

UNITED STATES  
GOVERNMENT

COOPERATIVE AGREEMENT

BONNEVILLE  
POWER ADMINISTRATION

Mail Invoice To:

See Page 2  
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Contract : 00048475  
Release :  
Page : 1

Vendor:  
CITY OF PORT ANGELES  
LIGHT DEPT  
321 EAST FIFTH STREET  
PORT ANGELES WA 98362

Please Direct Inquiries to:

KRISTA L. MCCRACKEN  
Title: CONTRACT SPECIALIST  
Phone: 503-230-5383  
Fax : 503-230-4508

Attn: PHIL LUSK

Contract Title: RESIDENTIAL DEMAND RESPONSE PILOT PROJECT

Total Value : \$367,000.00  
Pricing Method: COST SHARE (NO FEE)  
Performance Period: 08/02/10 - 08/01/12

**\*\* NOT TO EXCEED \*\***  
Payment Terms: % Days Net 30

\_\_\_\_\_  
Contractor Signature

\_\_\_\_\_  
BPA Contracting Officer

\_\_\_\_\_  
Printed Name/Title

\_\_\_\_\_  
Date Signed

\_\_\_\_\_  
Date Signed

**Cooperative Agreement No. 48475**  
*in response to*  
**FOA No. 1530 – Residential Demand Response Pilot Projects**  
**Title – Residential Integrated Automated Metering Infrastructure Demand Response Project**

Project Technical Representative – Frank Brown / 206-220-6774 / [febrown@bpa.gov](mailto:febrown@bpa.gov)  
Financial Assistance Officer – Krista McCracken / 503-230-5383 / [klmccracken@bpa.gov](mailto:klmccracken@bpa.gov)

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This cooperative agreement is hereby issued as follows and consists of the signature page, this page, the terms and conditions, the project description, and budget.

1. The total estimated total budget for this project is \$654,110. This award is in the amount of \$367,000, or 56.1 percent of the total estimated budget, which constitutes BPA's cost share.
2. Please submit requests for reimbursement, other required financial reports, progress reports and deliverables marked with agreement number to the PTR at the e-mail address provided herein or by US Mail to:

Bonneville Power Administration  
Attn: Frank Brown / KLS-Seattle  
909 1st Avenue, Suite 380  
Seattle, WA 98104-3636

4. Allowable costs under this grant incurred prior to the date of its award and execution are eligible for reimbursement effective to June 7, 2010.
5. This grant incorporates by reference 2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments (OMB Circular A-87).

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# **UNIT 1 – TERMS AND CONDITIONS**

## **CLAUSE 4-1 REGULATIONS APPLICABLE TO BPA FINANCIAL ASSISTANCE (BFAI 4.10) (SEP 04)**

The Bonneville Power Administration's financial assistance function is managed and executed solely in accordance with the Bonneville Financial Assistance Instructions (BFAI). The BFAI is available without charge on the Internet at <http://www/bpa.gov>. Copies of the BFAI may be obtained for \$15.00 each. Requests and comments should be sent to Head of the Contracting Activity - GK, Bonneville Power Administration, P.O. Box 3621, Portland, OR 97208. Subscriptions are not available.

## **CLAUSE 4-2 NONDISCRIMINATION IN FEDERALLY ASSISTED PROGRAMS (BFAI 4.10) (SEP 04)**

The recipient shall comply with 10 CFR Chapter II, Section 600.39 which provides that "...no person shall on the ground of race, color, national origin, sex, handicap, or age be excluded from participation in, be denied the benefits of, be subjected to discrimination under, or be denied employment, where the main purpose of the program or activity is to provide employment or when the delivery of program services is affected by the recipient's employment practices, in connection with any program or activity receiving Federal assistance from ..." BPA.

## **CLAUSE 4-3 EXAMINATION OF RECORDS (BFAI 4.10) (SEP 04)**

- (a) The recipient shall maintain books, records, documents, and other evidence and accounting procedures and practices, sufficient to reflect properly all direct and indirect costs of whatever nature claimed to have been incurred and anticipated to be incurred for the performance of this award. The Financial Assistance Officer or a representative shall have the right of access to any books, documents, papers, or other records of recipients and subrecipients which are pertinent to the award, in order to make audits, examinations, excerpts and transcripts.
- (b) Such material shall be made available at the office of the recipient, at all reasonable times, for inspection, audit or reproduction, until the expiration of 3 years from the date of final payment under this award or for such longer period, if any, as is required by applicable statute. If any litigation, claim, negotiation, audit or other action involving the records has been started prior to the expiration of the 3 year period, the records must be retained until completion of the action and resolution of all issues which arise from it, or until the end of the regular 3 year period whichever is later.

## **CLAUSE 4-4 REPORTING PROGRAM PERFORMANCE (BFAI 4.10M)(FEB 10)**

- (a) Frequency. Unusual events having a negative impact on the project should be reported to the Project Technical Representative (PTR) as soon as they are discovered. A progress report is due quarterly. A final report on the project must be submitted no later than 90 days after completion of the project.
- (b) Contents. The report should contain updates to the work plan and a comparison of the actual accomplishments to those planned for the period. If the project is not on schedule, a brief explanation of the reason is required. Unusual situations encountered which impacted the costs or effectiveness of the project should be identified and explained. The report should include key accomplishments during the reporting period and any issues or risks identified.

**CLAUSE 4-6 REIMBURSEMENT PAYMENT AND FINANCIAL REPORTING REQUIREMENTS  
(BFAI 4.10M)(JUL 10)**

(a) Payment for services performed under this award will be reimbursed by Vendor Express payment after performance of the services. Recipient requests for reimbursements, and recipient financial reporting requirements shall be made as follows:

- (1) Reimbursements. Standard Form 270e, Request for Advance and Reimbursement, shall be used when requesting reimbursement for costs incurred on the project. Requests should not be made more frequently than monthly. An original should be submitted to the Project Technical Representative (PTR).
- (2) Interim cost reports. Interim cost reports on SF-425a, Federal Financial Report (short Form), shall be submitted to the Project Technical Representative (PTR) quarterly, within 30 days after the end of the reporting period.
- (3) Final Cost Report. The final cost report shall be submitted to the PTR within 90 days after the end of the effective period. It shall be submitted in the same format as the budget as awarded. The final cost report shall compare the amounts allocated in the award budget to the amounts expended for each budget element.

**CLAUSE 4-7 ENVIRONMENTAL PROTECTION  
(BFAI 4.10)(SEP 04)**

The recipient shall insure that the facilities under its ownership, lease or supervision which will be utilized in the accomplishment of the project are not listed on the Environmental Protection Agency's (EPA) list of Violation Facilities and that it will notify BPA of the receipt of any communication from the Director of the EPA Office of Federal Activities indicating that a facility to be used in the project is under consideration for listing by the EPA.

**CLAUSE 4-8 LIMITATION OF LIABILITY  
(BFAI 4.10)(SEP 04)**

The recipient agrees to hold BPA harmless against any direct or consequential damages claimed by the recipient or third parties arising from or related to Recipient's performance, during the period of this award.

**CLAUSE 4-9 ACKNOWLEDGMENT OF SUPPORT  
(BFAI 4.10)(SEP 04)**

Publication of the results of this award is encouraged. The recipient shall include in any article or other announcement that is published an acknowledgment that the research was supported, in whole or in part, by BPA (including the award number), but that such support does not constitute an endorsement by BPA of the views expressed therein.

**CLAUSE 4-10 DISPUTES  
(BFAI 4.10) (SEP 04)**

- (a) Except as otherwise provided in this award, any unresolved dispute concerning a question of fact arising under this award shall be decided by the Financial Assistance Officer (FAO), who shall reduce that decision to writing and mail, or otherwise furnish a copy thereof to the Recipient. The decision of the Financial Assistance Officer shall be final and conclusive. The FAO's decision may be appealed to the BPA HCA. The decision of the BPA HCA shall be final and conclusive.
- (b) This clause does not preclude consideration of law questions in connection with decisions provided for in paragraph (a) above; provided, that nothing in this award shall be construed as making final the decision of any administrative official, representative, or board, based on a question of law.

- (c) The use of alternate disputes resolution processes are encouraged, and may be used as negotiated between the parties.

**CLAUSE 4-11 TRAVEL  
(BFAI 4.10)(SEP 04)**

- (a) Domestic travel may be an appropriate charge to this award, and prior authorization for specific trips is not required. In accordance with the applicable cost principles, reasonable, necessary, and allowable travel costs may be charged on an actual basis or per diem basis in lieu of actual costs incurred, provided the method used results in charges consistent with those normally allowed by the organization in its regular operations and travel is at less than business class common carrier fare, unless otherwise approved in advance by the Financial Assistance Officer.
- (b) Foreign travel may be charged to this award without prior approval if detailed in the approved budget. If foreign travel is required, but not detailed in the approved budget, it must be approved in writing by the Financial Assistance Officer prior to beginning the travel. Foreign travel will be reimbursed on the same basis as domestic travel.

**CLAUSE 4-12 FINANCIAL ASSISTANCE OFFICER'S REPRESENTATIVE  
(BFAI 4.10)(SEP 04)**

The Financial Assistance Officer's Representative (FAOR) shall have all the rights, powers, and privileges of the Financial Assistance Officer necessary to the administration of the award: provided, however, that the FAOR is not empowered to execute modifications to the award, to make a final decision of any matter which would be subject to appeal, or to suspend or terminate for any cause the recipient's right to proceed.

**CLAUSE 4-13 PROJECT TECHNICAL REPRESENTATIVE  
(BFAI 4.10)(SEP 04)**

- (a) The Project Technical Representative (PTR) is the authorized representative of the Financial Assistance Officer (FAO) for technical actions performed in relation to the award. This includes the functions of (1) review of work performed; and (2) interpretation of technical program requirements.
- (b) The PTR is not authorized to act for the FAO in the following matters: (1) modifications that change the amount of award, technical requirements or time for performance; (2) suspension or termination of the recipient's right to proceed; and (3) final decisions on any matters subject to appeal.

**CLAUSE 4-14 FIELD REPRESENTATIVE  
(BFAI 4.10)(SEP 04)**

- (a) The Field Representative (FR) will be appointed by Financial Assistance Officer (FAO) or the Project Technical Representative (PTR) and is authorized by the PTR for reviewing project accomplishments and recipient's technical reports, and interpretation of award requirements.
- (b) The Field Representative (FR) is not authorized to act in the following matters: (1) modifications that change the award amount or general direction of the project; (2) suspension or termination of the recipient's right to proceed; (3) approval of financial requests and reports, and (4) final decisions on any matters subject to appeal.

**CLAUSE 4-15 COST REIMBURSEMENT BASIS  
(BFAI 4.10)(SEP 04)**

This award is funded on a cost reimbursement basis without fee or profit, not to exceed the amount awarded as indicated on the face page and is subject to a refund of unexpended funds to BPA.

**CLAUSE 4-16 BPA-FURNISHED EQUIPMENT OR MATERIAL  
(BFAI 4.10)(SEP 04)**

- (a) The recipient hereby releases and agrees to hold BPA, or persons acting upon behalf of the BPA harmless for any and all liability of every kind and nature whatsoever resulting from the receipt, shipping, installation, operation, handling, condition, use and maintenance of the material furnished by BPA under this award.
- (b) Neither BPA nor persons acting on behalf of BPA make any warranty or other representation, express or implied, that the material provided under this award will accomplish the results for which it is requested or intended.

**CLAUSE 4-17 SUSPENSION OR TERMINATION  
(BFAI 4.10)(SEP 04)**

(a) Definitions.

- (1) "Suspension" is an action by BPA that temporarily suspends BPA support under the award pending corrective action by the Recipient or pending a decision by BPA to terminate the award.
- (2) "Termination" means the cancellation of BPA sponsorship, in whole or in part, at any time prior to the date of completion.

(b) Suspension or Termination for cause.

- (1) Notice of Suspension. Prior to issuing a suspension notice, efforts will be made by BPA and the recipient to informally resolve disagreements. If informal efforts fail, BPA may issue a notice of suspension that specifies the date on which the suspension will take effect. During the suspension, BPA may withhold further payment and prohibit the recipient from incurring additional obligations of funds pending corrective action by the recipient or a decision by BPA to terminate. BPA shall allow all necessary and proper costs that the recipient could not reasonably avoid during the period of suspension provided that they would otherwise be allowable.
- (2) Notice of Termination for Cause. Prior to issuing a termination notice, efforts will be made by BPA and the recipient to informally resolve disagreements. If informal efforts fail, BPA may issue a notice of termination that will take effect as stated in the letter. The Financial Assistance Officer shall determine the severity of the violation that caused the termination for cause, and determine what costs are appropriate for reimbursement.

(c) Termination for convenience. BPA or the recipient may request that the award be terminated in whole or in part when both parties agree that the continuation of the project would not produce beneficial results commensurate with the further expenditure of funds. The two parties shall agree upon the termination conditions, including the effective date and, in the case of partial terminations, the portion to be terminated. The recipient shall not incur new obligations for the terminated portion after the effective date, and shall cancel as many outstanding obligations as possible. BPA shall allow full credit to the recipient for the BPA share of the noncancellable costs, properly incurred by the recipient prior to termination.

(d) Authority to issue notices. The Financial Assistance Officer is the only person authorized to suspend or terminate the award.

**CLAUSE 4-18 CHANGE OR ABSENCE OF THE PRINCIPAL INVESTIGATOR OR DESIGNATED KEY PERSONNEL  
(BFAI 4.10)(SEP 04)**

Since BPA funding of this project is based, to a significant extent, on the qualifications and level of participation of the Principal Investigator(s), or key personnel, a change of Principal Investigator(s), or key personnel, or their level of effort is considered a change in the approved project. The approval of BPA must be obtained prior to any change of the Principal Investigator or key personnel who have been identified as key personnel. In addition, any continuous absence of the Principal Investigator or key personnel in excess of 3 months, or plans for the Principal Investigator or key personnel to become substantially less involved in the project than was indicated in the approved application requires BPA prior approval. The recipient must contact the Financial Assistance Officer (FAO) immediately upon becoming aware that any of these changes are likely and must receive FAO approval before effecting any such change.

**CLAUSE 4-19 PAPERWORK REDUCTION  
(BFAI 4.10)(SEP 04)**

- (a) This award is subject to the requirements of the Paperwork Reduction Act of 1996 as implemented by the Office of Management and Budget rules, "Controlling Paperwork Burdens on the Public," published at 5 CFR 1320 (47 FR 13666, 3-31-43) if the recipient will collect information from ten or more respondents either:
- (1) At the specific request of BPA, or
  - (2) If the award requires specific BPA approval of the information collection or the collection procedures.
- (b) A statement outlining proposed information collection under (a) above shall be submitted by the recipient to the Financial Assistance Officer named on the face page of this award at least 90 days prior to the intended date of information collection. BPA will seek the requisite approval from the Office of Management and Budget and will promptly notify the recipient of the disposition of the request.

**CLAUSE 4-21 REQUIREMENT FOR AUDIT  
(BFAI 4.10)(SEP 04)**

The recipient is required to obtain an audit in accordance with OMB Circular A-133.

**CLAUSE 4-23 PERSONAL PROPERTY MANAGEMENT  
(BFAI 4.10) (SEP 04)**

- (a) This clause provides guidance for the utilization and disposition of personal property furnished by BPA or acquired in whole or in part with BPA funds, or whose cost was charged to a project supported by BPA funds. Also see BPI Clause 19-1.
- (b) BPA-owned personal property.
- (1) The following BPA property will be provided for use in this award:  
  
*None*
  - (2) Title remains vested in BPA. The recipient shall submit an annual reconciled physical inventory listing by October 1 of each year of such property in its custody to the PTR.
  - (3) Upon completion of the award, or when the property is no longer needed, the recipient shall provide an inventory of the property to BPA and request disposition instructions.
- (c) Recipient-acquired personal property.



(1) When the recipient acquires personal property using BPA funds, in whole or in part, title vests with the recipient.

(2) BPA will request the recipient to transfer title to the following property at the end of the project:

*None*

(3) BPA reserves the right to transfer title to the property listed below to itself or a third party at the completion of the project.

*None*

(4) If BPA does not provide disposition instructions for property identified in (b)(3) within 120 days of the end of the project, BPA relinquishes the right to transfer title and the recipient may retain the property, or dispose of it as appropriate.

(5) BPA does not reserve the right to transfer title to the following personal property. The recipient may retain, use or dispose of this property.

<u>Description</u>	<u>Units</u>
Water Heater Demand Controllers	500
Home Area Networks	90
Residential Thermal Storage Units	10

(6) The recipient shall submit a reconciled physical inventory listing by October 1 every second year of the award of personal property in its control.

(d) Property Management Standards for property which BPA will, or reserves the right to, require the transfer of title at the conclusion of the award:

(1) Property records shall be maintained which include a description of the property, source of property, including award number, acquisition date, location, use and condition of the property and the date the information was reported, unit acquisition cost, ultimate disposition of property, and date of disposition.

(2) The recipient shall maintain a system to insure adequate safeguards to prevent loss, damage, or theft of the property.

(3) The recipient shall follow adequate maintenance procedures to keep the property in good condition.

**CLAUSE 4-26 BUDGET CHANGES AND LINE ITEM TRANSFERS  
(BFAI 4.10) (SEP 04)**

If unanticipated project needs arise, the recipient is authorized to make budget line item transfers not exceeding ten per cent of the total approved budget. Reallocation of funds exceeding this amount must have the prior written approval of the FAO. The recipient shall send a written request for such budget changes to the FAO through the Project Technical Representative. The FAO will respond to the request within 30 days.

Recipients or subrecipients shall obtain prior approval whenever any of the following changes are anticipated:

(a) Changes in the scope or the objective of the project or program that will require a budget revision.

(b) The need for additional funding.

**CLAUSE 3-3 CERTIFICATION, DISCLOSURE, AND LIMITATION REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (SEP 98)(BPI 3.5.6)**

(a) As used in this clause:

"Covered Federal action" means

- (1) The awarding of any Federal contract.
- (2) The extension, continuation, renewal, amendment, or modification of any Federal contract.

"Indian tribe" and "tribal organization" have the meaning provided in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) and includes Alaskan Natives.

"Influencing or attempting to influence" means making, with the intent to influence, any communication to or appearance before an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with any covered Federal action.

"Local government" means a unit of government in a State and, if chartered, established, or otherwise recognized by a State for the performance of a governmental duty, includes a local public authority, a special district, an intrastate district, a council of governments, a sponsor group representative organization, and any other instrumentality of a local government.

"Person" means an individual, corporation, company, association, authority, firm, partnership, society, State, and local government, regardless of whether such entity is operated for profit or not for profit. This term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Reasonable compensation" means, with respect to a regularly employed officer or employee of any person, compensation that is consistent with the normal compensation for such officer or employee for work that is not furnished to, not funded by, or not furnished in cooperation with the Federal Government.

"Reasonable payment" means, with respect to professional and other technical services, a payment in an amount that is consistent with the amount normally paid for such services in the private sector.

"Recipient" includes all contractors and subcontractors. The term excludes an Indian tribe, tribal organization, or any other Indian organization with respect to expenditures specifically permitted by other Federal law.

"Regularly employed" means, with respect to an officer or employee of a person requesting or receiving a Federal contract, an officer or employee who is employed by such person for at least 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person for receipt of such contract. An officer or employee who is employed by such person for less than 130 working days within one year immediately preceding the date of the submission that initiates agency consideration of such person shall be considered to be regularly employed as soon as he or she is employed by such person for 130 working days.

"State" means a State of the United States, the District of Columbia, the Commonwealth of Puerto Rico, a territory or possession of the United States, an agency or instrumentality of a State, and a multi-State, regional, or interstate entity having governmental duties and powers.

(b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that:

- (i) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract or the extension, continuation, renewal, amendment, or modification of any Federal contract.

- (2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, Standard Form-LLL, Disclosure of Lobbying Activities, to the Contracting Officer.
- (3) He or she will include the language of this certification in all subcontract awards at any tier and that all sub-recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.
- (c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, U.S. Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10, 000 and not more than \$100,000 for each such failure.
- (d) A contractor who requests or receives from an agency a Federal contract shall file with that agency a disclosure form, OMB standard form LLL, Disclosure of Lobbying Activities, if such person has made or has agreed to make any payment using non appropriated funds (to include profits from any covered Federal action), which would be prohibited under this clause if paid for with appropriated funds.
- (e) The contractor shall file a disclosure form at the end of each calendar quarter in which there occurs any event that materially affects the accuracy of the information contained in any disclosure form previously filed by such person under paragraph (b) of this clause. An event that materially affects the accuracy of the information reported includes--
- (1) A cumulative increase of \$25,000 or more in the amount paid or expected to be paid for influencing or attempting to influence a covered Federal action; or
  - (2) A change in the person(s) or individual(s) influencing or attempting to influence a covered Federal action; or
  - (3) A change in the officer(s), employee(s), or Member(s) contacted to influence or attempt to influence a covered Federal action.
- (f) The contractor shall require the submittal of a certification, and if required, a disclosure form, by any person who requests or receives any subcontract exceeding \$100,000 under the Federal contract.
- (g) All subcontractor disclosure forms (but not certifications), shall be forwarded from tier to tier until received by the prime contractor. The prime contractor shall submit all disclosure forms to the Contracting Officer at the end of the calendar quarter in which the disclosure form is submitted by the subcontractor. Each subcontractor certification shall be retained in the subcontract file of the awarding contractor.
- (h) Any person who makes an expenditure prohibited under this clause or who fails to file or amend the disclosure form to be filed or amended by this clause shall be subject to a civil penalty as provided by 31 U. S. Code 1352. An imposition of a civil penalty does not prevent the Government from seeking any other remedy that may be applicable.

**CLAUSE 3-6 DRUG-FREE WORKPLACE  
(SEP 98)(BPI 3.6.4)**

- (a) The recipient agrees that with respect to all employees to be employed under this agreement it will provide a drug-free workplace as described in this clause.
- (b) Definitions. As used in this clause "Controlled substance" means a controlled substance in schedules I through V of section 202 of the Controlled Substances Act (21 U.S.C. 812), as from time to time amended, and as further defined in regulation at 21 CFR 1308.11-1308.15, as amended.

"Conviction" means a finding of guilt (including a plea of nolo contendere) or imposition of sentence, or both, by any judicial body charged with the responsibility to determine violations of the Federal or State criminal drug statutes.

"Criminal drug statute" means a Federal or non-Federal criminal statute involving the manufacture, distribution, dispensing, possession or use of any controlled substance.

"Drug-free workplace" means the site(s) for the performance of work done by the recipient in connection with a specific agreement at which employees of the recipient are prohibited from engaging in the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance.

"Employee" means an employee of a recipient directly engaged in the performance of work under a Government agreement. "Directly engaged" is defined to include all direct cost employees and any other recipient employees who have other than a minimal impact or involvement in agreement performance.

"Individual" means an offeror/recipient that has no more than one employee including the offeror/recipient.

- (c) The Recipient, if other than an individual, shall -- within 30 calendar days after award (unless a longer period is agreed to in writing for agreements of 30 calendar days or more performance duration); or as soon as possible for agreements of less than 30 calendar days performance duration--
- (1) Publish a statement notifying its employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the recipient's workplace and specifying the actions that will be taken against employees for violations of such prohibition;
  - (2) Establish an on-going drug-free awareness program to inform such employees about--
    - (A) The dangers of drug abuse in the workplace;
    - (B) The recipient's policy of maintaining a drug-free workplace;
    - (C) Any available drug counseling, rehabilitation, and employee assistance programs; and
    - (D) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace.
  - (3) Provide all employees engaged in performance of the agreement with a copy of the statement required by subparagraph (c)(1) of this clause;
  - (4) Notify such employees in writing in the statement required by subparagraph (c)(1) of this clause that, as a condition of continued employment on this agreement, the employee will--
    - (A) Abide by the terms of the statement; and
    - (B) Notify the employer in writing of the employee's conviction under a criminal drug statute for a violation occurring in the workplace no later than five (5) days after such conviction.
  - (5) Notify the Financial Assistance Officer in writing within ten (10) days after receiving notice under subdivision (c)(4)(B) of this clause, from an employee, or otherwise receiving actual notice of such conviction. The notice shall include the position title of the employee;
  - (6) Within 30 days after receiving notice under subparagraph (c)(4)(B) of this clause of a conviction, take one of the following actions with respect to any employee who is convicted of a drug abuse violation occurring in the workplace:
    - (A) Taking appropriate personnel action against such employee, up to and including termination; and/or

- (B) Require such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency.
- (7) Make a good faith effort to maintain a drug-free workplace through implementation of subparagraphs (c)(1) through (c)(6) of this clause.
- (d) In addition to other remedies available to the Government, the Recipient's failure to comply with the requirements of paragraph (c) of this clause may, pursuant to BPI 3.6.3 render the recipient subject to suspension of agreement payments, termination of the agreement for default, and suspension or debarment.

## UNIT 2 – PROJECT DESCRIPTION

### 1.0 RESIDENTIAL INTEGRATED AUTOMATED METERING INFRASTRUCTURE DEMAND RESPONSE PILOT PROJECT

#### 1.1 GENERAL DESCRIPTION

This proposal is submitted in response to the Funding Opportunity Announcement No. 1530 issued by the Bonneville Power Administration (BPA) for Residential Demand Response (DR) Pilot Projects. The City of Port Angeles (City) is actively involved in upgrading its electric utility facilities to an advanced metering infrastructure (AMI) system with smart meters capable of incorporating rate designs to mimic BPA’s forthcoming wholesale power Tiered Rate Methodology (TRM). If this project is selected for funding by BPA, the City will purchase and install demand response equipment, to include 500 residential water heating DR controls, 90 in-home displays with controllable home area network capabilities, and 10 thermal storage devices for home heating. These units will be deployed on a voluntary basis to customers meeting specific prerequisites according to the equipment testing matrix in Table 1-1 below.

<b>Table 1-1 Equipment Testing Matrix</b>			
	<b>Number of Participants</b>	<b>Participants in Control Group (0 hours/day impact)</b>	<b>Participants in Critical Peak Hour Group (1 hour/day impact)</b>
Baseline Control Group (no DR equipment)	100	100	0
Water Heater Only Group	400	30	370
Water Heater / HAN Group (Utility Controlled)	90	10	80
Water Heater / HAN Group (Customer Controlled)	0	0	0
Water Heater / Thermal Storage Group	10	0	10
<b>TOTAL</b>	<b>600</b>	<b>140</b>	<b>460</b>

The equipment identified in Table 1-1 is designed to achieve real demand savings results, eliminating any self-selection bias. In addition, for the Home Area Network (HAN), the results will be able to distinguish between demand savings due to the in-home display showing a critical peak period<sup>1</sup> (with the customer responding by shutting down their home heating system) versus general overall demand savings due only to the physical reminder of the in-home display. Other pilot projects from the region and across the nation are reporting positive results for DR projects; however, it is not clear if these results are over-stating the potential demand savings<sup>2</sup>.

Once the pilot DR equipment is operational, the City will collect qualitative and quantitative data for one full calendar year. The pilot project will conclude with the submission of a report that, based on load and survey data, will evaluate the cost-effectiveness of DR and the City’s electric utility customer’s acceptance of DR technologies.

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<sup>1</sup> Critical peak period is defined as the City’s non-coincident peak (NCP) that would exceed the Contract Demand Quantity allocated to the City under BPA’S wholesale TRM.

<sup>2</sup> Faruqi, Ahmad, Sergici, Sanem and Sharif, Ahmed, The Impact of Informational Feedback on Energy Consumption -- A Survey of the Experimental Evidence (May 1, 2009). Available at SSRN: <http://ssrn.com/abstract=1407701>.

## 1.2 PROJECT RATIONALE

The City is located on the Olympic Peninsula in Washington State, an ideal location for DR technologies because the peninsula is presently served by a capacity-constrained, single-feed radial transmission system. The area has experienced significant population growth and it is projected that power-transmission capacity in the region may be inadequate to supply demand during extremely cold winter conditions<sup>3</sup>. The development of wide-scale DR options have the potential to benefit the City and the region in avoiding costly transmission upgrades and lowering the City's wholesale power supply costs.

Transmission issues may be further exacerbated by the Elwha Ecosystem Restoration Project, which is the second-largest ecosystem restoration project in the history of the National Park Service after the Everglades. This federal project will consist of removing two dams, the Glines and Elwha, and their reservoirs from the Elwha River, which is expected to begin in 2011. Together, these two dams generate over 28 megawatts of electricity and are the only significant sources for power generation on the Northern Olympic Peninsula. Their removal may create further challenges for the City and the BPA for power balancing between distant generation sources and peak demand loads.

In 2010 and 2011, the City will purchase and install a new Advanced Metering Infrastructure (AMI) system to provide "smart" electric and water meters for nearly all of its utility customers, and will develop a robust two-way communications system and integrate it with the City's existing fiber-optic network. This project also includes an initial investigation of "Smart Grid" applications such as distribution utility automation, peak load management, demand response, and home area networks. A key deliverable for the proposed AMI system will be its functional flexibility to interface with the electric utility's Supervisory Control and Data Acquisition (SCADA) System to control demand response applications and the City's substation conservation voltage reduction application.

In preparing for the shift to the BPA's TRM for wholesale power purchases effective October 1, 2011, the City is proceeding with a retail TRM study to independently assess and evaluate methods to equitably allocate the BPA wholesale TRM power costs to customer rate classes (e.g., residential, commercial, etc.), and to develop retail rate design options for each rate class based on the shift to the BPA wholesale TRM power costs. The most advantageous BPA wholesale TRM power cost allocation methodology and retail rate design option developed by this Retail TRM study will be incorporated into the AMI project and used by the City next year as part of a Cost-of-Service Analysis to determine the City's actual retail rates that will be effective on January 1, 2012. Among other items, the development of these retail rate design options includes a DR rate for each rate class, which includes an evaluation of the wholesale TRM NCP demand costs and potential retail customer incentives.

## 1.3 GOALS AND OBJECTIVES

In anticipation of the change to the TRM, the goal of this project is to demonstrate the ability to manage the City's NCP demand in order to meet the following objectives:

- Reduce the City's NCP demand above its assigned contract demand quantity (CDQ)
- Reduce wholesale power supply costs for the City's residential customers
- Minimize the perceived impact (e.g., inconvenience, discomfort) to the City's residential customers (e.g., water heating and space comfort)
- Maximize the City's residential customers' acceptance of DR
- Delay or eliminate regional transmission system upgrades

## 1.4 CONSUMER IMPACT

A voluntary group of 600 residential participants will be enrolled in this pilot project. Each customer will be selected to meet a minimum set of screening criteria and then placed in either a blind control group or a

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<sup>3</sup> Pacific Northwest National Laboratory, Pacific Northwest GridWise Testbed Demonstration Projects, Part I. Olympic Peninsula Project, DOE Contract Number DE-AC05-76RL01830, October 2007.

participant group. Customers will be asked to complete quarterly online surveys to evaluate their perceived impact of the DR technologies.

The maximum impact to the residential customer will be the curtailment of the electric water heating and electric space heating equipment during the City's NCP demand period. Based on other regional studies, the City anticipates this will occur approximately 1 – 2 times per week. The City is also proposing a dispatchable DR component to the pilot project that would allow BPA to control its critical system peak for either generation or transmission. However, for commercial use of any dispatchable DR resource, the incentives to be offered by the BPA to the City would need to be defined and mutually agreed upon.

## **1.5 RECRUITMENT**

The City will request volunteers to participate in the residential DR pilot project. Volunteers will be compensated with a \$10/month incentive, either a credit to their electric bill credit or a cash payment. In addition, customers will receive \$10 incentive for each of the completed quarterly online surveys. Total maximum compensation will be \$160 per customer for one year, or \$80,000. Customers will be contacted with utility bill inserts and through an educational outreach campaign. The baseline control group will receive a \$10 incentive for each of two surveys completed, one at the onset and one at the completion of the project, for a total maximum compensation of \$2,000.

## **1.6 PERSISTENCE OF ASSETS**

The City intends to continue the use of DR assets following the completion of this pilot project. The City anticipates expanding this project to include all willing customers as it strives to minimize any peak demand exceeding its anticipated Contract Demand Quantity (CDQ), to better match BPA's load shape, and to minimize its use of BPA's capacity constrained transmission system.

## **2.0 PROPOSED TECHNOLOGY**

The City plans to issue an AMI System request for Proposals (RFP) in May 2010 to contract with a vendor for the procurement and installation of a turnkey AMI system for its electric and water utilities. The AMI vendor will also provide and install the DR equipment proposed for this pilot project.

The City is planning to use the following technologies:

- Water Heating – electric water heating elements are cycled or turned off during peak curtailment periods by the City's electric utility SCADA system. Water heater curtailments are more effective and align well with the morning peak in water heater consumption. Also, water heater use is similar year round and does not respond dramatically to outside temperature. Therefore, savings are consistent throughout the year.
- Home Area Network (HAN) – control of the customer's electric heating system (forced air electric furnace or heat pump) in combination with the water heating controls.
  - ✓ Utility Controlled Home Heating – cycling or setbacks controlled via a central thermostat capable of communicating with the City's electric utility SCADA system. The 2-way communications gives feedback from on-site AMI meters.
  - ✓ Customer Controlled Home Heating – customer controlled switches are installed to control the heating units or heating equipment circuits. In-home displays will alert customers to periods of peak demand and customers will have the option to comply with the curtailment.
- Electric Thermal Storage (ETS) –although is it not a direct load control measure, ETS units have the potential to reduce peak demand and limit heavy load hour energy use. Thermal storage systems heat enclosed ceramic bricks to as high as 1,650° Celsius during off-peak hours and slowly release the heat as needed during the on-peak period. While thermal storage has little or no energy conservation benefits, it has the



potential to shift almost the entire heating load to off-peak hours. If a unit is working exactly as installed, 100% of the heating load can be curtailed during morning and evening winter peak. In practice, overrides and minimal on-peak usage make up to a 90% peak reduction possible.<sup>4</sup>

### 3.0 EXPECTED IMPACT TO SYSTEM CAPACITY

For the proposed pilot project outlined in the Tasks in Section 5, we expect to achieve an overall peak demand reduction of 387 kW/month as shown in Table 3-1. If only the water heater DR units are deployed at all of the City's 8,900 residential customers, the potential peak demand savings is 6.23 MW/month. Because the City does not have access to natural gas, it is plausible that this project could be expanded to include nearly all residential customers.

<b>Table 3-1 Peak Demand Reduction</b>	
	<b>Peak Demand Reduction (kW/month)</b>
Water Heater Only	260
Water Heater / HAN (Utility Controlled)	175
Water Heater / HAN (Customer Controlled)	0
Water Heater / Thermal Storage	55
<b>TOTAL</b>	<b>490</b>

### 4.0 READINESS

The City is in the process of issuing the AMI system RFP. The selection process includes an initial review of the responding vendors and submittal of the preferred vendor selection to the Utility Advisory Committee (UAC). The UAC reviews all major projects and issues affecting the City's utilities and makes recommendations to the City Council. The UAC is composed of three City Council members, a representative from the industrial rate class and a representative from the residential/commercial rate class. The UAC meets monthly and the meetings are open to the public. Examples of issues addressed by the UAC include utility rate adjustments, capital construction project prioritization and utility policy and procedure changes.

The City Council has approved funding the budget for the AMI system. The City intends to issue the vendor contract by summer 2010. The selected vendor will be required to install a "Phase 1" of the AMI system for the electric utility in conjunction with the pilot project DR equipment by October 1, 2010, which will consist of the 600 residential customers in support of the DR pilot project. The complete balance of the AMI system will be scheduled for completion in the spring of 2011; however, this will not impact the DR pilot project.

Since 2009, the City has had the DR pilot project in its Capital Facility Plan to be developed in conjunction with the AMI system. This proposal to the BPA for the Residential Integrated

Automated Metering Infrastructure Demand Response Pilot Project therefore includes the City's cost-share as delineated in the budget. Further, the City has staff available for the administration and execution of the DR pilot project as outlined in this proposal.

### 5.0 TASKS

The purpose of the proposed DR pilot project is to manage the City's NCP demand. The following tasks accomplish this goal on a pilot scale that can easily be expanded to the City's entire residential rate class.

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<sup>4</sup> SEE: <http://www.steffes.com/off-peak-heating/ets.html>

## 5.1 TASK 1—ADMINISTRATION

The City will provide the overall coordination of the DR pilot project. The City will coordinate all vendor installation schedules with its electric utility customers.

The City will administer the day to day tasks, including the following:

- Prepare and distribute educational materials
- Manage web tool to interact with participants
- Communicate with participants
- Prepare and collect surveys from participants
- Compile survey results
- Collect and compile metering data for evaluation task

## 5.2 TASK 2—RECRUITMENT/INCENTIVES

For this task, the City will contact interested residential customers to determine eligibility to participate in the DR pilot project. The City will use utility bill inserts and advertisements to generate customer interest in this project. The City will select 600 participants on a voluntary basis while meeting the following criteria:

- Single family homes
- All electric space heat and water heating
- Water heater age – less than 10 years old
- Electric heating system age – less than 10 years old
- Internet access to complete online survey
- Exclude homes requiring uninterruptable power (e.g., medical equipment)
- Other criteria mutually agreed upon by BPA and the City

The City will encourage residential customers to participate in the pilot project by offering them an incentive, either a billing credit or a cash payment. It is anticipated a \$10/month incentive for participation in the project and an additional \$10 incentive for each completed survey response is needed to gain adequate customer interest. This will total \$160/participant or a maximum compensation of \$80,000. The baseline control group will receive a \$10 incentive for completing two surveys, one each at the onset and completion of the pilot project, for a maximum compensation of \$2,000.

## 5.3 TASK 3—DEMAND RESPONSE EQUIPMENT TESTING

Under this task, a total of 500 of the 8,900 City residential electric customers will be selected to receive a separate water heater DR control unit to be installed at the same time as the AMI metering equipment. Of these 500 customers, 400 will only receive a water heater DR control unit and 100 will receive additional equipment to test home heating DR techniques.

A baseline control group will consist of 100 customers that do not receive DR equipment, but do receive a new “smart” meter. In order to eliminate self-selection bias, an equipment control group will be selected out of the 500 participants. The *equipment control* group’s participants will still receive the DR equipment and will therefore not know they are in the control group. These participants will respond to the surveys and data will be collected in the same manner as the other DR equipment participants. Additional DR equipment that can be used to control home heating, in addition to the water heating DR controls, will be installed in 100 participant homes, as shown in Table 5-1.

**Table 5-1  
Equipment Testing Matrix**

	<b>Number of Participants</b>	<b>Participants in Control Group (0 hours/day impact)</b>	<b>Participants in Critical Peak Hour Group (1 hour/day impact)</b>
Baseline Control Group (no DR equipment)	100	100	0
Water Heater Only Group	400	30	370
Water Heater / HAN Group (Utility Controlled)	90	10	80
Water Heater / HAN Group (Customer Controlled)	0	0	0
Water Heater / Thermal Storage Group	10	0	10
<b>TOTAL</b>	<b>600</b>	<b>140</b>	<b>460</b>

Data will be collected over a full year beginning October 1, 2010 and ending September 30, 2011.

**5.4 TASK 4—DISPATCHABLE DEMAND RESPONSE**

The focus of this task is to test the methodology for the BPA dispatching DR and prove the City's assets could be used as a large-scale DR resource during the BPA's critical peak periods. This task will test the ability for BPA to remotely control the City's water heating load during its critical peak period peak for the generation or transmission systems.

The City could also set up a communication protocol through its SCADA system to allow BPA to remotely control the City's distribution system voltage through its Conservation Voltage Reduction (CVR) project, impacting both commercial and residential customers. Investigations by the City show that a 2.5%-3.75% reduction in voltage could result in a 1.31%-1.5% reduction in demand. This could potentially contribute another 2.0-2.5 MW of load reduction during a critical peak period. This process could be expanded in the future to allow the BPA to dispatch the 5.8 MW of stand-by generation that the City owns and operates. The two DR resources could easily be considered dispatchable resources given an appropriate economic incentive from the BPA.

**5.5 TASK 5—ECONOMIC EVALUATION**

The economic evaluation will look at the cost-effectiveness of DR from four perspectives; (1) BPA's perspective, (2) the City's perspective, (3) the customer's perspective, and (4) the total resource cost (TRC) perspective.

From BPA's perspective, the analysis will look at avoided transmission facilities upgrades, generation and transmission peak demand savings, functionality of dispatchable DR, and extrapolations to large-scale, system-wide benefits.

From the City's perspective, the analysis will account for avoided NCP generation demand charges and coincident peak demand transmission charges, functionality of large-scale cooperative dispatchable DR, avoided distribution facilities upgrades, customer relations and an opportunity to evaluate the cost-effectiveness of the DR pilot project.

From the customer's perspective the analysis will include reductions to their utility bills due to the wholesale power supply cost savings, pilot project incentives and equipment costs.

The total resource cost (TRC) test will also be applied to show whether or not this application is beneficial to the region as a whole.

## 5.6 TASK 6—CUSTOMER ACCEPTANCE EVALUATION

This task includes the review of customer acceptance based on the survey results. Survey results for the 400 participants with operating DR units will be compared against those 100 participants in the equipment control groups to minimize any self-selection bias. The City will look at seasonal bias toward the DR units. For example, the home heating curtailment will likely be more noticeable during the colder winter months.

The survey will also address customer feedback on the incentives required to participate in a DR project. Each customer with DR equipment will receive a maximum of \$160 for participating in this pilot project for one year. The customer evaluation will look at the project dropout rate and consumer responses to questions on the project's incentives.

## 6.0 PROJECT TIMELINE

The project timeline is outlined on a quarterly basis in Table 6-1 according to BPA's fiscal calendar. The timeline will be further refined during the planning and design phase after award execution.

Table 6-1 Project Timeline								
	FY 2010		FY 2011				FY 2012	
	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Planning and Design								
Customer Recruitment								
Marketing & Education								
Installation								
Testing/Operation								
Evaluation of Results								

## 7.0 MEASUREMENT AND VERIFICATION

The DR pilot project will be evaluated by calculating the baseline consumption (kW) for the period of interest and compared to the two control groups. The *baseline control* group of 100 participants will have a "smart" meter and no DR equipment installed. For the formal evaluation of the technical and economic merits of DR, a double blind study will occur where two volunteer groups will be formed. The first group, the *participant* group, will consist of 450 volunteers who will have their appliances remotely cycled by the utility. The second group, the *equipment control* group, will be 40 volunteers that do not have their appliances cycled by the City. Participants will not know which group they belong to.

The actual consumption data will consist of kW consumed by customers in the *participant* group. The baseline consumption will be calculated using a forecast of average kW consumption using customers from the *baseline control* group. The forecasting model will estimate average customer use and apply the average use to the number of customers in the *participant* group. Independent variables will be included to describe average customer use in the *equipment control* group. Possible variables are: heating degree days, appliance saturations, or monthly variables. Once the forecast model is developed, characteristics of the *equipment control* group (appliance saturations, home size, heating system type, etc) are used to estimate average use for the customers in the *participant* group. Average use is multiplied by the number of customers in the *participant* group to produce

average baseline consumption. The result is a baseline consumption estimate adjusted for the characteristics of the *participant* group. Weather variables will be included to normalize consumption data when forecasting future savings. Actual savings will be based on observed weather. It should also be noted that weather variables would not change across the *participant* and *equipment control* groups since both groups experience the same weather during the period the pilot project is being conducted.

## 8.0 DELIVERABLES

The City will provide BPA with a refined plan and pilot project design within 30 days following the project's award execution. This plan will contain more detailed milestones and a work schedule. However, Table 8-1 provides a preliminary look at the City's deliverables for the pilot project. The City intends to operate the DR pilot project for the remainder of Fiscal Year 2011 and complete the evaluation of the results within 90 days following the pilot project data collection period.

<b>TABLE 8-1 DELIVERABLES</b>	
<b>Milestones</b>	<b>Completion (Days after Award Execution)</b>
Refined Plan & Design	30 days
Status Reports	Monthly (30, 60, 90, etc)
Description of Pilot Test Events	60 days
Testing Begins	180 days
Testing Ends	540 days
Economic Results	720 days
Customer Acceptance Results	720 days

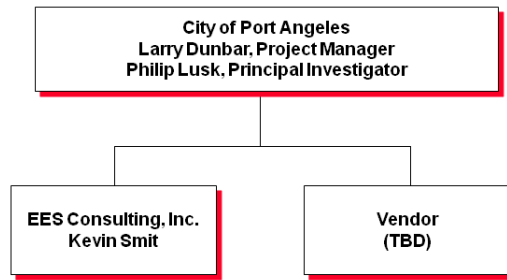
## 9.0 CHALLENGES

The City is currently in the process of securing a vendor to install an AMI system and will request that the vendor also supply and install the DR equipment outlined in this proposal if the City is selected by the pilot project. The timing of the AMI system installation integrating it with the proposed DR pilot project proposal is a challenge; however, the City is in a unique position to be able to complete the installation of the AMI system at the same time as the DR equipment. This presents the opportunity to demonstrate the deployment of a DR project with least possible cost.

## 10.0 KEY PERSONNEL

The project team is composed of the City of Port Angeles, EES Consulting Inc., and a vendor to be determined during the course of the City's AMI system RFP. The City will function as the prime organization with support of a consultant (EES Consulting, Inc. or other consulting firm) and an AMI/DR vendor. Figure 10-1 shows the proposed project team organization as explained above. Larry Dunbar will be the City's project manager for this effort, and Phil Lusk will serve as the principal investigator for the City with the BPA. All team members have more than 25 years of professional experience in the energy industry. The Director of Public Works and Utilities, Glenn A. Cutler, P.E., will serve as the overall project director of this effort. Specific qualifications from each team member organization and staff follows.

**Figure 10-1  
Proposed Project Team  
Organization Chart**



## 10.1 THE CITY OF PORT ANGELES

The City is a non-charter code city incorporated in 1890. The City encompasses an area of approximately 10.7 square miles in northwestern Clallam County along State Highway 101 on the northern shore of Washington's Olympic Peninsula. The City had an estimated population of 19,170 in 2008.

The City's electric utility serves around 10,765 industrial, commercial and residential customers using over nine miles of transmission, 103 miles of overhead distribution and over 40 miles of underground distribution with seven substations.

The City purchases its bulk power from the BPA and also operates the 465-kW Morse Creek hydroelectric facility. The BPA maintains a 69-kV substation in Port Angeles and all of the power to the City is delivered over BPA's transmission system and through their substation.

Capacity on the City's system is directed through two 69-kV sub transmission lines that form an 8.8 mile loop around the City, to seven 69/12.47-kV substations down to a total of 24, 12.47-kV sub distribution feeders to its customer portfolio. The highest coincident peak demand that the City had in 2008 was 108.6-MW and its highest NCP was 144.9-MW. The City averaged 83.5-aMW in 2008.

The following City employees will perform the work associated with this project.

### ***Glenn A. Cutler, P.E., Public Works and Utilities Director***

Glenn A. Cutler is a registered professional engineer in Washington and Georgia with 30 years of experience in managing public works and utility functions for the United States Navy and the City of Port Angeles. He has been the Director of Public Works and Utilities for the City since June 1999. He has earned a Bachelor of Science in Civil Engineering from Newark College of Engineering in Newark, New Jersey and a Master of Science in Civil Engineering from the Georgia Institute of Technology in Atlanta, GA. Mr. Cutler is responsible for managing the City's utility systems (electric, water, waste water, storm water, and solid waste collection and disposal), project management and design, road and street maintenance and improvements and energy programs. Mr. Cutler has been recognized for his outstanding management achievements with six personal decorations while serving on active duty with the United States Navy as a Civil Engineer Corps Officer achieving the rank of Captain (O-6). He has also been recognized for special achievement by the American Public Works Association for facility construction and the Secretary of Navy for energy conservation programs.

### ***Larry Dunbar, Deputy Director of Power Systems, City of Port Angeles***

Mr. Dunbar has 28 years of experience working for electric, water, wastewater and solid waste utilities including the Snohomish County Public Utility District No. 1, City of Richland, and the City of Port Angeles. Larry has a Bachelor's degree in Business Administration and technical degrees in Energy Management and Industrial Refrigeration. He is an active member of the Association of Energy Engineers and the National Association of

Telecommunications Officers. Mr. Dunbar was the advanced metering infrastructure project manager for the City of Richland, which replaced its remote electric meters and basement-set water meters with meters capable of wireless communications. The project management duties included oversight of a staff team, preparation of a request for proposals, evaluation of proposals, negotiation of an agreement with the successful vendor, and oversight of construction and acceptance testing. As the fiber optic project manager for the Cities of Richland and Port Angeles, Dunbar developed municipal area networks providing advanced telecommunications services and oversaw the design and installation of local area networks within numerous utility and municipal facilities.

***Phil Lusk, Power Resources Manager, City of Port Angeles***

Among other items, Phil Lusk manages the conservation program and assists with other projects relative to rate structures, power resources, and power management activities. Prior to his coming to Port Angeles in 2008, he worked as a consultant for a range of public and private clients where his duties included business case and plan development, scenario analysis for various financial strategies, trending analysis, capital investment analysis, and due diligence. Lusk has a Master of Arts in Economics from the University of South Carolina and a Bachelor of Arts in Energy and Environment from the University of North Carolina at Chapel Hill.

***Terry Dahlquist, P.E., Electrical Engineering Manager, City of Port Angeles***

Terry Dahlquist has a Bachelor's degree in Electrical Engineering with 39 years of experience in the design of medium voltage power distribution systems. He started with Public Service Company of Colorado designing overhead and underground distribution in the metropolitan Denver area, and became the lead engineer in charge of the network system serving downtown Denver. Subsequently, he worked with several consulting firms on utility and primary metered military and industrial systems throughout the Rocky Mountains. He is a licensed professional engineer in ten states and has been an expert witness in several court cases relating to utilities. He has been with the City of Port Angeles since 2006.

***Bob Williams, Electric Services Foreman, City of Port Angeles***

Bob Williams has 35 years experience with electric utilities including City of Port Angeles, Snohomish County PUD, Clallam County PUD and Lee County Electric Co-op (Ft. Myers Florida). Positions include Substation and Meter Supervisor, Relay Technician, Wireman, Senior Meterman, and Meterman. Mr. Williams installed, configured and maintained the first AMR system at the Clallam County PUD. Responsibilities at Snohomish included configuration, operation and maintenance of a large data acquisition system. This system included substation interval recording meters, large customer interval recording meters, various communication methodologies and data management software (i.e., MV90). At the City of Port Angeles, Mr. Williams installed and configured a small AMI pilot project in downtown Port Angeles. He also supervised and participated in the installation of a SCADA system providing control to seven city-owned substations. Job responsibilities also include all metering, substation control, and electric system dispatcher. Bob also had conducted seminars for Northwest Public Power Association, Northwest Electric Meter School, and has provided training for the City's apprentices.

***Richard G. Hostetler, Customer Service Manager, City of Port Angeles***

Richard Hostetler has been employed with the City of Port Angeles for more than 28 years. He is the employee most familiar with the City's utility billing software, and associated policy and procedures. Richard is familiar with all City functions as a whole because of his 28 years experience and is quite familiar with all of the City's neighborhoods and streets. Mr. Hostetler played a key role when meter reading transformed from paper to handheld computers. He also was the main resource related to utility billing when the City installed its current integrated finance system software.

**10.2 EES CONSULTING**

EES Consulting is a multidisciplinary management consulting and registered professional engineering firm that provides a broad array of services to clients involved in electric, water, natural gas, wastewater, telecommunications, and other energy and natural resource related businesses. EES Consulting has assisted clients in meeting the challenges in evolving competitive, regulatory and technical environments. Our broad base

of clients includes public and private utilities, regulators, trade associations and large end users located throughout North America. EES Consulting has a proven track record of success in arenas where the results of a particular evaluation or analysis may have far reaching effects on the viability of an organization or the local community.

For this project, EES Consulting proposes that project management be performed by Kevin Smit with day-to-day analytical tasks performed by Steve Andersen, Kelly Tarp and Amber Nyquist and quality control and oversight provided by Gary Saleba and Anne Falcon. If necessary, the expertise of other staff members can be drawn on for specific technical assistance. The following summarizes qualifications of EES Consulting personnel. Resumes of all key EES Consulting project team members are attached.

***Gary Saleba, President***

Gary Saleba is President of EES Consulting, Inc. His areas of specialty include overall quality control for all of EES Consulting's finance and engineering projects. Mr. Saleba has extensive experience in the areas of utility rates and financial planning, management audits, marketing and consumer research, utility load research, forecasting, integrated resource planning, cost-benefit analyses and overall strategic planning. Mr. Saleba has also served on numerous energy and natural resource-related trade associations. He has taught numerous technical seminars for the American Public Power Association, served as Chairman of American Water Works Association's Financial Management Committee and Management Division, and is also serving his second appointment to the board of directors for the Northwest Public Power Association.

***Anne Falcon, Managing Director of Economics and Rates***

Anne Falcon's primary responsibility with EES Consulting includes providing project management and technical support for all types of economic studies. Ms. Falcon has managed projects concerning cost of service and rate analyses, financial planning and regulatory proceedings for electric, natural gas, water and wastewater utilities. Her area of expertise includes restructuring, strategic planning, forecasting, unbundled cost-of-service studies, optimization research and specialized statistical studies. At EES Consulting, Inc., Ms. Falcon has been involved in all aspects of the integrated resource planning process, from the initial identification of demand and supply-side resources to the final ranking of resource portfolios. She has developed numerous decision models for U.S. and Canadian utilities and she has performed resource evaluations by applying social costing principles and risk analysis.

***Steve Andersen, Manager of Project Evaluations***

Mr. Andersen is skilled in evaluating power supply proposals and has done so for many utilities in the region. He has calculated the potential savings in total power supply costs offered by competing suppliers. With his background in power engineering, he is able to assess the technical barriers to potential savings in today's changing electric industry. Mr. Andersen has performed integrated resources plans for both large and small utilities and has performed resource feasibility studies for both utility and industrial clients. He has also performed cost of service analyses for many utilities. This analysis includes developing rates for residential, commercial and large industrial customer classes. He has also audited the power supply costs of large industrial corporations and suggested options for reducing their overall costs.

***Kevin Smit, Senior Project Manager***

Kevin Smit is a Senior Project Manager with over 19 years of technical and management experience, primarily in the energy and utility industry. His current responsibilities include conservation/DSM potential assessments, utility conservation program evaluations, technical and regulatory analyses for electric and water utilities, and resource planning and acquisition. Mr. Smit is a member of the Pacific Northwest Regional Technical Forum which provides the Northwest Power Planning Council and the BPA with development and technical review of conservation measures for the region. Mr. Smit has experience with the Council's methodology and models for estimating cost-effective conservation resources.



***Kelly Tarp, Project Manager***

Kelly Tarp specializes in the areas of project management, cost of service, rate analysis and financial studies. Ms. Tarp has more than nine years experience as a consultant in the energy industry, completing a variety of technical assessments for electric and gas utilities, government agencies, and supporting energy organizations with a focus on distributed generation and renewable energy. In addition, Ms. Tarp has performed a variety of financial studies, including cost of service and rate analyses for electric, water, and wastewater utilities; valuation studies; and financial analyses.

***Amber Nyquist, Analyst***

Amber Nyquist provides analytical expertise for EES Consulting Inc. in support of economic and financial studies. Ms. Nyquist's background includes research in electric utilities and rates and also intensive analytical work and forecasting in various fields. Ms. Nyquist assists in Integrated Resource Planning for small and large utilities. Specifically she analyzes and models conservation and other demand side management resources. In addition to resource planning, she uses her background in econometrics and data analysis to collect quality data and develop load forecasts. Also, she utilizes her research skills to amass current utility information, support survey projects, and to prepare presentation and reference material.

**10.3 VENDOR (TBD)**

The City plans to issue an AMI system RFP on May 5, 2010. The RFP requests pricing for the proposed DR equipment and its installation for the Residential Integrated Automated Metering Infrastructure Demand Response Pilot Project. If the City's pilot project is funded by the BPA, the selected vendor will provide and install the necessary DR equipment on the time schedule outlined in this proposal.

## UNIT 3 – BUDGET

Cost Category	Total Project Costs (\$)	BPA Cost Share (%)	BPA Cost Share (\$)
<b>A. Personnel</b>			
	74,310		
<b>B. Fringe Benefits</b>			
	22,290		
<b>C. Travel</b>			
	8,570	0%	\$0
<b>D. Equipment</b>			
	358,880	50%	\$179,440
<b>E. Supplies (non-durable goods)</b>			
	2,500	0%	\$0
<b>F. Contractual</b>			
	80,560	100%	\$80,560
<b>G. Other Direct Costs</b>			
	107,000	100%	\$107,000
<b>Total Direct Costs</b>	<b>654,110</b>		<b>\$367,000</b>
<b>H. Indirect Costs</b>			
	0		
<b>Total Indirect Costs</b>	<b>0</b>		<b>\$0</b>
<b>Total Costs</b>	<b>654,110</b>		<b>\$367,000</b>