

# PBL Efficiencies

## Financial Choices Workshop: September 10, 2002

\$ in Millions

	FY 2000	FY 2001	FY 2002			FY 2003		
	Actuals	Actuals	June 2001 Rate Case	Aug 2002 Forecast	Delta	June 2001 Rate Case	Aug 2002 Forecast	Delta
19 PBL Efficiencies project	0.5	5.7	0.0	2.7	2.7	0.0	4.5	4.5
20 Revenue Offsets from System Efficiencies			0.0	0.0	0.0	0.0	(7.5)	(7.5)

\$ in Millions

	FY 2004			FY 2005		
	June 2001 Rate Case	Aug 2002 Forecast	Delta	June 2001 Rate Case	Aug 2002 Forecast	Delta
19 PBL Efficiencies project	0.0	3.3	3.3	0.0	3.4	3.4
20 Revenue Offsets from System Efficiencies	0.0	(7.5)	(7.5)	0.0	(7.5)	(7.5)

\$ in Millions

	FY 2006			Average	Total Delta
	June 2001 Rate Case	Aug 2002 Forecast	Delta	Delta 2003- 2006	
19 PBL Efficiencies project	0.0	1.6	1.6		12.9
20 Revenue Offsets from System Efficiencies	0.0	(7.5)	(7.5)		(30.0)

### Subcategories:

The Power Business Line Efficiencies Program was created in 1999 to address the need for functional and system changes to respond to a rapidly changing market. The existing legacy systems are old, the world has changed, we cannot keep up.

Projects underway:

#### 1. Optimization of the Hydro System:

- a. The optimization systems include a computer software system (Columbia Vista) that performs required hydro- regulation calculations necessary for planning and operating the FCRPS. This development results in a superior planning tool, necessitated by the increased complexity of the hydro operation and marketing environment. The benefit to BPA and the region include a more efficient use of BPA personnel, a more effective use of the water resource, and an improved reporting capability. Thus resulting in increased net revenues.
- b. The Near Real Time Optimization (NRTO) Project is developing a computer application that will serve as a tool to evaluate the distribution of generation over the federal hydro system on a within-hour basis. It will evaluate the generation pattern over the system as a whole and also over the units at individual projects. The NRTO is being planned so that it can be included in the Generation Management System logic and serve as the optimizer in that more automated system. By setting optimal base points at the beginning of each hour the NRTO will be used by Duty Schedulers to more accurately optimize the federal hydro system generation. The NRTO will also be used by Corps of Engineers and Bureau of Reclamation Project Operators to choose the most efficient combination of units to meet their generation obligation.

**2. Scheduling for the Hydro System:** The new Transaction Scheduling System (TSS) is a fully integrated computer system that performs PBL scheduling functions from schedule entry through After-the-Fact Report Generation. It will facilitate the entire power/transmission transaction process from the moment the contract is signed until it is billed. The new transaction scheduling system eliminates the need for multiple manual workarounds by being able to perform

scheduling functions on one application. The TSS software vendor will continually modify their product to comply with changes to industry and legislative requirements.

**3. Generation Management System:** The Generation Management System is a Real-Time system that will enable Duty Schedulers to manage FCRPS generation resources, optimize operations, respond to dynamic schedules, participate in the Ancillary Services market, and implement the Slice contract in Real-Time while maintaining the integrity and reliability of the power system. With GMS, the PBL will have control over its generating resources, allowing it to optimize the operation of the hydro system, better manage inventories, implement zonal generation management, transition to Standard Market Design, and update systems to industry standards. The GMS project will allow Duty Schedulers to have increased control of the hydro system and depend less on manual processes.

**4. Load Forecasting:** The Load Forecasting Project is identifying, analyzing, and recommending load forecast organizational, system, and business process improvement options for the short-, mid-, and long-term. Currently, the project is implementing new forecasting systems and processes. Benefits include improved revenue, rates, and risks predictions, as well as improved Operations Planning procedures and avoidance of energy imbalance ancillary service charges. Recommendations are geared towards simplifying procedures and maximizing performance.

**5. Information Factory:** The Information Factory is for accessing, querying, and analyzing information from several PBL resources. Accessed through BPA's intranet, it provides for the creation of a single point of interface for PBL systems, the Business Solutions Project (BSP) systems, and the Corporate Info Factory. Users can quickly produce reports that are custom-tailored to their needs—reports that are easily changed by the user as new business demands arise. The Info Factory will provide accessible, timely, and easy-to-use data and information to support and enhance the PBL's business.

**Drivers of Difference from Rate Case (new expenses, re-allocation of expenses, increased spending due to...):**

The creation of the Efficiencies Program and projects postdated both the Regional Cost Review and Rate Case. It was, therefore, not included in either one. However, the need for efforts such as the Efficiencies projects was anticipated in the Cost Review:

*“Cost Review of the Federal Columbia River Power System, Management Committee Recommendations  
March 10, 1998”*

From Recommendation #1

*“...Remaining staff would perform the following basic services: duty and interchange scheduling, generation schedule and short term operations planning, weather and streamflow forecasting, regional system operational coordination, sales and purchase of power (trading), transmission acquisition and scheduling, billing, sales of reserve services, and contract administration.”*

From the Risks to Recommendation #1

*“Deregulation and Restructuring:*

*A greatly reduced staff may not be able to respond to the many upcoming changes in the power business such as new market flexibilities, scheduling protocols, and new independent system operators (ISOs). Complex and highly tailored products and support services would not be offered. Billing, scheduling, and inventory systems will need to be significantly simplified. The entire industry must adopt simplifying technology advances, as Bonneville must interface successfully with many other operators.*

*Technology: If the technology does not lead to anticipated efficiency improvements, there is a risk that some of the anticipated staff reductions will not be achieved.*

*Operation Analysis Some market analysis, particularly for purposes of managing river operations in relation to both fish and excess power, may need to increase, not decrease, depending on how overall industry restructuring affects operations of the FCRPS. It is anticipated that fewer analysts will be required in the future for this function, but this is very tentative.”*

It is now widely understood, and as can be seen from the core purpose for the PBL Efficiencies Program, that in order to provide the capabilities to compete within current and anticipated markets, maximize personnel and hydro system efficiencies, new processes and systems are required. This is the result of ever-increasing complexity within evolving power markets and hydro system operations.

**Consequences of cost cuts/tradeoffs:**

BPA continuously scrutinizes the cost vs. benefit on an individual project basis for each of these approved projects. As can be determined from a review of the costs vs. benefits for the aggregated projects improved productivity from personnel or hydro system operation results in positive payback. Cutting costs or trading this program off will result in higher FCRPS system costs.

Further, these systems have been introduced in order to provide the basis for future anticipated market requirements. A cut or trade-off will result in the inability for BPA to participate or effectively manage within these markets.

**Calculation of Revenue Offsets/Efficiency Gains (if any):**

The PBL Efficiency Program projects include many documented Offsets/Gains. These include avoidance of staff increases to do business within a more complex market, avoidance of ancillary service charges for PBL supplied products in current markets, generation of additional Megawatts from river operations, reduced staff to perform existing basic functions (generation and interchange scheduling, and short term operations planning, weather and streamflow forecasting, regional system operational coordination, sales and purchase of power (trading), transmission acquisition and scheduling, billing, sales of reserve services, and contract administration), increased revenues by providing more rapid access to operations information, and from faster and better hydro system planning.

**Mechanisms for enforcing spending levels:**

The PBL Efficiencies program was specifically established to aggregate projects within a single project management structure. This was done to monitor project performance and optimize the use of resources among those projects under the program umbrella. Project managers are answerable to both their teams of management sponsors and to the Program Manager for costs, schedules, and scope control of their individual efforts. Further, both the projects and the Program are subject to

periodic performance reviews and annual budget reviews. More recently, a Prioritization Steering committee and executive-level Management Review process have been created to conduct on-going evaluations of projects against Internal Rates of Return, evolving business needs, and resource availability.