

# Forward Looking EAS Offset

MIC Special Session  
June 10, 2020

IMM



Monitoring Analytics

# IMM Method

- **Forward energy net revenue offset for use in capacity market**
- **Forward energy prices**
  - **Western Hub forward prices from Platts**
  - **Calculated at bus level**
  - **Historical hourly price spread**
- **Forward gas prices from Platts**
  - **Calculated at locational level**
  - **Historical hourly price spread**

# IMM Method

- **Reference CT and CC unit optimally dispatched using new entrant parameters (2019 State of the Market Report, Section 7: Net Revenue)**
- **Optimal dispatch**
- **Ancillary revenues are reactive capability payments**
  - **Average of recent FERC decisions/settlements**
  - **Currently \$3,350/MW-Year of reactive capability revenue**

# Issues

- **Historical time period for calculation of hourly basis adjustment for energy and gas forwards**
- **Location(s) of CT**
  - **CONE areas**
  - **Zones**
- **Date of forwards for energy and gas**
- **Period of forwards**
  - **Delivery year**
- **Cost-based offers**

# Issues

- **Apply forward looking net revenue calculation in all cases:**
  - **Net CONE in VRR curve**
  - **MOPR floors**
  - **Market seller offer caps**
  - **Unit specific reviews**
  - **Default net CONE and net ACR**
- **Actual units**
  - **Parameters**
  - **Cost-based offers**
- **IMM calculation for all units**

# Results

- **Historical hourly price spreads applied to forward prices for reference CT and CC to create forward hourly prices and forward marginal costs for dispatch**
- **Gas and Western Hub forwards as of June 3, 2020**
- **Basis differentials and E&AS calculated using:**
  - **2017 history**
  - **2018 history**
  - **2019 history**
  - **Average of three years**

# Forward E&AS: Combustion Turbine

| Zone     | Combustion Turbine (CT) (\$/MW-Yr) |  |            |            |                               |
|----------|------------------------------------|--|------------|------------|-------------------------------|
|          | 3 Year Historical Avg 2017-2019    | 3 Year Forward Avg 2021-2023 Forwards as of June 3, 2020 |            |            | Avg 2021-2023 Basis 2017-2019 |
|          |                                    | 2017 Basis   | 2018 Basis | 2019 Basis |                               |
| AECO     | \$32,574                           | \$25,451   | \$32,554   | \$25,045   | \$27,684                      |
| AEP      | \$54,690                           | \$41,478   | \$48,183   | \$46,147   | \$45,269                      |
| APS      | \$51,768                           | \$59,879   | \$65,408   | \$58,456   | \$61,248                      |
| ATSI     | \$60,382                           | \$52,657   | \$65,702   | \$53,368   | \$57,242                      |
| BGE      | \$45,211                           | \$46,038   | \$50,557   | \$46,625   | \$47,740                      |
| ComEd    | \$29,428                           | \$34,690   | \$28,049   | \$34,719   | \$32,486                      |
| DAY      | \$59,999                           | \$51,166   | \$60,727   | \$59,828   | \$57,240                      |
| DEOK     | \$60,407                           | \$47,292   | \$60,704   | \$53,702   | \$53,900                      |
| DLCO     | \$48,243                           | \$32,586   | \$48,591   | \$32,742   | \$37,973                      |
| Dominion | \$46,875                           | \$45,910   | \$52,625   | \$46,030   | \$48,188                      |
| DPL      | \$24,245                           | \$24,040   | \$35,552   | \$27,188   | \$28,927                      |
| EKPC     | \$44,149                           | \$56,290   | \$69,020   | \$47,547   | \$57,619                      |
| JCPL     | \$32,771                           | \$27,924   | \$29,983   | \$23,963   | \$27,290                      |
| Met-Ed   | \$46,651                           | \$41,592   | \$40,495   | \$36,186   | \$39,424                      |
| PECO     | \$39,180                           | \$35,251   | \$36,790   | \$29,896   | \$33,979                      |
| PENELEC  | \$66,285                           | \$56,917   | \$64,162   | \$51,180   | \$57,420                      |
| Pepco    | \$33,018                           | \$40,418   | \$45,411   | \$40,723   | \$42,184                      |
| PPL      | \$59,766                           | \$49,302   | \$50,351   | \$42,650   | \$47,434                      |
| PSEG     | \$44,637                           | \$34,817   | \$35,520   | \$28,084   | \$32,807                      |
| RECO     | \$34,918                           | \$30,262   | \$34,721   | \$27,763   | \$30,915                      |
| PJM      | \$45,760                           | \$41,698   | \$47,755   | \$40,592   | \$43,349                      |

# Forward E&AS: Combined Cycle

| Zone     | Combined Cycle (CC) (\$/MW-Yr)  |  |            |            |                               |
|----------|---------------------------------|--|------------|------------|-------------------------------|
|          | 3 Year Historical Avg 2017-2019 | 3 Year Forward Avg 2021-2023 Forwards as of June 3, 2020 |            |            | Avg 2021-2023 Basis 2017-2019 |
|          |                                 | 2017 Basis   | 2018 Basis | 2019 Basis |                               |
| AECO     | \$59,904                        | \$45,369   | \$51,949   | \$42,524   | \$46,614                      |
| AEP      | \$84,738                        | \$76,387   | \$80,618   | \$80,766   | \$79,257                      |
| APS      | \$89,471                        | \$97,446   | \$99,970   | \$97,414   | \$98,277                      |
| ATSI     | \$89,403                        | \$92,244   | \$99,719   | \$92,443   | \$94,802                      |
| BGE      | \$84,981                        | \$71,116   | \$74,830   | \$69,978   | \$71,975                      |
| ComEd    | \$50,012                        | \$67,912   | \$54,507   | \$67,380   | \$63,266                      |
| DAY      | \$90,200                        | \$91,824   | \$95,833   | \$100,418  | \$96,025                      |
| DEOK     | \$89,119                        | \$85,656   | \$92,662   | \$92,635   | \$90,318                      |
| DLCO     | \$74,768                        | \$63,327   | \$76,321   | \$64,750   | \$68,133                      |
| Dominion | \$77,141                        | \$77,967   | \$83,414   | \$77,392   | \$79,591                      |
| DPL      | \$35,737                        | \$39,185   | \$52,147   | \$35,144   | \$42,158                      |
| EKPC     | \$73,889                        | \$88,149   | \$97,429   | \$74,859   | \$86,812                      |
| JCPL     | \$60,229                        | \$47,959   | \$48,056   | \$42,287   | \$46,101                      |
| Met-Ed   | \$72,925                        | \$71,531   | \$68,404   | \$69,819   | \$69,918                      |
| PECO     | \$66,078                        | \$65,971   | \$65,323   | \$60,895   | \$64,063                      |
| PENELEC  | \$92,641                        | \$92,919   | \$97,000   | \$89,355   | \$93,091                      |
| Pepco    | \$69,227                        | \$65,593   | \$69,323   | \$64,292   | \$66,403                      |
| PPL      | \$82,473                        | \$81,667   | \$77,529   | \$76,117   | \$78,438                      |
| PSEG     | \$72,645                        | \$58,428   | \$56,051   | \$51,161   | \$55,214                      |
| RECO     | \$62,231                        | \$51,487   | \$52,988   | \$49,744   | \$51,407                      |
| PJM      | \$73,891                        | \$71,607   | \$74,704   | \$69,969   | \$72,093                      |

# Forward E&AS: CT & CC

|                              | \$/MW-Day |       |
|------------------------------|-----------|-------|
|                              | CT        | CC    |
| Gross CONE (ICAP)            | \$294     | \$320 |
| E&AS Revenues (historical)   | \$125     | \$202 |
| Net CONE (ICAP) (historical) | \$169     | \$118 |
| E&AS Revenues (forward)      | \$119     | \$198 |
| Net CONE (ICAP) (forward)    | \$175     | \$122 |

## Forward E&AS: CT & CC

- E&AS forward revenues are the average results of forward dispatch using 2017 as the basis year, 2018 as the basis year, and 2019 as the basis year
- For the CT,  $\$43,349/\text{MW-Yr} = \$119/\text{MW-Day}$
- For the CC,  $\$72,093/\text{MW-Yr} = \$198/\text{MW-Day}$

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