

Chapter 13: Bonneville’s Obligations

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SUMMARY OF KEY FINDINGS

Bonneville engaged in an extensive, multi-year set of regional processes, culminating in the Regional Dialogue in 2007 and power-sales contracts in 2008, to define its future power supply role. The Council strongly supported and participated in these processes and offered a number of recommendations as part of the Fifth Power Plan, which were addressed in the Regional Dialogue.

Bonneville adopted a Regional Dialogue Policy, which defined its potential resource-acquisition obligations for power sales after 2011, whether at Tier 1 or Tier 2 rates. The administrator’s potential future obligations also include additional firm energy, capacity, and flexibility for integrating wind power into Bonneville’s balancing area. Its obligations to provide flexibility for wind-power balancing also are driven by its obligations under NERC standards as the host balancing authority for wind-power resources that are meeting load elsewhere, primarily in California.

The Council’s analysis, while it looks at regional capacity and energy requirements, does not break out utility-specific capacity and energy requirements and does not look at within-hour issues like flexibility. Thus there might be specific Bonneville obligations that are not addressed in detail in the Sixth Power Plan. The size of these obligations for Bonneville is, however, not well known at this time because it will be driven by choices of Bonneville’s customers and the amount of wind power that is located in Bonneville’s balancing area whether to serve its customers, other regional utilities, or for sale outside of the region. These will not be known until after the adoption of the plan. Moreover, the supply of resources available to meet these obligations, particularly for additional flexibility to deal with wind integration, is uncertain at this time. There are, for instance, a number of regional and West-wide discussions underway about institutional and business practice changes to help balancing authorities deal with these issues.

Because of these uncertainties, the Council has several general principles to guide Bonneville should it need to acquire resources to meet any of these several kinds of obligations. They are, briefly:

- Aggressively pursue the Council's conservation goals first
- Aggressively pursue the various institutional and business-practice changes to reduce the demand for flexibility and to use the existing system more fully
- Look broadly at the cost-effectiveness and reliability of possible sources of new capacity and flexibility, such as gas or other generation types, and take into account synergies in meeting several types of needs with single resources

STATUTORY BACKGROUND

The Northwest Power Act gave the Bonneville Power Administration new authorities and new responsibilities. It authorized the Bonneville administrator to acquire resources to meet the administrator's obligations. At the same time, it obligated the agency to serve the loads placed on the agency by preference customers and the investor-owned utilities (IOUs). The Act also authorized sales to federal agency customers and to the direct-service industries (DSIs). Sales to the DSIs must provide a portion of the reserves available for meeting the administrator load obligations.

The Act also gave new authority to the member states of the Pacific Northwest Electric Power and Conservation Planning Council (Council), the interstate compact authorized by the Act. Congress directed the members of the Council, appointed by the governors of the member states, to develop a 20-year regional power plan. One component of that plan is the Council's fish and wildlife program, intended to protect, mitigate, and enhance fish and wildlife, and related spawning grounds and habitat, that have been affected by the construction and operation of hydropower dams in the Columbia River Basin. The Council's power plan is meant to assure the Pacific Northwest of an adequate, efficient, economical, and reliable power supply. Bonneville, with certain narrow exceptions, must act consistently with the power plan in its resource-acquisition activities. This consistency requirement is most prominent when Bonneville proposes to undertake a number of actions related to a major resource, that is, a resource that has a planned capability greater than 50 average megawatts and is acquired for a period of more than five years. Thus, Congress intended the four Northwest states to have some say in Bonneville's resource-acquisition activity.

Bonneville occupies a unique, dual role in the region's utility system. On one hand it functions as a utility business, supplying energy, load-following, reserves, and transmission. Indeed, the agency markets the output of the federal base system (FBS), which consists of 31 federal hydroelectric projects (29 in the Columbia River Basin and two outside the basin), one non-federal nuclear plant, and several other small non-federal power plants. As noted, Bonneville also acquires resources to meet customer loads. In acquiring resources, the Act directs Bonneville to make cost-effective conservation the resource of first choice. To carry out that function, Bonneville also manages programs that help utilities acquire conservation. Bonneville accounts for the amount of conservation acquired and verifies savings. These functions are important in assuring the region that ratepayer funds are being expended in a business-like fashion. To enhance the range of conservation resources that will be available in the future, Bonneville also funds research and development. The resource of second choice under the Act is renewables. Bonneville both acquires renewables, as it has added about 245 megawatts of wind power to its portfolio of resources, and provides integration services, both for its own renewable

resources and for wind located in its control area but owned by others. In acquiring renewable resources, Bonneville first adds to its power supply to meet its total contractual load obligation and secondarily assists its customers who are obligated to meet renewable portfolio standards (RPS) set by their respective states. Again, Bonneville also supports research and development in the realm of renewable resources, to expand the amounts and sorts of renewables that will be available in the future.

On the other hand, in addition to its utility business functions, Bonneville is also a federal agency, to which Congress entrusted defined public purposes. The Act gave Bonneville the responsibility of funding efforts to restore fish and wildlife affected by the hydroelectric dams on the mainstem Columbia River and its tributaries. Among other public purposes, the agency also funds low-income weatherization programs through local public utilities, at the administrator's discretion.

BONNEVILLE'S EVOLVING ROLE

Bonneville's evolving role in the changing electricity utility industry has been the subject of a number of public processes that have garnered widespread regional participation. These processes ultimately were reflected in recommendations from the Council in its Fifth Power Plan and decisions by Bonneville in its Regional Dialogue Policy.

The Comprehensive Review of the Northwest Energy System in 1996, the 1997 Cost Review, the Joint Customer Proposal in 2004, and the administrator's 2005 Power Supply Role for fiscal years 2007-2011 all examined the issue of Bonneville's role in the region's electricity system. Each step in this series of discussions contributed to or modified in some way the region's thinking about what role Bonneville should serve. Naturally, not every entity that took part in each process endorsed every recommendation.

Impetus for these various processes derived from the restructuring and deregulation of the nation's electricity industry following passage of the National Energy Policy Act of 1992. Bonneville, the marketer of nearly half the electricity consumed in the region, faced an unusual and troubling situation. The agency's longstanding customers suddenly sought to diversify their wholesale power sources away from Bonneville by purchasing from competitive, lower-cost providers of electricity. In the mid-1990s, there were concerns that Bonneville's high fixed costs, including the debt on the Federal Columbia River Power System (FCRPS) and its past investments in nuclear power plants, would make it uncompetitive in the wholesale power market. Against this background, the region determined it was time to give serious thought to Bonneville's role in the region's electricity system.

The Council's Recommendations for Bonneville's Future Role in Power Supply

The Council recognized that recommendations from these various regional processes had a number of principles in common. Three were particularly important. The first was preserving the region's low-cost hydroelectric resources through long-term contracts. Second was improving preference customer utilities' and federal agencies' incentives to meet their load growth with responsible resource choices by charging an individual utility that chooses to have Bonneville meet its needs beyond the capability of the existing FCRPS the cost of incremental

supplies. The third was providing equitable and predictable benefits to the residential and small-farm customers of the region's investor-owned utilities.

Based on these considerations, the Council developed its own set of recommendations regarding Bonneville's future role in power supply for the Fifth Power Plan. As summarized here, these remain the Council's recommendations regarding Bonneville's role:

- Bonneville should market the output of the existing FCRPS to eligible customers at cost. Customers that request more power than Bonneville can provide from the existing federal system should pay the additional cost of providing that service. This change in role should be implemented through 20-year contracts that should be offered as soon as possible, and compatible rate structures.
- Bonneville should develop a clear and durable policy regarding the agency's future role in resource acquisition, to guide contract negotiations and future rate cases.
- To implement its new role, Bonneville should allocate the power from the existing FBS among eligible customers through a process that minimizes opportunities for gaming the process.
- Bonneville should move to implement tiered rates as soon as practicable; if they cannot be offered in new contracts by October 2007, the Council would consider recommending their implementation under the existing contracts.
- Bonneville should offer the full range of products currently available, such as requirements, block, and slice products. The costs of each product should be confined to the purchasers of that product, avoiding cross-subsidies.
- If Bonneville offers service to the DSIs, the amount of power and term should be limited, the cost impact on other customers should be minimized, and Bonneville should have the right to interrupt service to maintain system stability and cover any temporary power supply inadequacy.
- Bonneville should find a stable and equitable approach to offer benefits of low-cost federal power to the residential and small-farm customers of the IOUs for a significant period.
- Bonneville and the region's utilities should continue to acquire the cost-effective conservation and renewable resources identified in the Council's power plans. Bonneville's role could be reduced to the extent customers can meet these objectives. But, if necessary, Bonneville must use the full extent of its authorities to ensure that the cost-effective conservation and renewables identified in the Council's power plan are achieved on all its customers' loads. The Council committed to working with Bonneville, utilities, the states, regulatory commissions, and other regional and West-wide organizations to ensure that appropriate adequacy policies are in place and that the data and other tools to implement the policies are available.
- Bonneville should continue to carry out its fish and wildlife obligations, allocating its mitigation costs to the existing FCRPS.

The Regional Dialogue

The concepts that emerged from the Comprehensive Review and the Joint Customer Proposal, as well as the Fifth Power Plan, have been addressed in subsequent discussions among Bonneville, its customers, state agencies, regulatory bodies, the Council, and public interest groups in a process called the "Regional Dialogue." The Regional Dialogue concluded in 2007 with a set of policy decisions by Bonneville to guide development of tiered rates and new power-sales contracts to replace the contracts that expire in 2011. The highlights of the Regional Dialogue Policy, as expressed when the policy was adopted, follow.

- Bonneville will offer contracts to all its customers, public utilities, IOUs, and DSIs; at the same time. For public utilities, Bonneville will develop new 20-year contracts accompanied by a long-term Tiered Rate Methodology (TRM). Through the contracts and TRM, each public utility will get a High-Water Mark (HWM) that defines the amount of a customer's load that can be served with Federal power at BPA's lowest cost-based Tier 1 rate. To meet load above the HWM customers can choose to purchase power from either non-federal resources or from Bonneville at rates reflecting Bonneville's marginal cost of acquiring the additional power, or through a mix of Bonneville Tier 2 priced power and non-federal resources.
- Bonneville will acquire resources, if necessary, to supply up to 250 megawatts at the Tier 1 rate to new public utilities (including new and existing public body tribal utilities).
- Bonneville will acquire resources to augment the existing system by the lesser of 300 megawatts or the amount needed to meet utilities' HWMs based on their Fiscal Year 2010 loads. At the 300-megawatt cap, this would be roughly a 4-percent increment to the existing system and is in addition to any acquisitions to serve new public utilities.
- Bonneville will offer three product choices: load-following, block, and slice. The load-following product will include services to follow the actual loads a customer experiences. Slice and block products do not include load-following service.
- Bonneville will increase the amount of power sold under the slice product from the current 22.6 percent to as much as 25 percent of the power available from the FBS resources.
- Bonneville acknowledged that service to the DSIs had not been resolved and so that issue was not decided in this policy.
- Bonneville omitted a section on the residential exchange, due to then-recent decisions from the Ninth Circuit. Nonetheless, Bonneville's goal is to ensure that the residential and small-farm customers of the IOUs receive a fair and reasonably stable share of the benefits from the federal system over the long term, consistent with law, that will parallel the certainty obtained by public utilities.
- Bonneville will institute a regional cost review to give customers and other stakeholders opportunities to comment on Bonneville's costs.

- Bonneville established guidelines for dispute resolution, in response to customer requests, but noted that final decisions in this arena likely will be taken in conjunction with development of the TRM and power sales contracts.
- Bonneville will pursue the development of all cost-effective conservation in the service territories of public utilities served by Bonneville and of renewable resources based on its share of regional load growth. Bonneville expects these goals to be met to a significant extent through programs initiated and funded by its public utility customers. Bonneville will supplement and facilitate utility initiatives. Bonneville will provide the necessary integration services to customers that wish to acquire non-federal renewable resources to meet their load growth and enhanced incentives for conservation development.
- Bonneville will require its customers to provide their load and resource data and resource development plans necessary to track regional implementation of the voluntary resource adequacy standards adopted by the Council. Bonneville did not make compliance with the standards a contractual requirement.
- Bonneville will propose stable and predictable low density discount (LDD) and irrigation rate mitigation (IRM) programs in future rate proceedings. Bonneville will ensure that the LDD approach will not bias customers' choices between taking power at a Tier 2 rate from Bonneville or from non-federal resources.

These policy choices did not conclude the Regional Dialogue process. Negotiation and drafting of new contracts, their release for public comment, and eventual execution were to follow. Bonneville also committed to a review of its Northwest Power Act sections 5(b)/9(c) policy. The TRM was to be developed in a separate Northwest Power Act Section 7(i) process, as were rates to be effective for power sales under the Regional Dialogue contracts in Fiscal Year 2012. The Regional Dialogue policy decisions were meant to inform those subsequent processes, but it did not decide them.

Bonneville's Posture Today; its Response to Regional Recommendations

Late last year Bonneville signed 20-year contracts with all its public utility customers. This was the culmination of a lengthy public process in which all parties had the opportunity to address the terms and conditions under which Bonneville would offer power to its customers. The fact that these contracts are long-term should help ensure the stability of the relationship between Bonneville and its customers. Knowing that Bonneville will have this long-term, stable financial relationship with its customers should also bolster confidence that Bonneville will be able to meet its annual payment to the U.S. Treasury. The contracts also support Bonneville's commitment to conservation and renewables, as well as to meeting its fish and wildlife costs.

Bonneville has also developed and is preparing to implement a Tiered Rate Methodology. Bonneville will sell electricity from the existing FCRPS to eligible customers at cost. To ensure that it has sufficient resources to meet the initial demand, Bonneville will augment the federal base by acquiring a limited amount of additional resources, the cost of which it will meld with the cost of the existing system. This initial demand will be sold at priority firm (PF) Tier 1 rates. Customers that place more demand on Bonneville, that is, load above their individual high-water

mark, will pay PF Tier 2 rates for that service, which will recover the costs of additional power needed to meet this demand. Note that Bonneville has reached an accommodation with a number of small customers that do not view themselves as well-situated to acquire new resources on their own. Participants in this Shared Rate Plan will not face Tier 2 rates for individual growth, but if Bonneville has to acquire resources to meet the overall growth of the pool, costs will be shared among all participants in this subset of customers.

This tiered rate structure should meet several goals in the recommendations the region has offered. First, tiered rates will make clear who has responsibility for resource development. This structure should result in customers seeing the true cost of adding resources, which will provide better incentives for resource choices. It will also prevent the dilution of the value of the existing federal system that results from melding the costs of new and more expensive resources.

Bonneville also has responded to direction from the Ninth Circuit and reworked its Residential Exchange Program (REP). To accomplish this, the agency revised and implemented a new average-system-cost methodology, the result of a lengthy and comprehensive consultation process with customers, interested parties, and the Council. Bonneville aimed at sharing with the residential and small farm customers of the IOUs the benefits of the generally lower cost FCRPS, both over the time when payments were made under settlements struck down by the Ninth Circuit, the look-back period, and going forward. The issues are again being litigated, and the customers are now discussing a negotiated settlement to try to resolve the uncertainty in the REP methodology under the Act.

These changes in Bonneville's future role do not change Bonneville's fundamental responsibility to serve the loads of qualifying customers that choose to place load on Bonneville; it does not change Bonneville's responsibility for ensuring the acquisition of Bonneville's share of all cost-effective conservation and renewable resources identified in the Council's plan; and it does not change Bonneville's responsibility to fulfill its fish and wildlife obligations under the Act and the Council's fish and wildlife program. It does represent a change in the way Bonneville traditionally has carried out those responsibilities.

Some important policies Bonneville has adopted to implement the recommendations of these public processes and the Regional Dialogue Policy have recently been challenged in the Ninth Circuit. As of the date of the release of this draft plan, more than 40 petitions have been filed that could result in the invalidation of how Bonneville has responded to earlier judicial decisions directing the agency to implement the REP in line with the directives of the Northwest Power Act, its determination of how to make the preference customers whole, and its adoption and implementation of the tiered rates concept. Depending on the outcome of these challenges, the region may need to undertake a variety of efforts to enable Bonneville to serve the roles identified in the long series of public processes outlined above and in the Regional Dialogue Policy.

THE ADMINISTRATOR'S RESOURCE REQUIREMENTS

The Northwest Power Act requires that the Council's power plan "shall set forth a general scheme for implementing conservation measures and developing resources pursuant to section 6 of this Act to reduce or meet the Administrator's obligations." The Act requires the plan to give "priority to resources which the Council determines to be cost-effective," and also ranks types of

resources by priority: "Priority shall be given: first, to conservation; second, to renewable resources; third, to generating resources utilizing waste heat or generating resources of high fuel-conversion efficiency; and fourth, to all other resources."

When Bonneville acquires resources, the Power Act then requires that, with certain narrow exceptions, all of Bonneville's resource actions be consistent with the Council's power plan. The Council engages in an extended planning process for developing and amending the power plan. It gathers experts in advisory committees on important subjects the plan treats: generating resources, conservation, and natural gas, for several examples. These committees both contribute technical information for use in the plan and evaluate analysis done by Council staff and others. It is the staff's analysis and synthesis, combined with public input and comment, that form the basis for the Council members' decisions when they adopt a plan or a plan amendment. Bonneville participates in the Council's process, sometimes as a member of an advisory committee, sometimes as a contributor to studies or analyses, and sometimes as a commenter on draft Council positions. Being fully apprised of the thinking that underlies a final Council plan should enable Bonneville to ensure that its own resource assessments and acquisitions build on the Council's planning process and are consistent with the plan.

The Council's power plan is first developed from a regional perspective. Much of the technical analysis for the plan assumes that the electrical loads in the region are served by all of the electric generation and conservation resources available in the region, without respect to specific utility loads and resources. The result is a regional resource strategy that minimizes costs and risks as if the entire region were served by all the resources and transmission in the region. The Power Act also requires, however, that the Council's power plan specifically include a resource plan for Bonneville to act consistent with as it works to meet its current and future obligations. For this plan, the Council has examined Bonneville's particular power system needs as described in this chapter. The Council did not develop its own quantitative forecast of Bonneville's loads and resources, concluding that analyses by Bonneville of its projected loads and resources will be more than sufficient for the Council to rely on here for planning purposes, with an understanding of further work to come as described below. The Council has distilled the plan's regional resource strategies into a set of resource-acquisition strategies specifically related to Bonneville and described in this chapter.

The Council expects Bonneville to acquire resources consistent with the power plan. Bonneville recently released a Draft Resource Program, intended when final to guide the agency's resource-acquisition choices for the next 10 years. As noted below, the Draft Resource Program describes Bonneville's expected loads and resources in much finer detail than is possible in this plan, yet appears to be appropriately based in the power planning efforts of the Council and reflects the resource strategies in this plan. The Council expects Bonneville's final Resource Program to do the same.

Conservation Resources

Section 6(a)(1) of the Northwest Power Act obligates Bonneville to "acquire such resources through conservation . . . as the Administrator determines are consistent with the [Council's power] plan." And as noted, the Act further requires the Council to give first priority in the plan to cost-effective conservation resources. The power plan's conservation measures thus have real legal meaning for Bonneville and real effects on Bonneville's utility customers in terms of

conservation's ability to reduce the need for Bonneville or the utilities to acquire lower-priority or higher-cost resources and in terms of the costs of conservation acquired by Bonneville and its customers.

The acquisition of cost-effective conservation by Bonneville through an ongoing program is not conditioned in the Power Act on whether Bonneville is or soon will be out of load-resource balance and therefore in need of additional resources. Rather, the point of this provision and of the structure of the Power Act as a whole is that conservation is a resource used to serve firm power loads by reducing consumer demand for electricity. As such, conservation lessens the need for Bonneville to acquire power generated by conventional generating resources that are more expensive than the costs of the hydrosystem. The Regional Dialogue's new power supply paradigm for Bonneville does not alter the legal or practical framework for Bonneville's ongoing conservation program. Bonneville's customers are still placing load on the agency and Bonneville is planning to acquire resources to serve its contractual load obligations, including potential loads above customer high-water marks and possibly direct-service industrial loads. Bonneville thus will need to continue to acquire cost-effective conservation to reduce loads and stretch the Federal Base System, consistent with the conservation provisions of this plan.

For this reason, the principal recommendation regarding Bonneville in the Sixth Plan, as in past plans, is that Bonneville aggressively pursue its share of the Council's regional conservation goals. This is to ensure that Bonneville meet whatever load it faces, whether served at Tier 1 or Tier 2 rates, efficiently and as cost-effectively as possible.

Bonneville and its customers understand the basic principle and through their actions have sustained the conservation program for decades. However, they have expressed concerns about the particulars here, that is, about the greater number of conservation measures, about the expanded conservation goals, and about what mechanisms might ensure that Bonneville achieves its share of the regional conservation goals. Even as concerns over the near-term targets are being worked out in collaborative discussions, the utility customers have remained generally concerned about having goals, methods, measures, and costs imposed on them by Bonneville to satisfy the plan. Under Bonneville's new resource policy, utility customers are responsible for the marginal costs of new resources acquired to meet their load growth, whether acquired by themselves or from Bonneville at Tier 2 rates. For this reason, the utilities believe it is in their interest to implement conservation programs tailored to their particular needs, programs that can serve to satisfy the plan's conservation goals, without mandates from Bonneville and with measures and costs the utilities themselves control.

In response, the Council believes Bonneville has the discretion to tailor its conservation program to match this new power supply paradigm and to assuage the utility customers' concerns, in a way consistent with the principles the Council recently outlined:

1. Conservation targets. Bonneville should continue to commit that its public utility customers will meet Bonneville's share of the Council's conservation targets. Bonneville should ensure that public utilities have the incentives and the support to pursue sustained conservation development. Active utility commitment to conservation should continue to be a condition for access to Bonneville power at Tier 1 rates.

2. Utility reporting. Bonneville has included in its power sales contracts requirements for utility reporting and verification of conservation savings so that Bonneville and the Council can track whether conservation targets are being achieved.
3. Implementation mechanism. Bonneville should offer flexible and workable programs to assist utilities in meeting conservation goals, including a backstop plan, should Bonneville and utility programs be found insufficient.
4. Regional conservation programs. Bonneville should continue to be active in funding and implementing conservation programs and activities that are inherently regional in scope, such as NEEA.

It should be emphasized that the Council's conservation methodology calculates conservation potentials for certain measures that might, at some point, be covered by building or energy codes, and then assumes that the savings will be accomplished over time by *either* utility programs or codes. The utilities should include these cost-effective, available conservation measures in their own plans and programs. However, *if* codes are adopted that ensure the capture of the potential savings, then the utilities may count the resulting savings in their service territories against the regional target. The Council in return expects the utilities to join with the Council, the governor's offices, and other relevant state and local agencies in their support of the necessary state and national improvements in codes and standards.

Additional Resources

Along with the conservation program, the power plan is to set forth a general scheme for developing other resources if needed to meet the administrator's obligations. Bonneville may need additional resources for a number of reasons. These include Bonneville's proposal to acquire resources to augment the existing system to serve the "high-water mark" load of its preference customers at Tier 1 rates; additional energy resources if needed because one or more customers call on Bonneville to meet their load growth, at Tier 2 rates reflecting the costs of the additional resources; additional resources to serve DSI loads, if Bonneville decides to offer such service; additional resources that may be necessary for capacity and within-hour flexibility purposes, such as to support the integration of intermittent renewable resources like wind; additional resources as may be necessary for system reserves, system reliability, and transmission support; and additional resources if necessary to assist the administrator in meeting Bonneville's fish and wildlife obligations under Section 4(h) of the Northwest Power Act. Conservation resources will help reduce the need for additional resources but are unlikely to address all of these needs. The Council is not undertaking at this time a detailed, quantitative assessment of Bonneville's need for additional resources, given the extent to which the overarching decisions and information that will affect this assessment are uncertain or in development. Instead, the Council is setting forth further information and a set of principles in this section (and linked to other chapters in the plan) to help guide any decisions by Bonneville to acquire additional resources consistent with the plan and the provisions of the Power Act:

Bonneville anticipates acquiring resources on a long-term basis to meet its obligations under the new Regional Dialogue power sales contracts. In the Long-Term Regional Dialogue Final Policy, Bonneville said it would acquire up to 300 average megawatts of power to augment the existing system to meet the "high-water mark" load of its preference customers at Tier 1 rates.

In addition to augmenting energy to meet preference customer high-water-mark demand, the Regional Dialogue Policy also provides that over the 20-year contract period, Bonneville may augment its energy supplies by up to 250 average megawatts of power to be sold at the Tier 1 rate to serve any newly created public utilities. Additional high-water marks for new publics will be limited to 50 average megawatts in each rate period, that is, in any two year period. Of the 250 average megawatts, Bonneville has designated 40 average megawatts for service, on a first-come, first-served basis, at Tier 1 rates for recently created or future tribal utilities that experience load growth beyond their high-water marks. Bonneville also committed to augmenting its energy supplies by up to 70 average megawatts to meet possible expansions of the Department of Energy's Richland facilities.

Beyond the Regional Dialogue provision to augment energy supplies by up to 620 average megawatts to be sold at Tier-1 rates, as described above, Bonneville may also be required to acquire resources to meet loads that are beyond a customer's high-water mark if the customer calls on Bonneville to meet its load growth. The amount of power sold to supply a customer's above-high-water-mark load will be subject to a Tier 2 rate. This service is by definition flat, so if Bonneville acquires resources to meet these loads, it will offer power in flat blocks. Further, Bonneville's service to direct-service industrial (DSI) customers has not been determined and could require additional resource acquisitions in the future. As of the time of this draft, Bonneville and the DSI customers have not reached an agreement regarding service of those industries.

Historically, Bonneville has purchased resources to serve the average annual energy needs of its customers. Given the reductions in the ability of the hydropower system to support the integration of intermittent resources like wind, it is more likely that Bonneville will focus on acquiring resources that offer both added capacity and flexibility that cannot be provided by conservation. Bonneville is designing such products in its Resource Support Services (RSS). For example, if a customer decides to meet its own load growth with new resources that have little or no firm capacity and operate intermittently, Bonneville will not require that utility to convert such resources into resources that can be used to meet firm loads by acquiring capacity, firming up the energy, and reshaping the output. Instead, Bonneville will do this for the customer and charge a resource-shaping charge, one of the RSS. Because many of Bonneville's customers are acquiring wind to meet state-imposed Renewable Portfolio Standards, this may prove to be an important Bonneville service.

Bonneville also will acquire resources to offer ancillary services to its utility and transmission service customers. These are flexibility services such as regulation, load-following and balancing services, spinning reserves, non-spinning reserves, supplemental reserves, and voltage control. Bonneville will need to provide some of these services to support resources, such as a good portion of the wind generation physically located in Bonneville's balancing authority area, that serve load outside the agency's balancing area. Resources needed for this service will be chiefly those that offer added capacity and flexibility. The resource strategy laid out in this plan acknowledges Bonneville's potential need to acquire capacity resources to meet heavy-load-hour demand and provide the flexibility needed to integrate intermittent resources.

Bonneville recently completed its 2009 Draft Resource Program, designed to assess its potential resource needs as of 2013 and 2019. Significant uncertainties remain at this time, though some will be resolved by the time of the final Sixth Plan. Bonneville's customers will have made their

resource choices for at least the 2012-2014 period by November 1, 2009, which will have established the amount of Bonneville's requirement for this period to serve above-high-water-mark load. The other uncertainties described above (e.g., augmentation for new public loads) will not have been resolved at this time. In its Draft Resource Program, Bonneville looked at the effect of all of the potential above-high-water-mark loads being placed on the agency.

The effect of potential RSS requirements would be no bigger than the effect of the potential above-high-water-mark loads themselves, so the potential effect of RSS on Bonneville requirements is covered by Bonneville's discussion of the potential effect of above-high-water-mark load placement in the Draft Resource Program.

Not only will the magnitudes of some of the requirements be unknown, but the availabilities of potential solutions, are, in some cases, not known either, because they will depend on ongoing regional and West-wide efforts. This is the case for solutions to the balancing problems Bonneville faces in integrating the large amounts of wind generation that appear likely to be developed in its balancing authority. Several institutional solutions that would relieve or mitigate the burden facing Bonneville's balancing authority are being discussed and developed by Bonneville's Wind Integration Team, which recently released a two-year work plan, and by the ColumbiaGrid/NTTG/WestConnect Joint Initiative, in which Bonneville, as a member of ColumbiaGrid, is participating.

These different kinds of needs can interact with each other. For instance, some kinds of resources that might be valuable for meeting capacity needs also could provide flexibility for managing wind fluctuations, or, alternatively, resources that might be required to meet flexibility needs, if institutional changes in business practices prove insufficient, also could provide resources to meet capacity requirements. However, the generating resources that might be best at providing flexibility, because they have wide operating ranges, might not be optimized to provide the cheapest energy.

The Council's analysis, while it looks at regional capacity and energy requirements, does not break out utility-specific capacity and energy requirements and does not look at within-hour issues like flexibility. Thus there might be specific Bonneville needs that are not explicitly addressed in detail in the plan.

First, there are some kinds of resources that the Council considers in its analysis, both for the plan specifically and for its annual adequacy assessments, that specific utilities may or may not want to purchase or acquire. Specifically these are out-of-region purchases and in-region uncontracted IPP generation. The Council considers these as available to meet regional loads, but they are not owned or contracted for by any in-region load-serving entity. (For more on this distinction, see Chapter 14.) For any in-region utility, they are potential resources, like others, that would need to be evaluated based on cost and risk.

Second, Chapter 12 of the plan describes various ways of meeting flexibility needs (both business practice changes and types of new generation). It suggests that the institutional and business practice changes are likely to be the easiest and cheapest. It does not, however, describe the total amounts of flexibility that would be available through all the various business practice changes, or the time frame within which they would all be available, because those issues are still being examined by various regional and WECC entities.

Because of this, the plan's recommendations for Bonneville's response to Bonneville's needs described above cannot be precise with regard to specific resources or strategies to meet those needs nor to their timing. Here is a set of general principles Bonneville should follow, with corresponding provisions in the Action Plan:

The first, and major principle, is that Bonneville aggressively pursue the Council's conservation goals. This will ensure that the customer load that remains, whether at Tier 1 or Tier 2 rates, is as efficient as is cost effective.

A second principle is that Bonneville should aggressively pursue the various institutional solutions to its balancing needs that are currently being discussed before acquiring power produced by new generation. These institutional changes, better forecasting, shorter scheduling windows, markets for the exchange of balancing services among balancing authorities, generation owners and operators, and demand-response providers, as well as other actions have the potential to be significantly more efficient and faster to develop than new generation to provide these services.

A third principle is that Bonneville should take a broad look at possible resource acquisitions for additional capacity and flexibility, if it turns out that resources are needed to meet its obligations. While Chapter 12 gives an overview of the business practice changes and generating technologies that are available to meet these needs, the possible synergies in simultaneously meeting both capacity and flexibility requirements need to be taken into account, and the possibility of newly developed technologies, including a smart grid and storage, should also be considered. Bonneville should take a similarly careful look at possible resource strategies and resources choices, if needed to meet its obligations in the other areas listed at the beginning of this section, including for reserve and reliability requirements and for transmission support.

Preliminary Conclusions Regarding Bonneville's Draft Resource Program

Despite the remaining uncertainties, the Draft Resource Program characterizes Bonneville's expectations and intentions sufficiently to be able to judge their alignment with the Council's principles and recommendations. Bonneville has committed to "ensuring achievement" of the public-power share of the conservation identified in the Council's plan. The Draft Resource Program says that, depending on the amount of load it must serve, Bonneville will meet most of the load that remains after conservation with short- to medium-term market purchases. Bonneville also says it intends to investigate other resources, as described in the Council's draft Sixth Plan.

It also describes its efforts to develop new institutional mechanisms and business practices as first approaches to its unmet balancing-resource needs, with investigation of other resources, such as those described in the plan, to meet any remaining flexibility requirements.

Bonneville's assessment of its potential needs and description of proposed actions for meeting those needs in its Draft Resource Program reflect the principles expressed above.

Major Resources

If Bonneville proposes to undertake a suite of activities related to the acquisition of a *major* resource, Section 6(c) of the Act requires the Administrator to conduct a public review of the proposal and make findings, taking into account the public comment. A major resource under the Act is one that is greater than 50 average megawatts and is acquired by the Administrator for a period of more than five years. This review provision applies to any proposal: (1) to acquire a major generating resource, (2) to implement an equivalent conservation measure, (3) to pay or reimburse investigation and preconstruction expenses for a major resource, or (4) to grant billing credits or services involving a major resource.

One of the findings Bonneville must make is whether a proposed action is consistent with the Council's plan. After Bonneville has made its finding, the Council has an opportunity to undertake its own review of the proposal to determine consistency with the plan. If either agency finds the proposal inconsistent, Bonneville must get specific authorization from Congress to proceed.

ASSESSING FISH AND WILDLIFE COSTS AND ACCOMODATING FISH AND WILDLIFE OPERATIONS

The cost of managing the hydroelectric system to improve conditions for fish and wildlife is largely assigned to the power system, which must not only absorb the financial effects of that operation but also of other expenditures required to fully implement the fish and wildlife program. In order to do so, the power system must generate sufficient revenue to cover all of these financial requirements. The critical elements of the fish and wildlife program that must be integrated with power plan development are projected changes to hydroelectric system energy and peaking capacity capability.

Bonneville uses a well defined method for calculating the cost of fish and wildlife operations, or in other words, the additional revenue requirement relative to an operation without fish and wildlife measures. Using this method, Bonneville estimates its total financial obligation for the fish and wildlife program to be \$750 to \$900 million per year, which includes ordinary and capital expenditures, and power purchases and foregone revenue associated with fish and wildlife operations. Bonneville implements these operations and funds these measures to fulfill its obligations under the Endangered Species Act and the Power Act consistent with the Council's fish and wildlife program.

Specific cost considerations for fish and wildlife are identified in the Northwest Power Act. The language describing the fish and wildlife program amendment process [Section 4(h)(6)(C)] directs the Council to utilize fish and wildlife measures with the minimum economic cost as long as they achieve the same sound biological objectives. To the extent that Bonneville funds fish and wildlife measures with the minimum economic cost, the expenditures are efficient.

Another section of the Northwest Power Act [4h(10)(C)] allows Bonneville a credit from the U.S. Treasury for that part of its actual fish and wildlife expenditures that can be allocated to non-power purposes of dam operations. The credit includes a percentage of Bonneville's power purchases (at market rates) made specifically because of fish and wildlife operations. Forgone revenues, due to bypass spill, are not included in the credit but are counted in Bonneville's

assessment of total fish and wildlife costs. Bonneville has the responsibility to calculate these costs and the Council reports them to the governors, Congress, and the region. The Council also independently reviews these cost estimates on occasion, and will continue to do so in the future.

The Northwest Power Act recognizes that the federal Columbia River power system has an adverse effect on fish and wildlife in the Columbia and Snake River basins but it also recognizes that the power system has an obligation to mitigate for these impacts by funding additional measures and modifying the operation of the hydroelectric system as directed by the Endangered Species Act and the Power Act consistent with the Council's fish and wildlife program. The Council's program ensures that fish and wildlife affected by the federal hydropower system are protected, enhanced, and mitigated and the Council recognizes that actions to do so impose an economic cost on the region's ratepayers. Despite these costs, however they are assessed, the power system remains economical in the broad sense that power rates remain affordable.

See Appendix M for a description of what the Northwest Power Act requires in terms of the integration of the Council's fish and wildlife program into the power plan and the power system, how the power system and resource planning accommodates the operations for fish and wildlife purposes over time, and certain opportunities and uncertainties with regard to the continued integration of fish and wildlife and power purposes in the future.