



# 2013 Avoided Cost Study Application

*Brief Overview*

*October 8, 2013*





## 2013 Avoided Cost Study (AESC)

- Avoided Cost Study (“AESC”) was finalized July 2013
- Originally intended for use in the 2014 and 2015 programs
- Developed through and prepared for the regional (six New England states) Avoided Energy Supply Component study group – dozens of participants in the study group process
- AESC prepared regionally every two years since 1999
- Based on updated market prices and forecasts
- 2013 AESC Report includes gas DRIPE and new “cross-fuel” DRIPE, plus values for avoided cost of carbon and avoided cost of compliance with GWSA



# Change in Electric Avoided Costs

**Illustration of Electric Avoided Cost Components  
AESC 2013 vs. AESC 2011  
(WCMA Zone, Summer On-Peak, 15-Year Levelized Results, 2013\$)**

| AESC Components                                      | AESC Costs   |              | AESC 2013 Values Relative to AESC2011 |               |
|--|--------------|--------------|---------------------------------------|---------------|
|  | AESC 2011    | AESC 2013    | cents/kwh                             | % Difference  |
|  | cents/kwh    | cents/kwh    |                                       |               |
| Avoided Capacity Costs <sup>1,2</sup>                | 1.11         | 2.01         | 0.90                                  | 80.7%         |
| Avoided Energy Costs                                 | 9.36         | 7.64         | -1.73                                 | -18.4%        |
| <b>Capacity and Energy Subtotal</b>                  | <b>10.47</b> | <b>9.65</b>  | <b>-0.83</b>                          | <b>-7.9%</b>  |
| DRIFE (price effects)                                |              |              |                                       |               |
| Capacity <sup>2</sup>                                | 1.27         | 0.69         | -0.57                                 | -45.2%        |
| Energy <sup>3</sup>                                  | 3.29         | 2.74         | -0.54                                 | -16.5%        |
| <b>DRIFE Subtotal</b>                                | <b>4.55</b>  | <b>3.44</b>  | <b>-1.11</b>                          | <b>-24.5%</b> |
| <b>Subtotal: Avoided Capacity and Energy + DRIFE</b> | <b>15.03</b> | <b>13.09</b> | <b>-1.94</b>                          | <b>-12.9%</b> |



# Change in Gas Avoided Costs

Comparison of Natural Gas Avoided Costs by End Use Assuming Some Avoidable Retail Margin  
 AESC 2013 vs. AESC 2011  
 (15-Year Levelized, 2013\$/MMBtu)

| RESIDENTIAL    |           |         |     | COMMERCIAL & INDUSTRIAL |         |     | ALL<br>RETAIL<br>END<br>USES |
|----------------|-----------|---------|-----|-------------------------|---------|-----|------------------------------|
| Non<br>Heating | Hot Water | Heating | All | Non<br>Heating          | Heating | All |                              |

| Southern New England (a) |         |        |         |         |  |         |         |         |  |         |
|--------------------------|---------|--------|---------|---------|--|---------|---------|---------|--|---------|
| AESC 2011                | 7.89    | 7.89   | 9.70    | 9.41    |  | 7.83    | 9.11    | 8.72    |  | 9.04    |
| AESC 2013                | 6.67    | 7.17   | 8.30    | 8.12    |  | 6.88    | 7.74    | 7.44    |  | 7.80    |
| 2011 to 2013 change      | -15.43% | -9.17% | -14.43% | -13.70% |  | -12.06% | -15.02% | -14.74% |  | -13.77% |

| Northern New England (a) |         |       |       |        |  |         |         |         |  |         |
|--------------------------|---------|-------|-------|--------|--|---------|---------|---------|--|---------|
| AESC 2011 (2013\$)       | 7.71    | 7.71  | 9.26  | 9.02   |  | 7.84    | 9.08    | 8.71    |  | 8.86    |
| AESC 2013                | 6.53    | 8.04  | 9.35  | 8.91   |  | 7.04    | 7.43    | 7.17    |  | 7.31    |
| 2011 to 2013 change      | -15.34% | 4.17% | 0.97% | -1.19% |  | -10.21% | -18.21% | -17.67% |  | -17.56% |

**Notes**

(a) Massachusetts was included with Northern New England in AESC 2011  
 but is included with Southern New England in AESC 2013

(b) Factor to convert 2011\$ to 2013\$ = 1.0331



# Scenario Review – National Grid

- National Grid ran several scenarios on 2014 planned data using 2013 AESC values for all values that had been used before and:
  - **Scenario 1: Excluding** cross fuel DRIPE and gas DRIPE, using **original** Plan impacts
  - **Scenario 2: Excluding** cross fuel DRIPE and gas DRIPE, using **updated** 2012 EEAR impacts for 2014
  - **Scenario 3: Including** cross fuel DRIPE and gas DRIPE, using **original** Plan impacts
  - **Scenario 4: Including** cross fuel DRIPE and gas DRIPE, using **updated** 2012 EEAR impacts for 2014
- All BCRs remain cost-effective, except potentially Res Products on gas side only in Scenario 2, above (but PAs not proposing to exclude cross fuel/gas DRIPE)
  - Other PAs seeing similar trends
- Avoided carbon would increase benefits, and therefore, BCRs



# National Grid 2014 Impacts Example – Scenario Runs, Table Format

|            | Gas Supply & Cross Fuel DRIPE | 2012 EEAR Updated Impacts | Impact on Benefits |        | Adjusted Portfolio BCR<br>(As filed gas: 1.88)<br>(As filed elec: 3.88) |
|------------|-------------------------------|---------------------------|--------------------|--------|---|
| SCENARIO 1 | -                             | -                         | Gas                | 9%↓    | 1.71  |
|            |                               |                           | Electric           | 9%↓    | 3.54  |
| SCENARIO 2 | -                             | ✓                         | Gas                | 12.5%↓ | 1.64  |
|            |                               |                           | Electric           | 11%↓   | 3.46  |
| SCENARIO 3 | ✓                             | -                         | Gas                | 12%↑   | 2.10  |
|            |                               |                           | Electric           | 9.5%↓  | 3.51  |
| SCENARIO 4 | ✓                             | ✓                         | Gas                | 8%↑    | 2.02  |
|            |                               |                           | Electric           | 9%↓    | 3.53  |



# Application of 2013 Avoided Cost Study

- Regional study, but each state decides how to apply the study results in its state, and which values to apply
- The DPU has indicated that it will convene the DPU 11-120 working group to address the application of the 2013 AESC (current plan and future cycle syncing)
- The Mass. Attorney General has filed comments on the 2013 AESC at the DPU
- EEAC consultants recommend the 2013 AESC values be applied for the 2014 and 2015 programs through the Implementation Update in February/March 2014, as the best available values for avoided costs