

**Transmission Infrastructure Project Descriptions  
For Notice of Interest  
in Non-Federal Participation  
March 5, 2002**

**Background:**

The Northwest's federal power and transmission systems will require significant new capital investments in the next few years. These investments may include more than can be funded from BPA's lines of credit with the U.S. Treasury. The agency is therefore exploring other options to provide needed capital. One potential source is third-party participation in BPA capital projects, particularly transmission projects. BPA's initial step in exploring possible non-federal participation in financing infrastructure projects is to identify interest in the financing of any of the 18 projects identified on our website (see above). Interested parties should assume that the nature, scope, and schedule of the projects as listed on the referenced web site may change as circumstances dictate.

**1. Kangley-Echo Lake 500-kV Transmission Line Project**

**Project Description**

- Build approximately 9 miles of new 500-kV line from Echo Lake to a point on the Schultz-Raver 500 kV line (near the community of Kangley). This will create an Echo Lake – Schultz 500 kV line.
  
- Move the existing Monroe-Sammamish-SnoKing 230-kV tap to the Monroe-Echo Lake 500-kV line and add a new 500/230-kV transformer at SnoKing.
- Tap the Bothell-Sammamish 230-kV line into SnoKing.
- Remove the Horse Ranch tap from the Monroe-Snohomish 230-kV lines and re-terminate the Horse Ranch line directly to the Snohomish 230-kV bus.
- Reconfigure Bothell substation to add the 5<sup>th</sup> bus section.

**Energization Date:                Dec 2002**

**Estimated Total Cost:            \$41.5 M**

**2. North of Hanford/North John Day**

**Project Description**

- Build a new 60 mile 500-kV line from Schultz substation near Ellensburg, WA to a new substation, called Wautoma Substation, located southwest of the Hanford Reservation.
- Build a new 500 KV Wautoma Substation with a breaker and a half scheme, which would include eight breakers. The Hanford-Ostrander 500-kV and Hanford-John Day 500-kV lines will be looped into the new substation, eliminating system problems caused by the loss of these lines.

- Re-terminate the Sickler-Schultz 500-kV into a new bay at Schultz substation, eliminating a 500-kV line crossing east of the substation.
- Add/modify relaying, communications and RAS at various substations.
- Add 65 miles of fiber from Columbia substation to Wautoma substation.

**Energization Date: Oct 2004**  
**Estimated Total Cost: \$128.3 million**

### **3. McNary-John Day 500-kV line**

#### **Project Description**

- Build approximately 75 miles of 500-kV line from McNary 500-kV substation to John Day substation. The line will be routed along the north side of the Columbia River. This requires two river crossings, at McNary and John Day.
- Expand and configure McNary 500-kV substation from a ring bus to a breaker and half layout.
- Add breakers at John Day for the termination of the new line.
- Add communications at McNary and John Day substation
- Add 76 miles of fiber from McNary to John Day substation.

**Energization Date: Oct 2004**  
**Estimated Total Cost: \$119 M**

### **4. Lower Monumental – Starbuck 500-kV line**

#### **Project Description**

- Construct approximately 17 miles of new 500-kV line from the new Starbuck substation to Lower Monumental substation.
- At Lower Monumental 500-kV yard, add two circuit breakers, four motor operated disconnect switches, and support equipment to configure the yard to a full breaker and half layout.

**Energization Date: Oct 2004**  
**Estimated Total Cost: \$30.6 M**

### **5. Lower Monumental-McNary Area Transmission Line Project**

#### **Project Description**

- Construct 30 miles of new single circuit 500-kV line from the new Smiths Harbor substation to McNary substation.
- Add two 500-kV breakers at McNary Substation to terminate the new line.
- Add/modify relaying, communications and RAS at various substations.
- Add 200 MVAR shunt capacitors at McNary and Slatt substation, and 400 MVAR shunt capacitors at Big Eddy substation.

**Energization Date: Oct 2004**  
**Estimated Total Cost: \$56 M**

**6. Shultz Series Capacitors** – This project is not being considered for non-federal participation.

**7. Celilo Modernization**– This project is not being considered for non-federal participation.

**8. Monroe – Echo Lake 500-kV Line**

**Project Description**

- Construct approximately 32 miles of a new single circuit 500 kV line between BPA's Echo Lake substation and Monroe substation.
- Add terminal facilities at Monroe and Echo Lake Substations to terminate the new line.

**Energization Date: Oct 2005**  
**Estimated Cost: \$86.2 M**

**9. Grand Coulee-Bell 500 kV line (Eastern Washington Reinforcement)**

**Project Description**

BPA proposed the following transmission projects to mitigate the WOH problem.

- Remove one of the Grand Coulee-Bell 115 kV lines and construct 84 miles of new 500 kV transmission line from Bell substation to Grand Coulee substation in its place, mostly on existing right-of-way.
- Expand a 500 kV switchyard at Bell consisting of 2 or 3 bays.
- Add a 500 kV line terminal and a 180 MVAR shunt reactor at the USBR Grand Coulee substation.
- Add a new line position at Creston substation for the Grand Coulee-Bell line loop.
- Add 300 MVAR series capacitor at Bell Substation in the Taft-Bell 500-kV line
- Add 350 MVAR series capacitor at Dworshak Substation in the Taft Dworshak 500-kV line.
- Replace the series capacitor at Garrison to 350 MVAR on the two Taft lines.
- Add/modify relaying, communications and RAS at various substations.

**Energization Date: Oct 2004**  
**Estimated Total Cost: \$138.4M**

**10. Portland Area Additions (Pearl 500/230-kV Transformer)**

**Energization Date:** Fall 2003  
**Estimated Total Cost:** \$10.5 M

### **11. Puget Sound Area Additions - Phase II (South Seattle 500/230-kV Transformer Support)**

#### **Description**

This project consists of adding an additional 500/230-kV transformer in the South Seattle area to provide reliable load service during cold weather.

**Energization Date:** Fall 2005  
**Estimated Total Cost:** \$32.5 M

### **12. Olympic Peninsula Additions (Shelton 500/230-kV transformer and 500-kV line addition)**

#### **Description**

This project relocates the Satsop 500/230-kV transformer to a new 500-kV substation near Shelton and constructs a new 20 mile, Olympia-Shelton 500-kV line.

**Energization Date:** Fall 2005  
**Estimated Total Cost:** \$35.2 M

### **13. I-5 Generation Additions (Paul-Troutdale 500-kV line)**

#### **Justification/Description**

This project constructs a new, 105 mile Paul-Longview-Troutdale 500-kV line. It also includes a new 500/230-kV substation (3 breaker ring bus) in the Longview area.

**Energization Date:** Spring 2006  
**Estimated Total Cost:** \$145M

### **14. North of John Day/Portland Area Reinforcement – Phase I (Loop the Hanford-Ostrander 500-kV line into Big Eddy)**

#### **Description**

This project consists of constructing 20 miles of double circuit, 500-kV line to loop the existing Hanford-Ostrander 500-kV line into Big Eddy substation.

**Energization Date:** Spring 2006  
**Estimated Cost:** \$22M

### **15. West of Noxon Reinforcement - Phase I (Libby-Bonnors Ferry line rebuild)**

#### **Description**

This project rebuilds the line between Libby and Bonnors Ferry substations (60 miles of new 230-kV double circuit construction).

**Energization Date:**           **Fall 2005**

**Estimated Total Cost:**       **\$64.5 M**

### **16. Lower Monumental and McNary Area Generator Additions (McNary tap to Ashe- Marion 500-kV line)**

#### **Description**

This project constructs a 30 mile, 500-kV line from McNary to a tap on the Ashe-Marion 500-kV line and terminal additions at Slatt and McNary substations.

**Energization Date:**           **Spring 2006**

**Estimated Total Cost:**       **\$58.8 M**

### **17. West of Spokane and Lewiston Reinforcements – Phase II (Little Goose-Starbucks 500-kV Line)**

#### **Description**

This project constructs a new 15 mile, Little Goose-Starbucks 500-kV line and terminal facilities.

**Energization Date:**   **Fall 2006**

**Estimated Cost:**       **\$20.8 M**

### **18. Pacific Northwest-Idaho – Phase I (Hatwai-Lolo 230-kV line)**

#### **Description**

This project constructs a second Hatwai-Lolo 230-kV line and terminal facilities. It also includes a reconductoring the McNary-Round-up 230-kV line (40 miles).

**Energization Date:** Spring 2005  
**Estimated Total Cost:** \$11.2 M

**19. Pacific Northwest-Idaho – Phase II (McNary-Brownlee 230-kV line)**

**Description**

This project constructs a second 160-mile, McNary-Brownlee 230-kV line and terminal facilities (including series capacitors).

**Energization Date:** Spring 2006  
**Estimated Total Cost:** \$94.9 M

**20. West of Noxon Reinforcement - Phase II (Libby-Bell 230-kV line)**

**Description**

This project constructs a new 230-kV line between the Sandpoint area and Bell substation (75 miles of new construction) to create a new Libby-Bell 230-kV line including terminal facilities. In addition, a new 230/115-kV transformer would be added at Sand Creek Substation. One side of the Libby-Bonnors Ferry double circuit line (Project 15 above) would now be operated at 230-kV.

**Energization Date:** Fall 2006  
**Estimated Total Cost:** \$61.9M