Building Performance Services

September 24, 2003

Northwest Energy Efficiency Alliance
Building Performance Services

The Building Performance Services (BPS) initiative is sponsored by the Northwest Energy Efficiency Alliance and three Puget Sound area electric utilities – Puget Sound Energy, Seattle City Light and Snohomish County PUD.
The long-term goal is to develop a market structure that successfully promotes and supports better building operating performance.

It will take a sustained market transformation effort to achieve this goal.

In the near and intermediate term, key activities include infrastructure development, a building performance services test and larger-scale pilot activities.

All activities are being conducted in partnership with utilities and service providers, building on what they are doing and have accomplished.
BPS Test

Objectives:

- Improve BPS Services and the BPS Implementation Toolkit
- Gauge Preliminary Market Interest
- Define Roles and Relationships of Actors – Utilities, the Alliance and Service Providers
**BPS Test (cont.)**

**Scope:**
- Limited to sponsoring utilities – Puget Sound Energy, Seattle City Light and Snohomish County PUD – and select service providers
- Includes 10-15 buildings, with distribution spread between service offerings – Enhanced O&M Practices, Energy Tune-Up and Commissioning

**Timing:**
- September 2003 to June 2004
BPS Description

- Screening
- Scoping
- Enhanced O&M Practices
- Energy Tune-Up
- Commissioning
- Equipment Replacement
BPS Definitions

**Screening:** Identifies buildings that are likely to benefit from improvements to operating performance

**Scoping:** For high priority buildings, identifies technical opportunities through an on-site review and recommends appropriate follow-on service activities

**Enhanced O&M Practices:** Based on a review of current O&M practices, makes recommendations for improving practices
BPS Definitions (cont.)

**Energy Tune-Up:** Identifies and implements operational changes that reduce building energy costs, such as adjusting equipment or reprogramming controls.

**Commissioning:** A systematic and documented process of ensuring that the owner’s operational requirements are met, building systems and equipment perform efficiently, and building operators are properly trained.

**Equipment Replacement:** May be necessary if systems and equipment are obsolete.
Screening – Purpose

**Screening:** Identifies buildings that are likely to benefit from operational improvements

- Identify likely candidate buildings before going on-site
  - Are there practical opportunities to improve building performance?
  - Is the owner interested and capable of taking action?
Screening – Process Flow

- Gather Prospecting Data
- Initial Screening
- Telephone Contact
- Data Collection
- Benchmarking and Analysis
- Second Screening
- In-Person Contact
- Final Screening
- Screening Output

Scoping
Scoping – Purpose

Scoping: For high priority buildings, identifies technical opportunities through an on-site review and recommends appropriate follow-on service activity

- Obtain commitment from owner/manager to contract for follow-on services
  - Give summary presentation of follow-on service Scope of Work
  - Provide customer with follow-on Service Recommendation
  - Provide actual Not-to-Exceed Cost for follow-on service (excluding improvement costs)
  - Communicate Potential Level of Savings Achievable
Scoping – Process Flow

- Screening
  - Screening Data
  - Site-Visit Action Plan
  - On-Site Review
  - Post Visit Analysis
  - Customer Presentation and Follow-On Service Commitment

- Early Exit

Follow-On Service Activities
Enhanced O&M Practices – Purpose

*Enhanced O&M Practices*: Based on a review of current O&M practices, recommendations for improving practices are made

- Focus is on improving and sustaining operating performance
  - Specific O&M opportunities that improve performance
  - O&M management practices that help sustain performance
  - Actions that ensure the persistence of fixes made through Energy Tune-Up or Commissioning
Enhanced O&M Practices – Process Flow

**Scoping**
- Identifies need for basic maintenance
- Sets budget for O&M effort

**Basic O&M**
- Basic maintenance needed before BPS Services

**Enhanced O&M Service**

**Review O&M Practices**

**Identify Enhanced Practices**

**Enhanced O&M Action Plan**

**Decision-Maker Presentation**
- Management practices
- Describe O&M actions
- In-house staff responsibilities
- Contractor responsibilities

**Quick Fixes**
- Can be accomplished as part of O&M review

**Enhanced O&M Practices Implementation**
- Initiate enhanced in-house O&M practices
- Revise O&M contracts
- Train in-house staff

**O&M Check-In**
Energy Tune-Up – Purpose

**Energy Tune-Up:** Identifies and implements specific operational changes that reduce building energy costs, such as adjusting equipment or reprogramming controls

- Focus is on operational changes that save energy
  - Requires relatively small investments
  - Can be accomplished quickly
  - Incorporates Enhanced O&M Practices
Energy Tune-Up – Process Flow

**Scoping**
- Identifies high priority systems
- Sets budget for diagnostic effort

**Basic O&M**
- Basic maintenance needed before Tune-Up is possible

**Energy Tune-Up Service**

- **Initial Investigation**
- **Diagnostic Testing**
- **Energy Tune-Up Action Plan**

**Quick Fixes**
- Accomplished within diagnostic budget

- **Tune-Up Implementation**
- **Verify Fixes**
- **O&M Recommendations**

**Enhanced O&M Practices**
Commissioning – Purpose

Commissioning: A systematic and documented process of ensuring that the owner’s operational requirements are met, building systems and equipment perform efficiently, and building operators are properly trained.

- Need is defined by:
  - Owner-recognized problems
    - Air Flows – pressurization problems
    - Recurring equipment failures
    - Excessive comfort issues (temperature / IAQ)
    - High energy bills
  - Owner willingness/ability to take significant action
    - Rigorous and systematic investigation
    - Time, effort and expense involved
Commissioning – Process Flow

**Scoping**
- Confirms applicability/owner interest
- Sets budget expectation for Cx plan

**Basic O&M**
- Basic maintenance needed before Cx is possible

**Commissioning Service**

- **Planning Phase**
  - Review scoping findings
  - Confirm owner’s objectives
  - Review/update documentation
  - Commissioning Plan

- **Investigation Phase**
  - Site assessment
  - Develop master list
  - Diagnostics
  - Interim Commissioning Report

- **Implementation Phase**
  - Implement Improvements
  - Retesting and remonitoring

- **Hand-Off Phase**
  - Final Commissioning Report
  - Enhanced O&M Practices Action Plan
  - Tracking results
  - Project close-out

- **Quick Fixes**
  - Accomplished within Cx budget

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**Enhanced O&M Practices**

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**Northwest Energy Efficiency Alliance**

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For Further Information Contact:

Mark Tuffo, Project Coordinator
Northwest Energy Efficiency Alliance
529 SW Third Ave., #600
Portland, OR 97204
Phone: 503-827-8416 Ext 232
Fax: 503-827-8437
MTuffo@nwalliance.org