. The cost-effectiveness of pumped storage is determined by the price differential between heavy load hours (high demand) and low load hours (low demand). The efficiency of the pumps and hydroelectric generators are also an important factor. As facilities become more efficient and require less energy, the cost-effectiveness increases. Generally, however, pumped storage is a net consumer of energy in that it takes more energy to pump the water uphill than is recouped in the generation process when the water is released through the generator.

Snohomish PUD (2015 IRP, pp. 4-5):

> The District resides in the Bonneville Power Administration's (BPA's) footprint or balancing authority area (BAA). BPA is responsible for moment-to-moment balancing of loads and resources within its footprint, including the District. BPA mitigates overgeneration conditions or oversupply events through its Oversupply Management Protocol. An oversupply event is an event that historically occurs in the late spring, and is marked by moderate temperatures that reduce demand at the same time regional snow melt and spring rains resulting in high hydroelectric energy production that combine with high energy production from regional wind projects. The District's portfolio is subject to BPA's Oversupply Management Protocol and pays the oversupply rate assessed by BPA.
>
> The District's efforts to mitigate oversupply for its own portfolio and electric system are also being assessed via use cases being conducted as part of the MESA energy storage initiative.

Avista (2015 IRP, pp. 9-8, 9-9):

> Increasing solar and wind generation on the electric grid makes energy storage technologies attractive from an operational perspective. Storage could be an ideal way to smooth out renewable generation variability, oversupply, and assist in load following and regulation needs. The technology could help meet peak demand, provide voltage support, relieve transmission congestion, take power during over supply events, and supply other non-energy needs for the system. The IRP considered several storage technologies, including pumped hydroelectric, lead-acid batteries, lithium ion batteries, flow batteries, flywheels, and compressed air.

To learn more about storage technology and its potential, Avista recently installed a vanadium flow battery in Pullman, Washington. This installation, known as the Turner Energy Storage Project, will provide insight about the technology's reliability, its potential benefit to the transmission and/or distribution systems, and potential power supply benefits including oversupply events. The battery has one megawatt of power capability and three megawatt-hours of energy storage. A Washington state grant for research and development partially funded this storage project.

Chelan PUD (2016 IRP, p. 15):

Chelan PUD's share of Nine Canyon wind is a relatively small portion of its overall resource portfolio (less than 1%). In most cases, the District is able to integrate this wind operationally without issue due to its hydro resource reserves. The District may have to sell at negative prices when it has already reduced its hydro generation as much as possible under certain operating circumstances.

Appendix A: Utility Cover Sheets

Washington Electric Utility Loads and Resources Estimates reported to the Department of Commerce in 2016.

Alder Mutual Light Company << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA - Seattle Office

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	0.52	0.54	0.57
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	0.52	0.54	0.57
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	0.52	0.54	0.57
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Pud No. 1 of Asotin County << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: **Tim Simpson**

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	5.82	6.00	6.20
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	5.82	6.00	6.20
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other (Nuclear)			
Distributed Generation			
Undecided			
Total Resources	5.82	6.00	6.20
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval n/a (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Avista <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: John Lyons

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	1,106.13	1,024.81	700.93	1,176.68	1,094.58	741.68	1,254.98	1,173.46	786.05
Exports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Resources:									
Future Conservation/Efficiency				29.21	25.60	17.59	68.45	62.61	42.99
Demand Response				0.00	0.00	0.00	0.00	0.00	0.00
Cogeneration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydro	657.82	465.87	402.00	656.78	618.50	339.14	606.63	586.54	312.05
Wind	0.00	0.00	21.99	0.00	0.00	26.15	0.00	0.00	26.15
Other Renewables	30.85	30.85	24.01	30.85	30.85	26.69	30.85	30.85	26.69
Thermal - Natural Gas	569.96	469.55	262.22	569.96	469.55	412.17	569.96	469.55	426.56
Thermal - Coal	145.70	145.70	125.90	145.70	145.70	135.18	145.70	145.70	125.00
Net Long Term Contracts	0.00	0.00	-24.74	20.35	17.06	19.63	20.35	17.06	19.63
Net Short Term Contracts	0.00	0.00	-75.56	0.00	0.00	0.00	0.00	0.00	0.00
BPA	53.82	0.00	27.56	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.00	0.00	0.00	0.66	0.66	-0.39	0.66	0.66	-0.39
Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Distributed Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Undecided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Resources	1,458.15	1,111.97	763.40	1,453.49	1,307.91	976.17	1,442.60	1,312.97	978.70
Load Resource Balance	352.02	87.16	62.47	276.81	213.33	234.49	187.62	139.50	192.65

Date of Board/Commission Approval March-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Loads are 1 in 2 expected values and do not include any consideration of planning margin. Using 90th percentile for hydro energy, rather than critical water year. Load for Base Year is actual load instead of weather adjusted load. The main cover sheet shows Avista system, and the WA share only cover sheet shows 65.63% to show the Washington only portion. The other category includes the Pullman Energy Storage Project.

Avista

	15 Year Estimate			20 Year Estimate		
		2030			2035	
	Winter	Summer	Annual	Winter	Summer	Annual
	(MW)	(MW)	(MWa)	(MW)	(MW)	(MWa)
Loads	1,327.76	1,249.79	829.37	1,395.43	1,321.79	869.20
Exports	0.00	0.00	0.00	0.00	0.00	0.00
Resources:						
Future Conservation/Efficiency	100.74	95.29	64.58	126.47	121.81	81.91
Demand Response	0.00	0.00	0.00	0.00	0.00	0.00
Cogeneration	0.00	0.00	0.00	0.00	0.00	0.00
Hydro	606.63	586.54	312.13	606.16	591.38	312.20
Wind	0.00	0.00	26.15	0.00	0.00	26.15
Other Renewables	30.85	30.85	26.69	30.85	30.85	26.69
Thermal - Natural Gas	387.22	316.01	281.34	386.95	318.70	285.85
Thermal - Coal	145.70	145.70	125.01	145.70	145.70	135.18
Net Long Term Contracts	20.35	17.06	19.63	20.35	17.06	19.63
Net Short Term Contracts	0.00	0.00	0.00	0.00	0.00	0.00
BPA	0.00	0.00	0.00	0.00	0.00	0.00
Other	0.66	0.66	-0.39	0.66	0.66	-0.39
Imports	0.00	0.00	0.00	0.00	0.00	0.00
Distributed Generation	0.00	0.00	0.00	0.00	0.00	0.00
Undecided	0.00	0.00	0.00	0.00	0.00	0.00
Total Resources	1,292.14	1,192.11	855.15	1,317.13	1,226.15	887.23
Load Resource Balance	-35.62	-57.68	25.78	-78.29	-95.64	18.03

Public Utility District No. 1 of Benton County <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: James Dykes

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	266.70	429.50	205.50	320.00	449.00	210.99	326.00	459.00	215.34
Exports									
Resources:									
Future Conservation/Efficiency				3.12	3.12	3.12	6.02	6.02	6.02
Demand Response									
Cogeneration									
Hydro	1.00	3.00	1.40	1.00	3.00	1.31	1.00	3.00	1.31
Wind	1.00	3.00	4.10	1.00	3.00	6.00	1.00	3.00	6.00
Other Renewables				4.00	12.00	25.65	4.00	12.00	25.65
Thermal - Natural Gas	6.00	50.00	10.50	8.00	50.00	12.50	0.00	0.00	0.00
Thermal - Coal									
Net Long Term Contracts									
Net Short Term Contracts	20.70	119.50	0.00	64.58	122.58		75.68	179.68	
BPA	238.00	254.00	192.60	238.00	254.00	199.00	238.00	254.00	199.00
Other	0.00								
Imports									
Distributed Generation				0.30	1.30	0.70	0.30	1.30	0.70
Undecided									
Total Resources	266.70	429.50	208.60	320.00	449.00	248.28	326.00	459.00	238.68
Load Resource Balance	0.00	0.00	3.10	0.00	0.00	37.29	0.00	0.00	23.34

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Public Utility District No. 1 of Benton County <<< Utility Name

13 - Based on values used in District's 2016-2025 Load Forecast which is a major driver in the IRP modeling process.
19 - Frederickson NG contract expires in 2022.
22 - Winter and Summer capacity needs secured from the market via Risk Management Committee approved hedges and short term market purchases.
18 - 2020 and 2025 estimates include renewables acquired to meet increase to 15% RPS requirement as stipulated in the Energy Independence Act.

Benton Rural Electric Association << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: **John Porter**

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	71.14	68.80	74.50
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	68.37	59.08	59.08
BPA Tier 2		9.72	15.42
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	2.77		
Other			
Distributed Generation			
Undecided			
Total Resources	71.14	68.80	74.50
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval November-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

The Benton REA load decrease is because Benton REA transferred all of the accounts on the Yakama Inidian Reservation to the tribal Utility, Yakama Power.

Big Bend Electric Cooperative << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Christina Carter

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	65.81	64.73	68.43
Resources:			
Future Conservation/Efficiency		0.33	0.34
Demand Response			
BPA Tier 1 (include BPA PF)	63.31	60.00	60.00
BPA Tier 2	2.50	0.40	0.09
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)		4.00	8.00
Other			
Distributed Generation			
Undecided			
Total Resources	65.81	64.73	68.43
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

See attached document: 2016 Washington State Electric Utility Resource Plan for Big Bend Electric Cooperative. Approved by Big Bend Electric Cooperative's Board of Trustees on 8/25/2016

City of Blaine << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by:

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	FY 2015	FY 2020	FY 2025
Period	**Annual**	**Annual**	**Annual**
Units	**(MWa)**	**(MWa)**	**(MWa)**
Loads	8.85	8.95	8.98
Resources:			
Future Conservation/Efficiency		0.06	0.06
Demand Response			
BPA Tier 1 (include BPA PF)	8.85	8.89	8.92
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	8.85	8.95	8.98
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

City of Centralia << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: David Johnson

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2021*	*2026*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	29.61	30.79	32.42
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	20.66	23.67	23.98
BPA Tier 2	1.04		0.33
Non BPA:			
Co-generation			
Hydro (critical water)	7.91	7.11	7.11
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			1.00
Other			
Distributed Generation			
Undecided			
Total Resources	29.61	30.78	32.41
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

PUD No. 1 of Chelan County <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Becky Keating

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2021**			**2026**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	416.00	235.00	185.00	468.00	253.00	210.00	505.00	266.00	237.00
Exports									
Resources:									
Future Conservation/Efficiency				9.24	6.71	5.50	16.68	12.11	9.93
Demand Response				20.00	20.00	0.00	20.00	20.00	0.00
Cogeneration									
Hydro	419.00	220.00	189.00	770.00	386.00	338.00	858.00	428.00	375.00
Wind	0.01	0.21	2.00	1.94	0.50	2.25	1.94	0.50	2.25
Other Renewables									
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts									
Net Short Term Contracts									
BPA									
Other									
Imports									
Distributed Generation									
Undecided									
Total Resources	419.01	220.21	191.00	801.18	413.21	345.75	896.62	460.61	387.18
Load Resource Balance	3.01	-14.79	6.00	333.18	160.21	135.75	391.62	194.61	150.18

Date of Board/Commission Approval June-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

PUD No. 1 of Chelan County <<< Utility Name

Chelan PUD has one agreement falling under the umbrella of DR. It is a load shedding agreement with Alcoa Power Generating, Inc. (APGI) and Alcoa, Inc. (Alcoa). The agreement allows for a frequency of no more than four times in any calendar year and for an amount of energy up to 20 MW per hour. The District is able to count the 20 MW as part of its operating reserves. In December 2015, Alcoa idled their Wenatchee Works plant, but is scheduled to ramp back up in the spring of 2017. Appendix B in Chelan PUD's IRP includes this cover sheet with supplemental information on loads and resources.

City of Cheney << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	16.15	17.88	19.07
Resources:			
Future Conservation/Efficiency		0.05	0.05
Demand Response			
BPA Tier 1 (include BPA PF)	16.15	15.56	15.56
BPA Tier 2		0.26	0.46
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)		2.00	3.00
Other			
Distributed Generation			
Undecided			
Total Resources	16.15	17.88	19.07
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

City of Chewelah << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	2.52	2.65	2.68
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	2.52	2.65	2.68
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	2.52	2.65	2.68
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

PUD #1 of Clallam County << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Fred Mitchell

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2014*	*2021*	*2026*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	77.00	80.32	84.75
Resources:			
Future Conservation/Efficiency		2.23	4.45
Demand Response			
BPA Tier 1 (include BPA PF)	75.07	75.29	75.29
BPA Tier 2	1.26	2.14	C
Non BPA:			
Co-generation			
Hydro (critical water)	0.67	0.67	0.67
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	77.00	80.33	80.41
Load Resource Balance	0.00	0.00	-4.34

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

PUD #1 of Clallam County << Utility Name

Information is reported using the Federal fiscal year (October - September). The base year is 2014 weather normalized load. The 2021 and 2026 load forecasts are based on 2015 weather normalized actual load applied to BPA's AARG of 0.6% including I-937 conservation.

Clark Public Utilities <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Tom Haymaker

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	940.00	817.00	514.40	969.00		542.88	984.00		561.88
Exports	0.00	0.00	0.00	0.00					
Resources:									
Future Conservation/Efficiency				33.00		23.30	63.00		42.70
Demand Response									
Cogeneration	0.00	0.00	0.00						
Hydro	1.00	1.00	1.79	1.00		1.18	1.00		1.18
Wind	0.00	0.00	15.91	0.00		18.30	0.00		18.30
Other Renewables	0.00	0.00							
Thermal - Natural Gas	257.00	243.00	206.94	248.00		225.00	248.00		225.00
Thermal - Coal	0.00	0.00	0.00						
Net Long Term Contracts	0.00	0.00	0.00						
Net Short Term Contracts	200.00	75.00	-3.18						
BPA	413.00	299.00	322.94	508.00		293.40	508.00		293.00
Other									
Imports									
Distributed Generation									
Undecided									
Total Resources	871.00	618.00	544.40	790.00	0.00	561.18	820.00	0.00	580.18
Load Resource Balance	-69.00	-199.00	30.00	-179.00	0.00	18.30	-164.00	0.00	18.30

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Line 10: Actual load s are used for base year. Line 26:
Distibuted Generation such as rooftop solar and community solar are included as negative loads. Their impacts to load are diminumus for planning purposes.

Columbia REA << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Scott Peters

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	42.02	43.72	48.44
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	38.26	37.33	37.33
BPA Tier 2	2.41		
Non BPA:			
Co-generation			
Hydro (critical water)	1.35		
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)		6.39	11.11
Other			
Distributed Generation			
Undecided			
Total Resources	42.02	43.72	48.44
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Town of Coulee Dam << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	1.84	1.91	1.98
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	1.84	1.91	1.98
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	1.84	1.91	1.98
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Public Utility District No. 1 of Cowlitz County <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: ATW

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	755.71	641.59	567.33	765.00	627.30	587.19	768.30	625.90	586.60
Exports									
Resources:									
Future Conservation/Efficiency									
Demand Response									
Cogeneration									
Hydro	76.00	52.00	25.39	79.00	79.00	15.80	79.00	79.00	15.80
Wind		8.00	20.74	0.00	0.00	33.88	0.00	0.00	33.88
Other Renewables									
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts									
Net Short Term Contracts									
BPA	682.00	599.00	600.95	716.84	681.29	551.18	716.84	681.29	553.05
Other									
Imports									
Distributed Generation									
Undecided									
Total Resources	758.00	659.00	647.08	795.84	760.29	600.85	795.84	760.29	602.72
Load Resource Balance	2.29	17.41	79.74	30.84	132.99	13.66	27.54	134.39	16.12

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Public Utility District No. 1 of Cowlitz County <<< Utility Name

- 2015 Base year load is not weather adjusted.
- Loads were forecasted using regression methodology that captured conservation effects and trends
- For 2020 and 2025 energy balance, hydro and slice generation is assumed to be critical on an annual basis.
- For 2020 and 2025 capacity balance, hydro generation is assumed to be at maximum capacity. Slice generation is assumed to have a system maximum generation capability of 10,500 MW.
- For 2020 and 2025 energy balance, wind resources are assumed to generate at an annual capacity factor of 27%.
- For capacity balance, wind resources are assumed to not generate for the hour.

PUD No. 1 of Douglas County, Washington << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: **Jeff Johnson**

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	93.00	127.00	162.00
Resources:			
Future Conservation/Efficiency		0.25	0.30
Demand Response			
BPA Tier 1 (include BPA PF)			
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)	174.90	297.00	283.00
Wind	2.51	3.00	3.00
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	23.61	0.00	0.00
Other			
Distributed Generation			
Undecided			
Total Resources	201.02	300.25	286.30
Load Resource Balance	108.02	173.25	124.30

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in pla

The "Market Purchase (non BPA) resource category consists of annual amounts under a pre-existing long-term firm power exchange agreement, dated October 1, 2000.

Town of Eatonville << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	3.04	3.28	3.31
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	3.04	3.28	3.31
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	3.04	3.28	3.31
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

City of Ellensburg << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	23.23	24.15	24.43
Resources:			
Future Conservation/Efficiency		0.06	0.06
Demand Response			
BPA Tier 1 (include BPA PF)	23.23	24.09	24.37
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	23.23	24.15	24.43
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Elmhurst Mutual Power and Light Company << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	29.55	32.15	33.46
Resources:			
Future Conservation/Efficiency		0.17	0.17
Demand Response			
BPA Tier 1 (include BPA PF)	29.55	31.98	31.72
BPA Tier 2			1.57
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	29.55	32.15	33.46
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Ferry County PUD << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	12.25	9.51	9.65
Resources:			
Future Conservation/Efficiency		0.02	0.02
Demand Response			
BPA Tier 1 (include BPA PF)	12.25	9.49	9.63
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	12.25	9.51	9.65
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

PUD No. 1 of Franklin County

Washington State Utility Resource Plan Year **2016**

Prepared by: Richard Sargent

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	124.00	135.00	142.00
Resources:			
Future Conservation/Efficiency		4.73	7.88
Demand Response			
BPA Tier 1 (include BPA PF)	127.00	116.70	116.70
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind	5.00	6.00	6.00
Other Renewables			
Thermal-Natural Gas	17.00	30.00	
Thermal-Coal			
Market Purchase (non BPA)			11.00
Other			
Distributed Generation	0.60	0.60	0.60
Undecided			
Total Resources	149.60	158.03	142.18
Load Resource Balance	25.60	23.03	0.18

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in pla

PUD No. 1 of Franklin County

Franklin Public Utility District has sufficient resources to meet its forecasted loads through August 2022. Based upon current long term market forecasts, the most cost effective energy after August 2022 is through market purchases. (1) Column"B" Base Year calculations are based upon actual loads and resourse generation. Exports/imports for seasonal exchanges are not included. (2) Line 24 "Distributed Generation" is both small hydro and community solar. (3) BPA Tier 1 is calculated on our Block/Slice contract calculated at critical water.

Public Utility District No. 2 of Grant County <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: 8/25/2016

Casey Sprouse

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	623.00	777.00	550.50	929.00	960.00	696.60	1,070.00	1,128.00	807.20
Exports	1,017.00	342.00	316.00	1,165.00	991.00	333.47			
Resources:									
Future Conservation/Efficiency				0.00	0.00	8.61	0.00	0.00	20.40
Demand Response									
Cogeneration									
Hydro	1,028.00	676.00	642.07	1,165.00	1,003.00	473.10	1,165.00	1,003.00	473.10
Wind			3.47	0.00	0.00	3.40	0.00	0.00	3.40
Other Renewables									
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts			214.00	920.00	940.00	414.51			
Net Short Term Contracts									
BPA	9.00	8.00	6.98	9.00	8.00	5.00	9.00	8.00	5.00
Other									
Imports									
Distributed Generation									
Undecided									
Total Resources	1,037.00	684.00	866.51	2,094.00	1,951.00	904.62	1,174.00	1,011.00	501.90
Load Resource Balance	-603.00	-435.00	0.01	0.00	0.00	-125.45	104.00	-117.00	-305.30

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Public Utility District No. 2 of Grant County <<< Utility Name

1) Base year 2015 data is actual load and actual generation. Base year 2015 peak capability is the actual generation on the observed peak load hours for 2015.
2) Hydro values include Grant PUD rights in Wanapum, Priest Rapids, P.E.C, Quincy Chute and Wapato.
3) Conservation based on economic potential study performed in November 2015.
4) Physical loads and resources are covered through a resource and load exchange agreement with Shell Energy until 2020.
5) Imports and exports only reflects purchases and sales that have been executed.
6) Hydro peak capabilities based on PNCA 2016 Final reg for Priest Rapids and Wanapum with 12 MW of summer peak capability for PEC and Quincy Chute.

Grays Harbor Public Utility District No. 1 <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: linda James-Saffron

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	230.00	133.00	126.56	233.42	141.47	113.65	236.69	144.74	117.16
Exports									
Resources:									
Future Conservation/Efficiency						1.99			4.16
Demand Response									
Cogeneration	11.00	11.00	11.00	11.00	11.00	11.00			
Hydro									
Wind	25.96	25.96	12.23	25.96	25.96	9.30	18.00	18.00	6.80
Other Renewables									
Thermal - Natural Gas	45.00	45.00	25.98	45.00	45.00	22.19			
Thermal - Coal									
Net Long Term Contracts									
Net Short Term Contracts									
BPA	131.76	131.76	131.76	130.29	130.29	130.29	129.94	129.94	129.94
Other									
Imports									
Distributed Generation									
Undecided									
Total Resources	213.72	213.72	180.97	212.25	212.25	174.77	147.94	147.94	140.90
Load Resource Balance	-16.28	80.72	54.41	-21.17	70.78	61.12	-88.75	3.20	23.74

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Grays Harbor Public Utility District No. 1 <<< Utility Name

1.) Cogeneration resources are purchased through PPA with internal industrial customer.
2.) Wind resources include portions of Phase 1,2,&3 of Nine Canyon Wind Project, and Coastal Community Action's Wind Project located within the district.
3.) Thermal - NG resources include Frederickson; IRP assumes 49% capacity factor for 2020.
4.) Primary resource is BPA and Slice/Block contract through 2028. BPA data includes Rates High Water Mark figures for base and estimates.

Inland Power and Light << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: John Francisco

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2014*	*2019*	*2024*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	109.11	113.58	117.27
Resources:			
Future Conservation/Efficiency		1.25	1.25
Demand Response			
BPA Tier 1 (include BPA PF)	108.19	106.22	106.22
BPA Tier 2	0.92	7.00	
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			9.80
Other			
Distributed Generation			
Undecided			
Total Resources	109.11	114.47	117.27
Load Resource Balance	0.00	0.89	0.00

Date of Board/Commission Approval September-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Inland Power and Light << Utility Name

Loads are actual for base year and utilize the BPA published forecast for five and ten year estimates for this report. Conservation potential assessments are showing flat or declining conservation potential, however this report assumes potential associated with new loads will allow for consistent conservation acquisition over the report period.Resource invetigations conducted by Inland Power in 2014 and 2015 concluded that unspecified market purchases would provide for the most cost effective and reliable AHWM load service to our membership. Inland Power signed a long term contract for RECs to satisfy its Energy Independence Act (RCW 19.285) compliance obligation.

Public Utility District #1 of Jefferson County << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Jefferson PUD

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	41.31	44.05	44.64
Resources:			
Future Conservation/Efficiency			
Demand Response		0.09	0.09
BPA Tier 1 (include BPA PF)	41.31	43.96	44.55
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	41.31	44.05	44.64
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Kittitas County PUD No. 1 << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Matt Boast

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	11.24	11.97	12.26
Resources:			
Future Conservation/Efficiency		0.23	0.24
Demand Response			
BPA Tier 1 (include BPA PF)	9.85	9.85	9.85
BPA Tier 2	0.38	0.87	1.14
Non BPA:			
Co-generation			
Hydro (critical water)	0.98	0.98	0.98
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation	0.03	0.04	0.05
Undecided			
Total Resources	11.24	11.97	12.26
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval December-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Please note that the Board approval is in the future. Wanted to submit for your convenience.

Public Utility District No. 1 of Klickitat County << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Mike DeMott

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	44.94	46.31	47.99
Resources:			
Future Conservation/Efficiency		0.15	0.20
Demand Response			
BPA Tier 1 (include BPA PF)	36.30	36.30	36.30
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)	4.50	4.50	4.50
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	4.14	5.36	6.99
Other			
Distributed Generation			
Undecided			
Total Resources	44.94	46.31	47.99
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Lakeview Power and Light << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	29.88	31.43	32.20
Resources:			
Future Conservation/Efficiency		0.33	0.33
Demand Response			
BPA Tier 1 (include BPA PF)	29.88	31.10	31.87
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	29.88	31.43	32.20
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Public Utility District No. 1 of Lewis County <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Matt Samuelson

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	233.37	146.49	110.66	211.00	129.00	110.63	215.00	131.00	110.56
Exports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Resources:									
Future Conservation/Efficiency				3.80	3.80	1.67	8.53	8.53	3.41
Demand Response				0.00	0.00	0.00	0.00	0.00	0.00
Cogeneration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydro	5.12	4.52	1.19	5.12	4.52	1.19	5.12	4.52	1.19
Wind	7.71	7.71	7.71	7.17	7.17	7.17	7.17	7.17	7.17
Other Renewables	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Thermal - Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Thermal - Coal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Long Term Contracts	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Net Short Term Contracts									
BPA	195.00	136.00	120.68	195.00	136.00	123.53	195.00	136.00	121.40
Other	26.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Distributed Generation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Undecided	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total Resources	233.83	148.23	129.58	211.09	151.49	133.56	215.82	156.22	133.17
Load Resource Balance	0.46	1.74	18.92	0.09	22.49	22.93	0.82	25.22	22.61

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Mason County PUD No 1 << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	8.39	9.44	9.52
Resources:			
Future Conservation/Efficiency		0.03	0.03
Demand Response			
BPA Tier 1 (include BPA PF)	8.08	8.87	8.95
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)	0.31	0.54	0.54
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	8.39	9.44	9.52
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Mason Public Utility District No. 3 <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Michele Patters, Energy Resources Manager

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	160.70	78.74	76.43	163.10	79.92	82.67	165.50	81.10	83.78
Exports									
Resources:									
Future Conservation/Efficiency						0.21			0.21
Demand Response									
Cogeneration									
Hydro			0.66			0.66			0.66
Wind			1.47			1.73			1.73
Other Renewables									
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts									
Net Short Term Contracts									
BPA	160.70	78.74	74.28	163.10	79.92	80.05	165.50	81.10	81.12
Other									0.04
Imports									
Distributed Generation			0.02			0.02			0.02
Undecided									
Total Resources	160.70	78.74	76.43	163.10	79.92	82.67	165.50	81.10	83.78
Load Resource Balance	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Line 24: Mason 3's "Other" source will be BPA's Tier 2 product. Line 26: Mason 3's "Distributed Generation" source is solar.

City of McCleary << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by:

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	FY 2015	FY 2020	FY 2025
Period	**Annual**	**Annual**	**Annual**
Units	**(MWa)**	**(MWa)**	**(MWa)**
Loads	3.40	4.24	4.31
Resources:			
Future Conservation/Efficiency		0.03	0.03
Demand Response			
BPA Tier 1 (include BPA PF)	3.40	3.69	3.69
BPA Tier 2		0.52	0.59
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	3.40	4.24	4.31
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

City of Milton << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	6.55	7.91	8.12
Resources:			
Future Conservation/Efficiency		0.49	0.49
Demand Response			
BPA Tier 1 (include BPA PF)	6.55	7.42	7.63
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	6.55	7.91	8.12
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Modern Electric << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	25.85	26.07	26.47
Resources:			
Future Conservation/Efficiency		0.14	0.14
Demand Response			
BPA Tier 1 (include BPA PF)	25.85	25.93	26.33
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	25.85	26.07	26.47
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Nespelem Valley Electric Cooprative << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	7.44	9.28	9.67
Resources:			
Future Conservation/Efficiency		0.03	0.03
Demand Response			
BPA Tier 1 (include BPA PF)	7.44	5.79	5.79
BPA Tier 2		3.46	3.85
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	7.44	9.28	9.67
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Ohop Mutual Light Company << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	**Annual**	**Annual**	**Annual**
Units	**(MWa)**	**(MWa)**	**(MWa)**
Loads	9.26	9.83	9.89
Resources:			
Future Conservation/Efficiency		0.05	0.05
Demand Response			
BPA Tier 1 (include BPA PF)	9.26	9.78	9.84
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	9.26	9.83	9.89
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Okanogan County Electric << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Greg Mendonca - PNGC Power

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2014	2019	2024
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	6.66	6.65	6.52
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	6.56	6.42	6.42
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	0.10	0.23	0.10
Other			
Distributed Generation			
Undecided			
Total Resources	6.66	6.65	6.52
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in pla

For planning purposes Okanogan uses a market purchase as the future resource used to meet Above-RHWM Load, though it could be a combination of resources. PNGC did not include any conservation because the effect of conservation is built into our total retail load forecast just as BPA does in their forecasts. Due to this planning paradigm, conservation is always the resource of first choice.

PUD No 1 of Okanogan County << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Ron Gadeberg

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2016*	*2021*	*2026*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	74.25	78.00	82.00
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	45.46	45.46	45.46
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)	24.25	24.25	24.25
Wind	4.50	4.50	4.50
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	74.21	74.21	74.21
Load Resource Balance	-0.04	-3.79	-7.79

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Loads: Used Aug-Dec 2015 and Jan-Jul 2016. Resources: BPA based on Block/Slice contract (Block 20.405 Slice 25.058) Hydro Based on Critical Wells Project (8% of output)

Orcas Power and Light Cooperative << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Joel Mietzner P.E.

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	23.30	25.00	26.50
Resources:			
Future Conservation/Efficiency		0.20	0.35
Demand Response		0.10	0.15
BPA Tier 1 (include BPA PF)	24.50	24.90	24.80
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)	0.10	0.10	0.10
Wind			
Other Renewables	0.40	0.80	1.20
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	25.00	26.10	26.60
Load Resource Balance	1.70	1.10	0.10

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

In 2014 solar resources where mistakenly listed as Distributed Generation on line 24. This has been corrected in the 2016 submittal and solar generation moved to line 19..

Pacific Power and Light (PacifiCorp) <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Debi Winney

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2016**			**2021**			**2026**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads		701.39	518.79		764.75	546.90		790.38	561.72
Exports		64.54	24.45		23.40	18.32		15.68	10.53
Resources:									
Future Conservation/Efficiency					49.52	36.40		85.49	60.35
Demand Response					22.79	0.00		26.98	0.00
Cogeneration		0.00	0.00		0.00	0.00		0.00	0.00
Hydro		72.97	40.48		53.63	31.38		51.89	29.49
Wind		30.48	54.34		29.16	53.72		23.04	46.13
Other Renewables		18.76	12.92		33.87	27.79		31.21	25.32
Thermal - Natural Gas		198.21	118.13		192.16	98.73		189.05	103.72
Thermal - Coal		433.54	273.24		400.62	327.11		362.81	262.22
Net Long Term Contracts		2.00	6.67		0.00	1.79		0.00	0.00
Net Short Term Contracts		77.17	10.06		72.51	10.21		105.89	14.80
BPA		0.00	0.00		0.00	0.00		0.00	0.00
Other		11.16	-5.30		10.84	-5.24		10.66	-5.11
Imports		16.19	13.10		15.71	5.92		8.52	0.10
Distributed Generation		0.06	0.02		0.35	0.09		1.74	0.69
Undecided		0.00	0.00		0.00	0.00		0.00	0.00
Total Resources	0.00	860.55	523.65	0.00	881.17	587.90	0.00	897.29	537.72
Load Resource Balance	0.00	94.61	-19.60	0.00	93.02	22.67	0.00	91.23	-34.53

Date of Board/Commission Approval November-15 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Pacific Power and Light (PacifiCorp) <<< Utility Name

Notes/Explanation for category choices:
- Information is based on the 2015 Integrated Resource Plan Update filed with the Washington Utilities and Transportation Commission on March 31, 2016.
- 2015 IRP Acknowledgement Letter was issued on November 11, 2015.
- Row 10: Pacificorp includes Distributed Generation (DG) in the loads for the 2015 IRP Update, but as requested by Commerce we have added the DG back to the Loads and included the DG in Row 26.
- Row 13 & 14: PacifiCorp includes energy efficiency / demand response in its 2015 IRP Update load and resource balance. PacifiCorp is not including 2016 according to the instructions provided. PacifCorp's values for 2016 are as follows:
  - Row 13: Future Conservation / Efficiency = 13.4 MW, 10.2 MWa
  - Row 14: Demand Response = 23.5 MW, 0.0 MWa
- The Load Resource Balance in Capacity primarily reflects the 13% Planning Reserve Margin not included in Resources or Loads.

Pacific County PUD No. 2 << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Douglas L. Miller

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	34.88	37.47	37.88
Resources:			
Future Conservation/Efficiency		0.60	1.01
Demand Response			
BPA Tier 1 (include BPA PF)	35.97	36.87	36.87
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	2.70		
Other			
Distributed Generation			
Undecided			
Total Resources	38.67	37.47	37.88
Load Resource Balance	3.79	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Parkland Light and Water Company << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	**Annual**	**Annual**	**Annual**
Units	**(MWa)**	**(MWa)**	**(MWa)**
Loads	12.91	13.67	13.80
Resources:			
Future Conservation/Efficiency		0.07	0.07
Demand Response			
BPA Tier 1 (include BPA PF)	12.91	13.60	13.73
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	12.91	13.67	13.80
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Pend Oreille PUD << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Director, Power and Risk Management

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	96.18	26.96	30.32
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	20.00	0.00	
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)	76.66	81.60	81.60
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation	0.01	0.01	0.01
Undecided			
Total Resources	96.67	81.61	81.61
Load Resource Balance	0.49	54.65	51.29

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Line 24: We have 4 distributed generation customers at this time. All four are solar and the total capacity is less than 1/10th of a mw.

Peninsula Light << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Sharon Silver

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2030*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	66.79	67.79	68.79
Resources:			
Future Conservation/Efficiency		0.50	1.00
Demand Response			
BPA Tier 1 (include BPA PF)	66.79	67.29	67.79
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	66.79	67.79	68.79
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

City of Port Angeles << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Gregg King

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2021*	*2026*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	56.25	59.57	59.40
Resources:			
Future Conservation/Efficiency		0.30	0.30
Demand Response			
BPA Tier 1 (include BPA PF)	56.16	59.18	59.01
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	0.09	0.09	0.09
Other			
Distributed Generation			
Undecided			
Total Resources	56.25	59.57	59.40
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Puget Sound Energy <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Chris Schaefer

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2016**			**2021**			**2026**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	4,929.00	3,170.00	2,636.00	5,364.00	3,577.00	2,888.00	5,784.00	3,989.00	3,136.00
Exports	34.00	334.00	69.00	20.00	320.00	59.00	0.00	300.00	47.00
Resources:									
Future Conservation/Efficiency				411.00	245.00	275.00	669.00	431.00	470.00
Demand Response				121.00			130.00		
Cogeneration									
Hydro	897.00	781.00	521.00	897.00	777.00	516.00	897.00	777.00	500.00
Wind	74.00	74.00	251.00	74.00	74.00	251.00	74.00	74.00	251.00
Other Renewables									
Thermal - Natural Gas	2,008.00	1,852.00	1,155.00	2,028.00	1,852.00	1,155.00	2,028.00	1,852.00	1,155.00
Thermal - Coal	592.00	592.00	575.00	592.00	592.00	575.00	592.00	592.00	575.00
Net Long Term Contracts	492.00	300.00	358.00	405.00	395.00	408.00	15.00	4.00	5.00
Net Short Term Contracts	1,686.00	1,762.00		1,201.00	1,398.00		1,190.00	1,384.00	
BPA									
Other									
Imports	308.00	8.00	50.00	308.00	8.00	47.00	308.00	8.00	47.00
Distributed Generation									
Undecided									
Total Resources	6,057.00	5,369.00	2,910.00	6,037.00	5,341.00	3,227.00	5,903.00	5,122.00	3,003.00
Load Resource Balance	1,094.00	1,865.00	205.00	653.00	1,444.00	280.00	119.00	833.00	-180.00

Date of Board/Commission Approval n/a (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

The plan includes the least cost combination of conservation and supply-side resources to meet requirements, per WAC 480-100-238. This information is also available in PSE's 2015 Integrated Resource Plan, page B-11, filed with the Washington Utilities and Transportation Commission, Docket No. UE-141170.

City of Richland << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Elena Manzo

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	103.80	117.90	123.10
Resources:			
Future Conservation/Efficiency		3.50	6.70
Demand Response			
BPA Tier 1 (include BPA PF)	101.60	101.90	101.90
BPA Tier 2	2.00	3.00	1.00
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	0.00	5.00	5.00
Other			
Distributed Generation	0.20	1.50	3.50
Undecided		3.00	5.00
Total Resources	103.80	117.90	123.10
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in pla

Richland is choosing to meet its needs with least-cost resources until it grows large enough for the I-937 standards to apply.

Town of Ruston << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by:

Tacoma Power - Tom Martin

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	0.69	0.71	0.69
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)			
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	0.69	0.71	0.69
Other			
Distributed Generation			
Undecided			
Total Resources	0.69	0.71	0.69
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Projections for 2020 & 2025 are based on Tacoma Power's Load Forecast growth rate for General Service Customers.

Seattle City Light <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Aliza Seelig

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads			1,119.70			1,151.70			1,174.70
Exports			46.50			0			0.00
Resources:									
Future Conservation/Efficiency						78.20			142.80
Demand Response									
Cogeneration			1.80			2.45			2.45
Hydro			752.20			652.00			620.00
Wind			34.20			42.00			0.00
Other Renewables			13.70			12.00			12.00
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts									
Net Short Term Contracts									
BPA			567.50			514.00			513.00
Other			0.00						
Imports			40.30			0.00			0.00
Distributed Generation									
Undecided									
Total Resources	0.00	0.00	1,409.70	0.00	0.00	1,300.65	0.00	0.00	1,290.25
Load Resource Balance	0.00	0.00	243.50	0.00	0.00	148.95	0.00	0.00	115.55

Date of Board/Commission Approval August-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

1) Base year load is weather adjusted. 2020 and 2025 loads don't include conservation or demand reduction. 16) This row represents City Light's hydro resources and long-term hydro contracts. It also represents critical water condition for 2020 and 2025, and historical for 2015. 17) Stateline wind contract expires in 2021. 18) Other renewables include landfill gas and waste wood biomass. Burlington Renewable biomass contract expires in 2017. 23) Hydro portion of City Light's BPA slice contract represents critical water condition.

Port of Seattle - SeaTac Airport << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: **Trevor Emtman**

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	16.38	20.18	20.99
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	17.54	17.54	17.54
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	17.54	17.54	17.54
Load Resource Balance	1.16	-2.64	-3.45

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Skamania County PUD No. 1 << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	14.73	15.32	15.46
Resources:			
Future Conservation/Efficiency		0.05	0.05
Demand Response			
BPA Tier 1 (include BPA PF)	14.73	15.27	15.41
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	14.73	15.32	15.46
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

PUD #1 of Snohomish County <<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Ian Hunter

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	1,245.00	875.00	739.15			892.17			989.09
Exports	20.00	20.00							
Resources:									
Future Conservation/Efficiency						36.00			71.00
Demand Response									
Cogeneration	2.00	2.00	2.03			2.10			2.10
Hydro	100.00	28.00	46.54			36.30			36.30
Wind	3.00	90.00	48.61			54.10			41.60
Other Renewables			1.83						
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts									33.00
Net Short Term Contracts	125.00	50.00	-164.69						
BPA	1,028.00	725.00	806.67			811.00			811.00
Other	7.00								
Imports									
Distributed Generation						5.04			6.29
Undecided									
Total Resources	1,265.00	895.00	740.99	0.00	0.00	944.54	0.00	0.00	1,001.29
Load Resource Balance	0.00	0.00	1.84	0.00	0.00	52.37	0.00	0.00	12.20

Date of Board/Commission Approval 10/15 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

1) Base year is based on 2015 actual data

2) 5 and 10 Year Estimates are derived from the 2015 IRP Update adopted by the Snohomish PUD Board of Commissioners on 10/5/15.

3) The 2015 IRP Update did not include a one hour peak analysis.

PUD #1 of Snohomish County <<< Utility Name

4) For the Base Year, System Winter peak occurred on 12/30/15 hour ending 19:00; System Summer peak occurred on 6/29/15 hour ending 18:00.
5) "Loads" for the 5 and 10 Year Estimates are before new conservation and are at the total system level (i.e., retail sales + distribution line losses).
6) "Future Conservation/Efficiency" reflects new cumulative acquisition of Conservation as described in the 2015 Integrated Resource Plan.
7) Cogeneration consists of output from Hampton.
8) "Hydro" includes Jackson, Woods Creek, Youngs Creek and Packwood. Generation forecasted at Critical Water. The 5 and 10 year estimate also includes two new sma
9) "Wind" includes the output associated with long term power purchase agreements for the White Creek, Wheat Field and Hay Canyon wind projects. Wind is forecast
10) "Distributed Generation" for the Base Year include the PUD Solar Express program; the 5 and 10 Year estimates reflects the forecast of Customer-Owned Generati
11) "Net Short Term Contracts" reflect the net quantities of Snohomish PUD's short-term balancing purchases (+) and sales (-).
12) "BPA" reflects the Snohomish PUD's long-term contract with BPA for the Block/Slice product. BPA generation is forecasted at critical water.
13) "BPA" consists of a Block product and a Slice Product. For 2015, the Block product provided 375 aMW and the Slice product provided 432 aMW.
14) "Net Long Term Contracts" includes the average annual energy component of a planned Winter Energy Product
15) "Other" consists of an Energy Imbalance payback that occurred during the peak hour.

Town of Steilacoom << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	4.43	4.73	4.85
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	4.43	4.73	4.85
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	4.43	4.73	4.85
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

City of Sumas << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2015*	*2020*	*2025*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	3.57	3.77	3.84
Resources:			
Future Conservation/Efficiency		0.01	0.01
Demand Response			
BPA Tier 1 (include BPA PF)	3.57	3.76	3.83
BPA Tier 2			S
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	3.57	3.77	3.84
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Tacoma Power

<<< Utility Name

Washington State Utility

Integrated Resource Plan Year **2016**

Prepared by: Tom Martin

	Base Year			5 Year Estimate			10 Year Estimate		
Estimate Year		**2015**			**2020**			**2025**	
Period	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**	**Winter**	**Summer**	**Annual**
Units	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**	**(MW)**	**(MW)**	**(MWa)**
Loads	907.00		569.00			585.00			602.00
Exports									
Resources:									
Future Conservation/Efficiency						24.80			46.80
Demand Response									
Cogeneration									
Hydro	641.00		277.00			177.00			177.00
Wind									
Other Renewables									
Thermal - Natural Gas									
Thermal - Coal									
Net Long Term Contracts	4.00		32.00			32.00			11.00
Net Short Term Contracts									
BPA	529.00		419.00			399.00			399.00
Other									
Imports									
Distributed Generation									
Undecided									
Total Resources	1,174.00	0.00	728.00	0.00	0.00	632.80	0.00	0.00	633.80
Load Resource Balance	267.00	0.00	159.00	0.00	0.00	47.80	0.00	0.00	31.80

Date of Board/Commission Approval 12-16-2015 (mm/yy)

Notes: Explain resource choices other than conservation / Use of Renewable Energy Credits in planning/ Distributed Generation Sources

Tacoma Power <<< Utility Name

1) Loads are from a revised forecast that was issued after the IRP was published
2) Tacoma Power does not face capacity constraints in the summer when yearly loads are lowest and operating capacities are highest
3) 2015 loads and resources are based upon actual values
4) 2020/25 resources are based upon critical water estimates
5) BPA values are from the 2015 IRP and do not reflect revised estimates
6) The actual average MWh load for 2015 is weather normalized, the peak MW load is the actual load

Tanner Electric << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	10.94	12.12	13.10
Resources:			
Future Conservation/Efficiency		0.10	0.10
Demand Response			
BPA Tier 1 (include BPA PF)	10.94	10.86	10.86
BPA Tier 2		0.16	0.15
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)		1.00	2.00
Other			
Distributed Generation			
Undecided			
Total Resources	10.94	12.12	13.11
Load Resource Balance	0.00	0.00	0.01

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Vera Water and Power << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: Kevin Wells

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*2016*	*2021*	*2026*
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	25.44	27.60	28.39
Resources:			
Future Conservation/Efficiency			
Demand Response			
BPA Tier 1 (include BPA PF)	25.44	26.60	26.39
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)	0.00	1.00	2.00
Other			
Distributed Generation			
Undecided			
Total Resources	25.44	27.60	28.39
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval June-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

Market purchases are the most flexible and lowest cost resource right now. As you can see we may be facing declining loads and have not committed for any new resources beyond the current BPA rate purchase period.

Wahkiakum County PUD No. 1 << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: BPA

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	2015	2020	2025
Period	Annual	Annual	Annual
Units	(MWa)	(MWa)	(MWa)
Loads	4.64	4.91	4.91
Resources:			
Future Conservation/Efficiency		0.02	0.02
Demand Response			
BPA Tier 1 (include BPA PF)	4.64	4.89	4.89
BPA Tier 2			
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	4.64	4.91	4.91
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan

P.U.D. No.1 of Whatcom County << Utility Name

Washington State Utility Resource Plan Year **2016**

Prepared by: **Brian Walters**

	Base Year	5 Yr. Est.	10 Yr Est.
Estimate Year	*BPA FY 2015*		
Period	***Annual***	***Annual***	***Annual***
Units	***(MWa)***	***(MWa)***	***(MWa)***
Loads	25.12	26.78	26.98
Resources:			
Future Conservation/Efficiency		0.60	0.60
Demand Response			
BPA Tier 1 (include BPA PF)	25.12	26.18	26.38
BPA Tier 2	0.00	0.00	0.00
Non BPA:			
Co-generation			
Hydro (critical water)			
Wind			
Other Renewables			
Thermal-Natural Gas			
Thermal-Coal			
Market Purchase (non BPA)			
Other			
Distributed Generation			
Undecided			
Total Resources	25.12	26.78	26.98
Load Resource Balance	0.00	0.00	0.00

Date of Board/Commission Approval September-16 (mm/yy)

Notes: Explain resource choices other than conservation / Use of renewable energy credits in plan