



# Commercial Odds & Ends

Conservation Resource Advisory Committee  
December 17, 2014

## Measures Covered Today

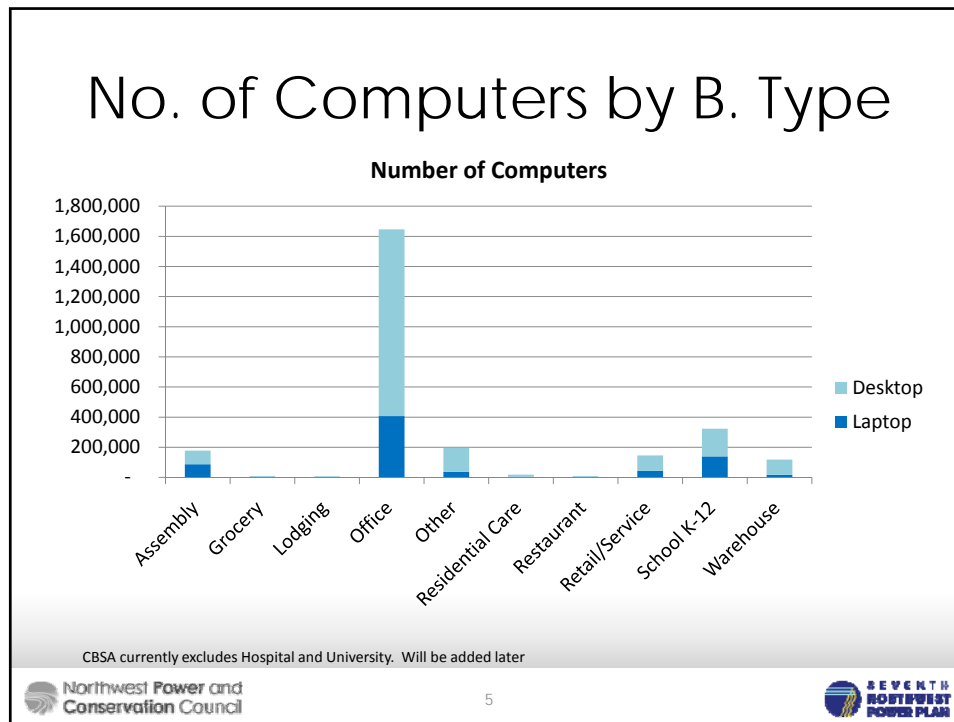
- **Smart Plug Power Strips**
- **Packaged Refrigeration Equipment**

## Smart Plug Power Strips

Parameter	Sixth Plan	Seventh Plan (draft)
Average Savings at busbar (kWh per Power Strip)	NOT IN SIXTH PLAN. New Measure	109
Levelized Cost (\$/MWh)		15
Baseline EE Saturation		10%
Number of Units (20 years)		2.7 Million
Achievable Technical Potential (aMW over 20 years)		26

## Smart Plug Power Strips

- Measure data from RTF
- Number of units based on the number of computers from CBSA
  - Assume 1 computer ~ 1 office “space”
  - Include both desktops and laptops
- Saturation and applicability
  - Assume 10% saturation
  - Assume 90% applicability
- Achievability
  - Standard 85%



## Packaged Refrigeration Equipment

- Includes glass and solid door refrigerators and freezers
- DOE published a final rule regarding energy conservation standards for commercial refrigeration equipment. [79 FR 17725](#) (March 28, 2014)
  - The DOE analysis considers performance and cost of 25 different classes of refrigerators and freezers
- This analysis determined - for each class - which DOE Efficiency Level the Standards were ultimately set to and determines the incremental savings, incremental cost, and applicable portion of the market for each Efficiency Level more efficient than the Standards

## Packaged Refrigeration Equipment

Parameter	Sixth Plan	Seventh Plan (draft)
Average Savings at busbar (kWh)	200 – 1500, depending on type	1 – 40, depending on measure
Levelized Cost (\$/MWh)	25	\$97 - \$3,000
Baseline EE Saturation	5%	TBD
Number of Units (20 years)	52,000	TBD
Achievable Technical Potential (aMW over 20 years)	49	TBD

## Packaged Refrigeration Measure Data - FYI

Packaged Refrigeration Measure	Savings (kwh/yr)	Life (yrs)	Capital Cost	Annual O&M	Levelized Cost (\$/MWh)
SelfContCondense_LowTemp_Federal Standard to Tier 1	0.3	9.7	0.1	0.01	97.4
SelfContCondense_LowTemp_Tier 1 to Tier 2	1.0	9.7	0.6	0.03	113.5
RemoteCondense_MedTemp_Tier 1 to Tier 2	29.2	9.7	31.1	1.47	202.7
RemoteCondense_MedTemp_Federal Standard to Tier 1	23.4	9.7	25.7	1.29	213.6
SelfContCondense_LowTemp_Tier 2 to Tier 3	2.4	9.7	4.9	0.24	408.7
SelfContCondense_IceCream_Federal Standard to Tier 1	36.5	9.7	116.5	5.68	630.7
SelfContCondense_MedTemp_Tier 1 to Tier 2	5.7	9.7	21.9	0.91	732.2
SelfContCondense_LowTemp_Tier 3 to Tier 4	1.0	9.7	4.2	0.19	806.2
SelfContCondense_MedTemp_Tier 2 to Tier 3	1.2	9.7	7.8	0.30	1,241.7
RemoteCondense_LowTemp_Tier 2 to Tier 3	0.0	9.7	0.0	0.00	1,320.3
RemoteCondense_LowTemp_Tier 3 to Tier 4	0.0	9.7	0.0	0.00	1,320.3
SelfContCondense_IceCream_Tier 2 to Tier 3	0.0	9.7	0.0	0.00	1,320.3
SelfContCondense_IceCream_Tier 3 to Tier 4	0.0	9.7	0.0	0.00	1,320.3
SelfContCondense_IceCream_Tier 1 to Tier 2	0.0	9.7	0.0	0.00	1,320.3
SelfContCondense_MedTemp_Federal Standard to Tier 1	25.7	9.7	175.7	8.60	1,361.0
RemoteCondense_LowTemp_Federal Standard to Tier 1	49.0	9.7	347.2	15.73	1,386.2
RemoteCondense_LowTemp_Tier 1 to Tier 2	2.0	9.7	14.7	0.70	1,434.2
SelfContCondense_MedTemp_Tier 3 to Tier 4	6.0	9.7	68.3	2.68	2,149.7
RemoteCondense_MedTemp_Tier 3 to Tier 4	0.8	9.7	11.4	0.54	2,932.2
RemoteCondense_MedTemp_Tier 2 to Tier 3	12.0	9.7	188.6	8.83	3,117.7

## Packaged Refrigeration Measure Status

- **Good news: the standard achieved/will achieve this potential for us**
- **With the very high levelized costs, and relatively low potential above the standard, we put the development of this measure **on hold****
- **Will likely still include in the supply curves, but the RPM won't pick much of it in most scenarios**
- **The detailed workbook with analysis can be made available if anyone interested**