
AUSTIN ENERGY
INVESTING IN A CLEAN FUTURE
Austin Energy's Resource, Generation and
Climate Protection Plan to 2020 Update
June 4, 2014

INVESTING IN A CLEAN FUTURE

# Austin Energy Update to Austin Generation Resource Planning Task Force

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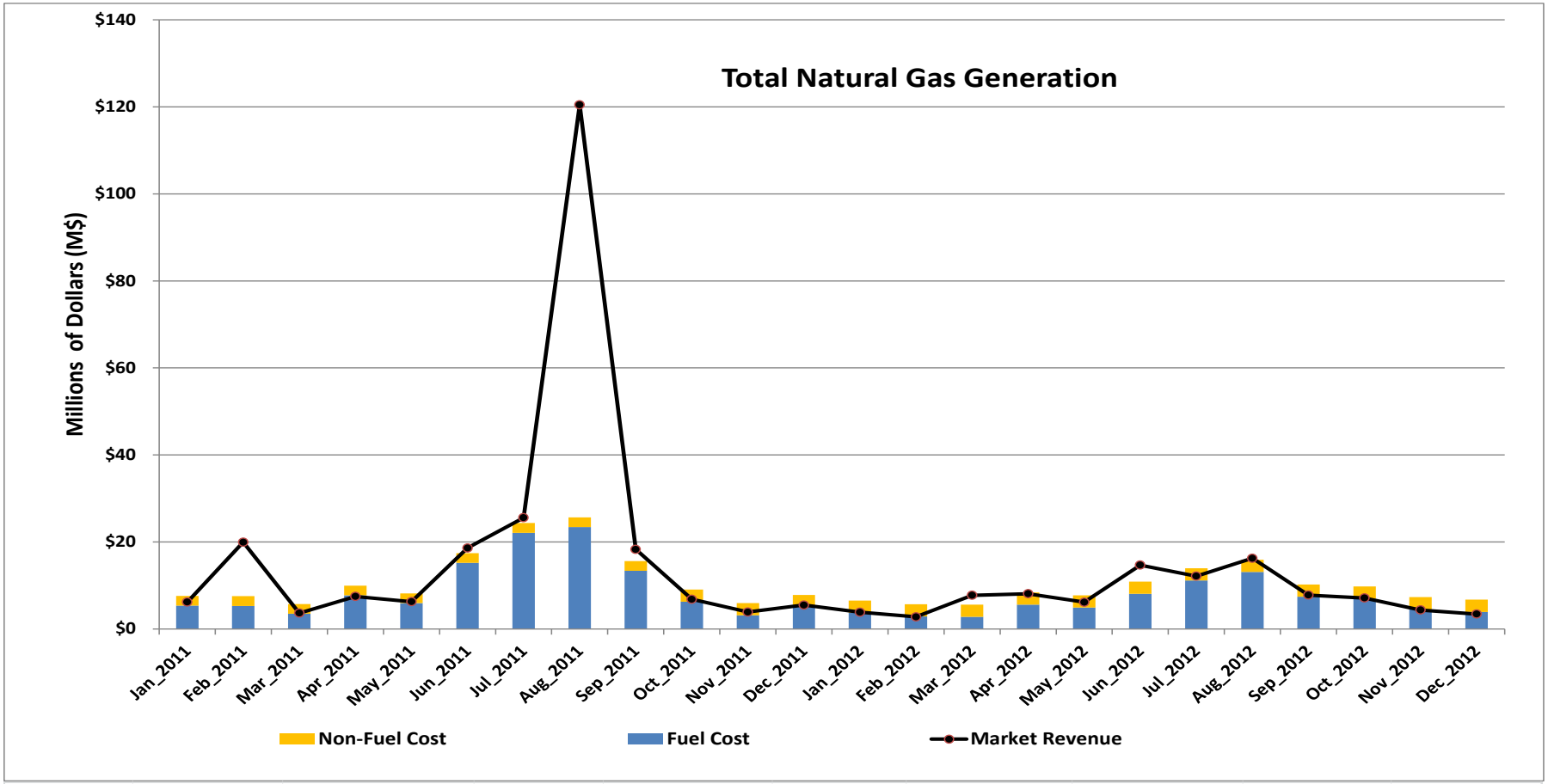
June 4, 2014

# Agenda

- Austin Energy all-in historical production cost/revenue for Gas and Wind units
- Recap of the Methodology review with LSAC Experts
- Resource Planning Guiding Principals

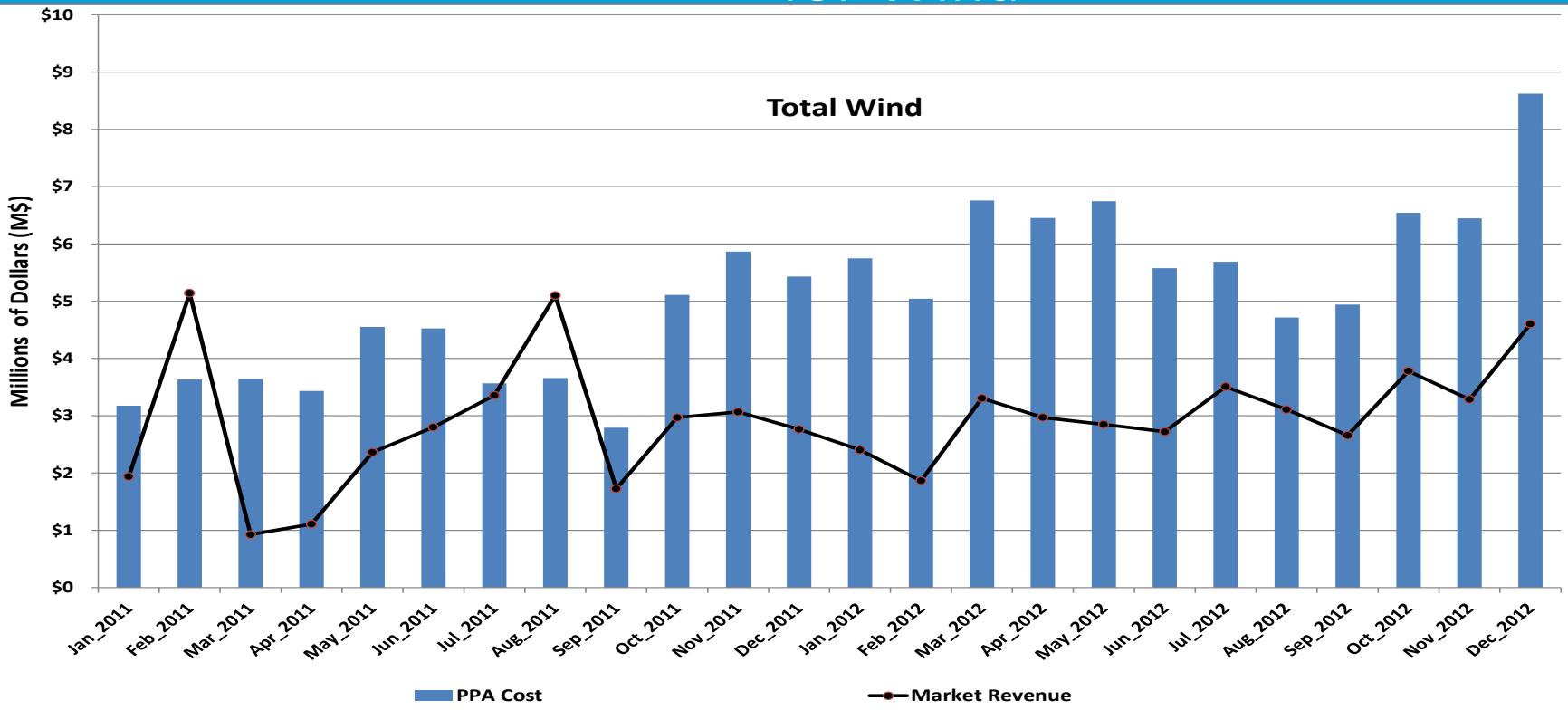
# Austin Energy All in Production Cost/Revenue for Gas units




**Summary**

| | Generation MWh | Fuel Cost ($Million) | Non-Fuel Cost ($Million) | Total Cost ($Million) | Total Cost ($/MWH) | Total Revenue ($Million) | Total Revenue ($/MWH) | Net Revenue/Cost ($Million) | Net Revenue/Cost ($/MWH) |
|---|---|---|---|---|---|---|---|---|---|
| **CY 2011** | 1,760,176 | $116.3 | $28.6 | $144.8 | $82.28 | $242.7 | $137.87 | **$97.8** | **$55.59** |
| **CY 2012** | 1,388,101 | $75.0 | $33.7 | $108.7 | $78.32 | $94.3 | $67.95 | **($14.4)** | **($10.37)** |

# Austin Energy Renewable Energy Cost/Revenue for Wind




**Summary**

| | Generation MWh | PPA Cost ($Million) | Non-Fuel Cost ($Million) | Total Cost ($Million) | Total Cost ($/MWH) | Total Revenue ($Million) | Total Revenue ($/MWH) | Net Revenue/Cost ($Million) | Net Revenue/Cost ($/MWH) |
|---|---|---|---|---|---|---|---|---|---|
| **CY 2011** | 1,294,451 | $49.4 | $0.0 | $49.4 | $38.15 | $33.3 | $25.69 | **($16.1)** | **($12.46)** |
| **CY 2012** | 1,845,660 | $73.3 | $0.0 | $73.3 | $39.70 | $37.0 | $20.07 | **($36.2)** | **($19.63)** |

- Other costs such as Congestion cost & contract sharing cost are not included here
  - The totals shown here is in Calendar year and will be different from the previous update which is in Fiscal year

# Solar PV Cost/Benefit Approach (LSAC Review)

- Based on the expected annual cash flow for AE
  - Forecast period: 2014 to 2020
  - Outflows: Payments going out
  - Inflows: Revenues coming in

- Outflows (i.e. cost)
  - Residential: Value of Solar (VOS) rate x kWh + rebate
  - Commercial: (PBI + average base rates) x kWh
  - Community PV: Purchased Power Agreement (PPA) x kWh
  - Utility PV: Purchased Power Agreement (PPA) x kWh

- Inflows (i.e. revenues/benefits/avoided costs)
  - Solar PV hourly output kWh x AE load zone hourly LMP
  - Community PV also includes
    - 2% ERCOT transmission losses
    - AE 4 CP transmission TCOS savings
  - Adjustments already accounted for VOS and net meter for Residential/Commercial

# Solar PV Scenarios Considered (LSAC Review)

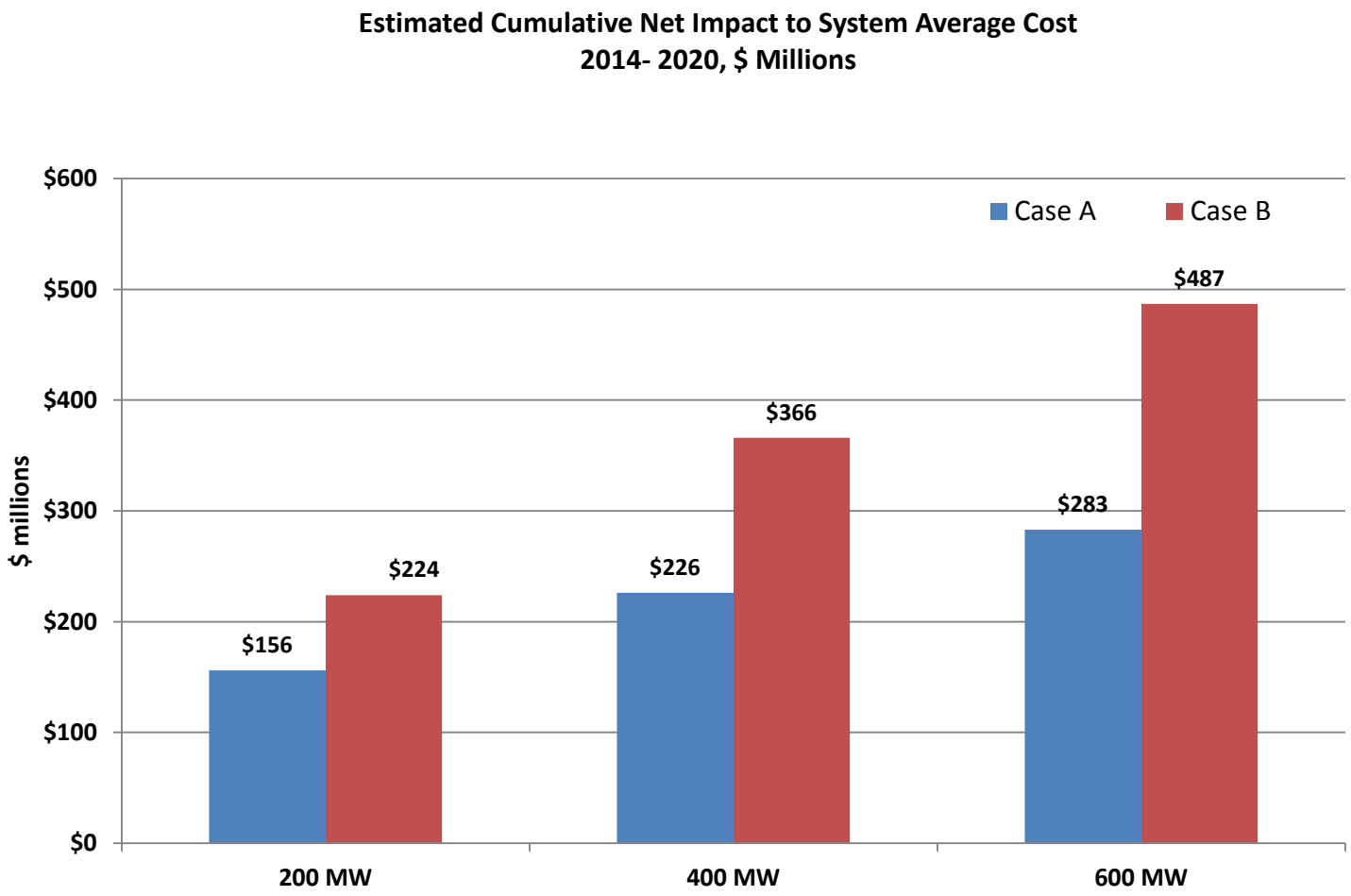
| 2020 Scenario | MW | | | | | |
|---|---|---|---|---|---|---|
| | Local | | | | Utility Scale | 2020 Goal |
| | Residential | Commercial | Community | Total | Wholesale | |
| Existing 48 MW | 9.9 | 8.1 | | 18 | 30 | |
| Current Goal (200 MW) | 38 | 39 | 10 | 87 | 113 | 200 |
| Inc. to 400 MW (LSAC Recommendation) | 50 | 50 | 100 | 200 | 200 | 400 |
| Inc. to 600 MW (LSAC Recommendation) | 50 | 50 | 200 | 300 | 300 | 600 |

# Solar PV Scenarios – Assumptions (LSAC Review)

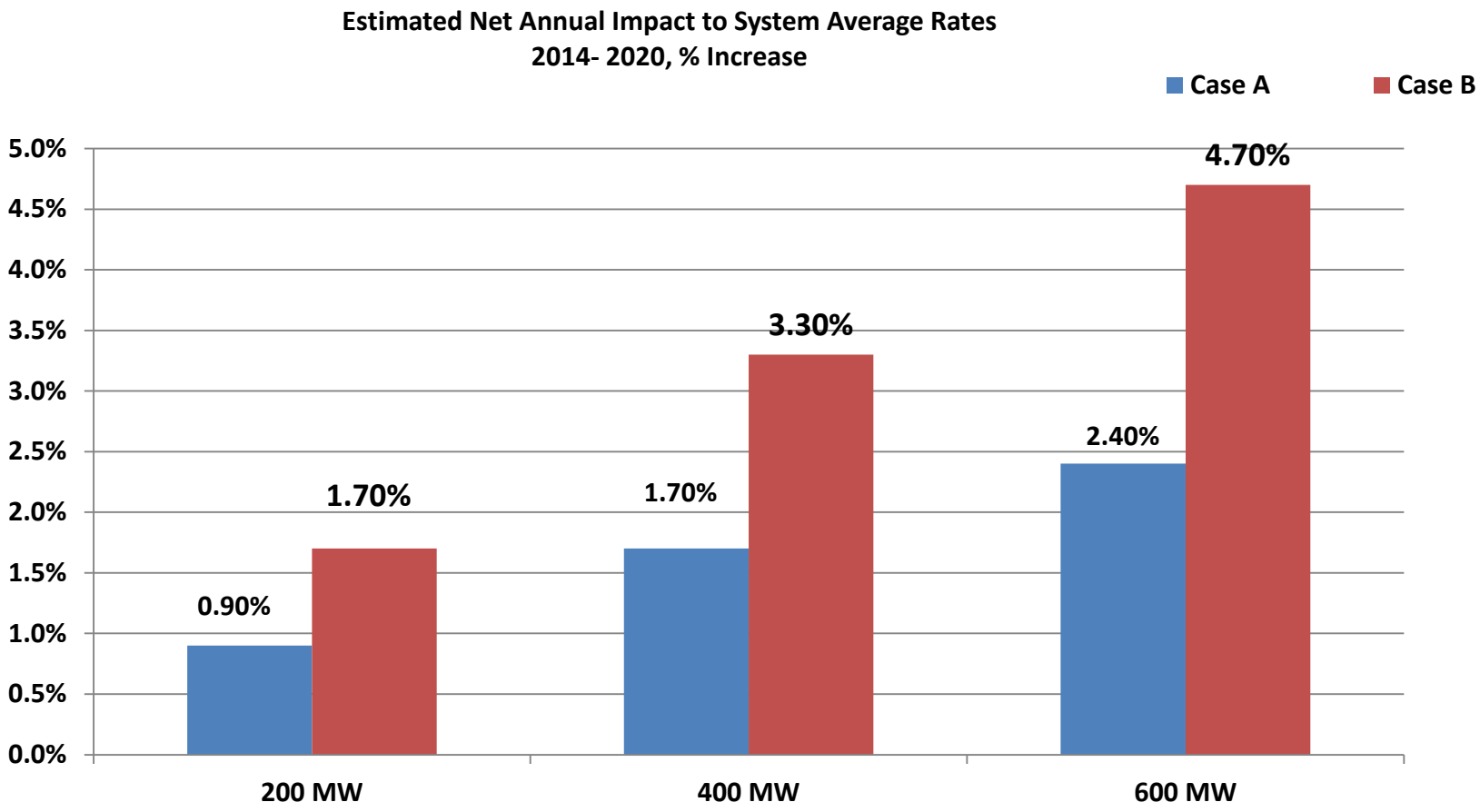
- **Case A**
  - Residential - current value of solar (VOS) of 12.8 cents/kWh for the future years; rebates decline over time
  - Commercial - includes both PBI (energy) and cost not recovered by base rates due to net metering. The PBI declines over time
  - Community Solar - based on recent Indicative offer of $110 / MWh and declines by 5% each year.
  - Wholesale - based on indicative offers of $69 / MWh and declines by 5% each year.
  - Assumes Production Tax Credit does not expire over the period

- **Case B**
  - Residential - Same as Case A, but solar costs and rebates remain constant over time
  - Commercial - Same as Case A, but solar costs and rebates remain constant over time
  - Community Solar - based on wholesale offers adjusted for lower capacity factor and higher O & M costs.
  - Wholesale - based on average of February 2013 renewable RFP offers for solar PV
  - Assumes Production Tax Credit expires after 2016

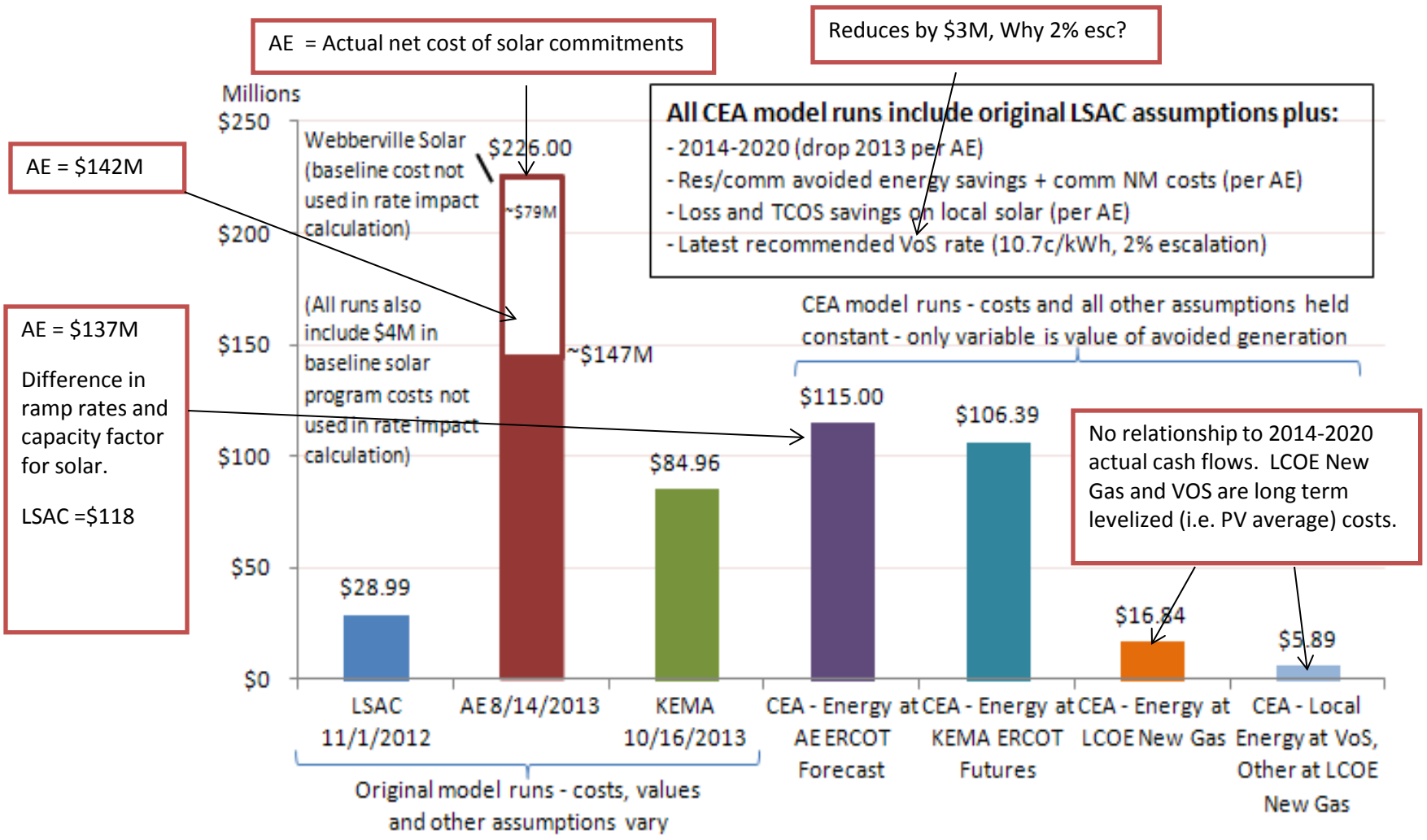
# Estimated Cumulative Net Impact (LSAC Review)



# Estimated Net Annual Impact to System Average Rates (LSAC Review)



# LSAC Review Conclusions with AE Comments (LSAC Review)



# Resource Planning Guiding Principals

- All Resources are evaluated in the context of ERCOT Nodal Market
  - Resource costs include
    - Capital, Fuel/PPA, Operations & Maintenance wherever applicable
    - Based on EIA, AE estimates & other sources
  - Revenues include
    - Energy & Ancillary services applies to all if they can provide
    - Reserve adder (Operating Reserve Demand Curve) applies to all, except renewables
- Consider entire AE portfolio net cost
  - 10-year horizon: 2015-2024 (Extended to consider end effects)
  - ERCOT market LMP forecast fundamentals
  - Load cost + resource cost – resource revenue
  - Across sensitivities per key uncertainties
    - Load (ERCOT & AE)
    - Gas price
    - Carbon
    - Market design
    - PTC/ITC

# Appendix

# ERCOT Nodal Market Mechanics

| # | Component | Basic Calculation | Cash flow |
|---|---|---|---|
| 1 | AE Load Obligation | Sum of (AE load zone LMP price x 15-minute kW demand) | Expense |
| 2 | Distributed PV | 15-minute kW production + Distribution losses | "Revenue" |
| 3 | Net AE Load Obligation | Sum of (AE load zone LMP price x 15-minute kW demand less [15-minute kW production + Distribution losses] ) | Net of PV Expense |
| | | | |
| 4 | Owned Unit A Revenue | Sum of (generation node LMP price x 15-minute kW production) | Revenue |
| 5 | Owned Unit A Cost | Production + Ownership Cost | Expense |
| 6 | PPA Revenue | Sum of (PPA delivery node LMP price x 15-minute kW production) | Revenue |
| 7 | PPA Cost | PPA Terms | Expense |
| 8 | **NET SYSTEM COST** | **Load Expense + Sum of Net Revenue** | **SUM(3,4-7)** |