**THE NORTHWEST POWER AND CONSERVATION COUNCIL’S METHODOLOGY FOR DETERMINING ACHIEVABLE CONSERVATION POTENTIAL**

**OUTLINE OF MAJOR ELEMENTS**

**DOCKET UE-100176,**

**STAFF MEMO ATTACHMENT 1**

# Resource Definitions

### Technical Potential

### Economic Potential

### Achievable Potential

#### Non-lost opportunity resources (“schedulable”)

#### Lost opportunity resources

# Technical Resource Potential Assessment

## Review wide array of energy efficiency technologies and practices across all sectors and major end uses

## Methodology

### Technically feasibility savings = Number of applicable units \* incremental savings/applicable unit

### “Applicable” Units accounts for

##### Fuel saturations (e.g. electric vs. gas DHW)

##### Building characteristics (single family vs. mobile homes, basement/non-basement, etc.)

##### System saturations, (e.g., heat pump vs. zonal, central AC vs. window AC)

##### Current measure saturations

##### New and existing units

##### Measure life (stock turnover cycle)

##### Measure substitutions (e.g., duct sealing of homes with forced-air resistance furnaces vs. conversion of homes to heat pumps with sealed ducts)

### “Incremental” Savings/applicable unit accounts for

##### Expected kW and kWh savings shaped by time-of-day, day of week and month of year

##### Savings over baseline efficiency

###### Baseline set by codes/standards or current practices

###### Not always equivalent to savings over “current use” (e.g., new refrigerator savings are measured as “increment above current federal standards, not the refrigerator being replaced)

##### Climate - heating, cooling degree days and solar availability

##### Measure interactions (e.g. lighting and HVAC, duct sealing and heat pump performance, heat pump conversion and weatherization savings)

# Economic Potential - Ranking Based on Resource Valuation

## Total Resource Cost (TRC) is the criterion for economic screening - TRC includes all cost and benefits of measure, regardless of who pays for or receives them.

### TRC B/C Ratio > = 1.0

### Levelized cost of conserved energy (CCE) < levelized avoided cost for the load shape of the savings may substitute for TRC if “CCE” is adjusted to account for “non-kWh” benefits, including deferred T&D, non-energy benefits, environmental benefits and Act’s 10% conservation credit

## Methodology

### Energy and capacity value (i.e., benefit) of savings based on avoided cost of future wholesale market purchases (forward price curves)

### Energy and capacity value accounts for shape of savings (i.e., uses time and seasonally differentiated avoided costs and measure savings)

### Uncertainties in future market prices are accounted for by performing valuation under wide range of future market price scenario during Integrated Resource Planning process (See 4.1)

## Costs Inputs (Resource Cost Elements)

### Full incremental measure costs (material and labor)

### Applicable on-going O&M expenses (plus or minus)

### Applicable periodic O&M expenses (plus or minus)

### Utility administrative costs (program planning, marketing, delivery, on-going administration, evaluation)

## Benefit Inputs (Resource Value Elements)

### Direct energy savings

### Direct capacity savings

### Avoided T&D losses

### Deferral value of transmission and distribution system expansion (if applicable)

### Non-energy benefits (e.g. water savings)

### Environmental externalities

## Discounted Presented Value Inputs

### Rate = After-tax average cost of capital weighted for project participants (real or nominal)

### Term = Project life, generally equivalent to life of resources added during planning period

### Money is discounted, not energy savings

# Achievable Potential

## Annual acquisition targets established through Integrated Resource Acquisition Planning (IRP) process (i.e., portfolio modeling)

## Conservation competes against all other resource options in portfolio analysis

### Conservation resource supply curves separated into

#### Discretionary (non-lost opportunity)

#### Lost-opportunity

#### Annual achievable potential constrained by historic “ramp rates” for discretionary and lost-opportunity resources

##### Maximum ramp up/ramp down rate for discretionary is 3x prior year for discretionary, with upper limit of 85% over 20 year planning period

##### Ramp rate for lost-opportunity is 15% in first year, growing to 85% in twelfth year

##### Achievable potentials may vary by type of measure, customer sector, and program design (e.g., measures subject to federal standards can have 100% “achievable” potential)

## Revise Technical, Economic and Achievable Potential based on changes in market conditions (e.g., revised codes or standards), program accomplishments, evaluations and experience

### All programs should incorporate Measurement and Verification (M&V) plans that at a minimum track administrative and measure costs and savings.

### Use International Performance Measurement and Verification Protocols (IPMVP) as a guide

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