



# 2016 Resource Plan Update – Scenario Results

## Electric Utility Commission Resource Planning Working Group

April 3, 2017

# Recap of Goals & Directives from 2014 Update

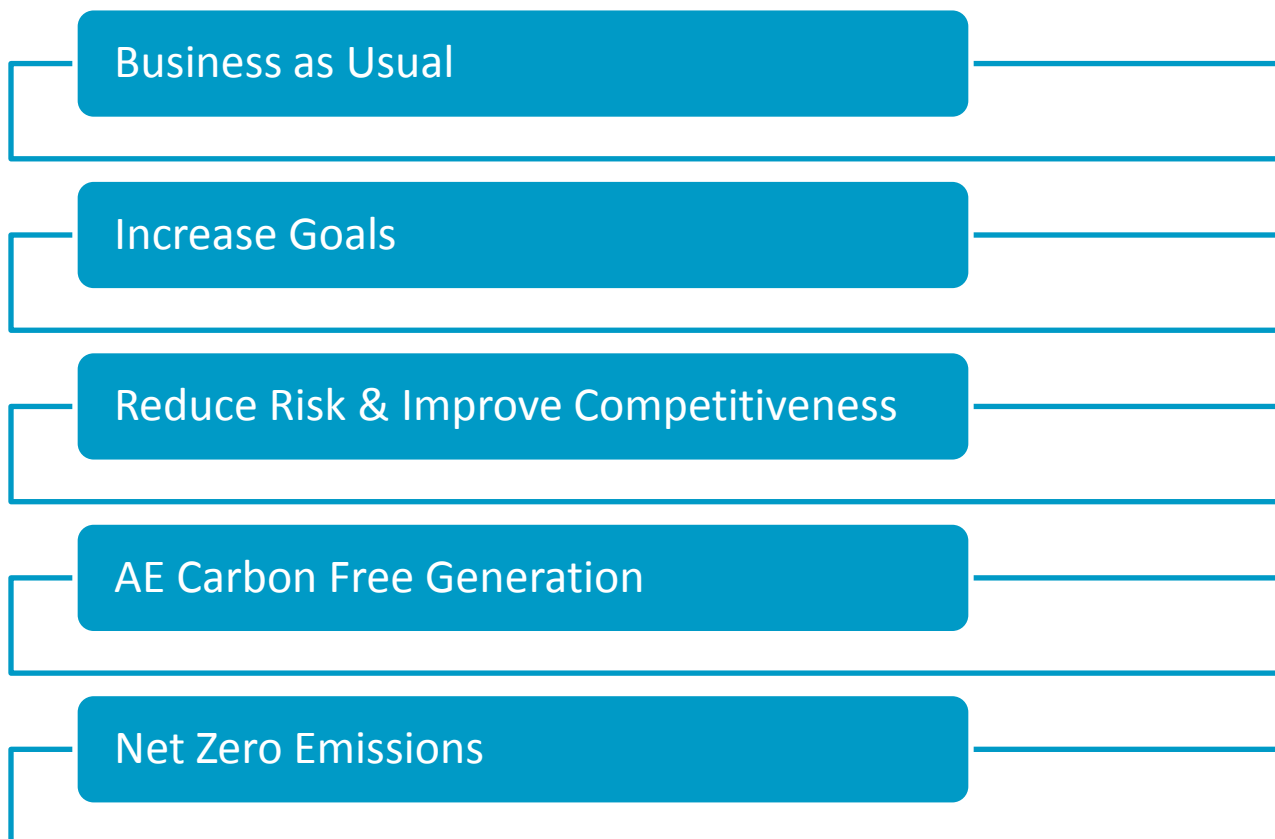


- 2014 Austin Energy Resource Plan (Progress to date)
  - 55% renewables by 2025 (30%)
  - 900 MW Demand Side Management by 2025 (576MW)
    - 700 MW energy efficiency by 2020
    - Demand Response
      - 100 MW by 2020 and additional 100 MW by 2025 (54MW)
  - 950 MW solar by 2025
    - 110 MW Local Solar by 2020 and additional 90 MW by 2025 if affordable (74 MW)
    - 750 MW Utility Scale Solar by 2025
      - 275.5 MWs Operational with E. Pecos (Bootleg) of 118 MW Commercial on 4/5/2017
      - 320 MW under contract
  - CO2 emissions
    - 20% reduction from 2005 levels by 2020 (Meeting)
    - Retirement of Fayette Coal Plant beginning in 2023 (in progress)
  - Affordability
    - 2% limit per year (met)
    - Rates should be in the lower 50th percentile statewide (slightly above trending lower)
  - 10 MW (lithium ion batteries) local storage by 2025 + 20 MW of thermal storage (17MW Thermal/3 MWe in progress)
  - Retire Decker steam units by 2019 and replace with 500 MW efficient combined-cycle (pending) – subject to a third party study (complete)

# Strategies & Scenarios



Five broad Strategies with different themes

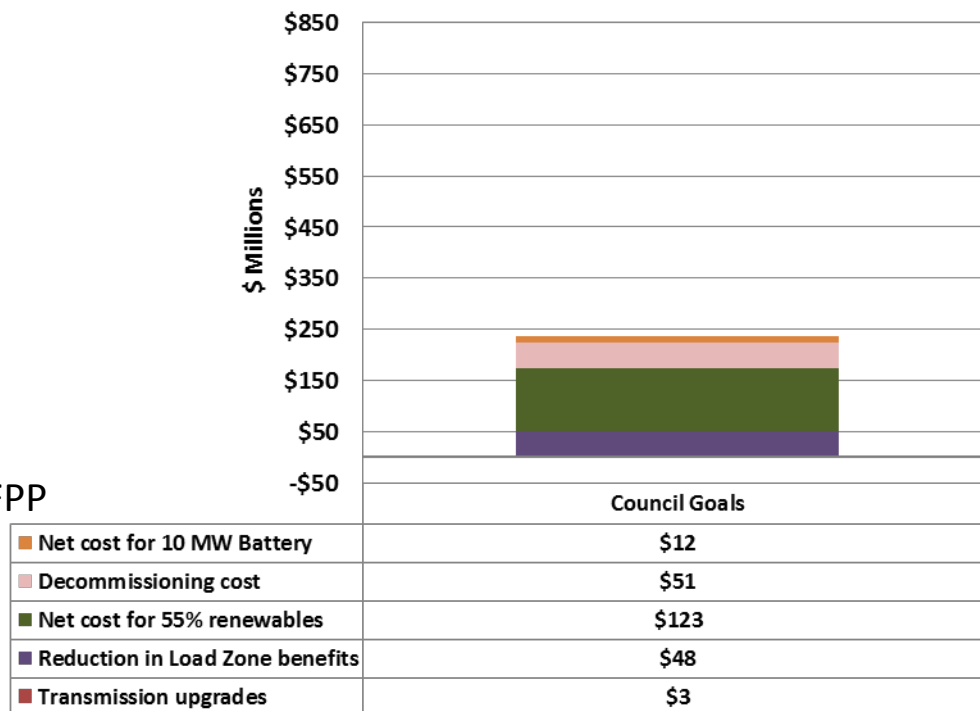


# Cost of Achieving Council Goals from Current Generation Mix



- Council goals include
  - Ramp down & exit FPP in 2023
  - Retire Decker in 2021
  - Add renewables to meet goals which includes 200 MW local solar
  - Upgrade Austin Energy transmission system to accommodate decker retirement
- The cost of achieving council goals is the delta above the current generation mix (do nothing) scenario and does not factor the FPP debt/Operations & Maintenance (O & M) cost

20 Year Net Present Value (NPV) Delta\*

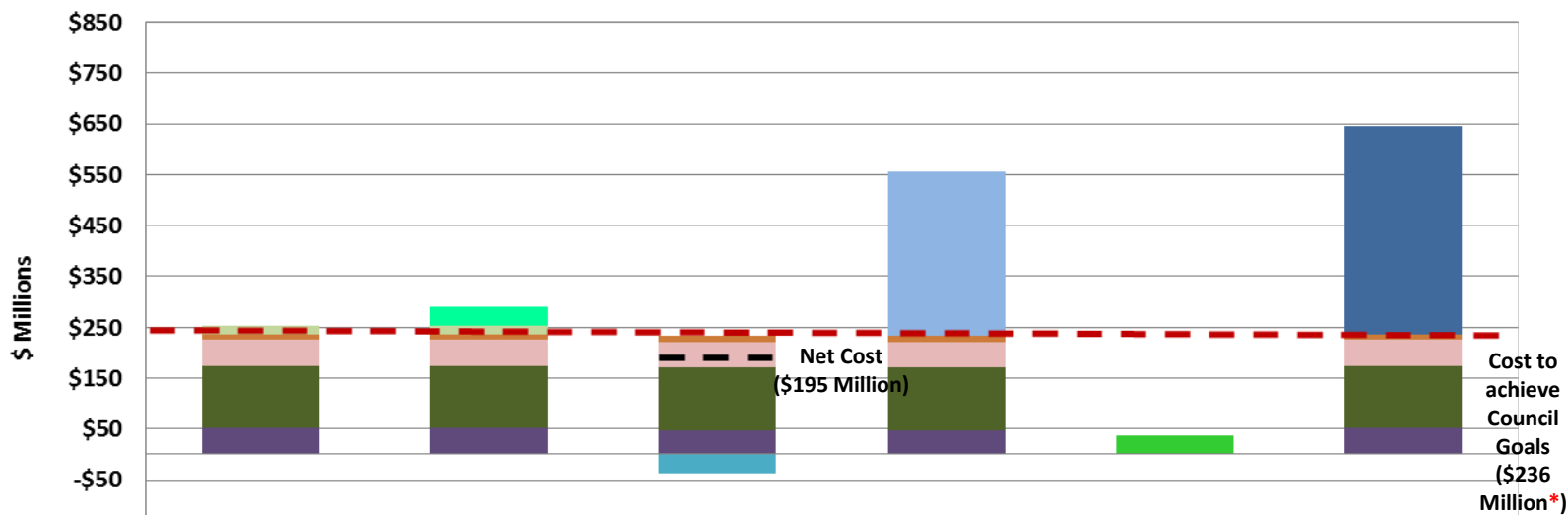


**\* This does not include the cost impact of retiring AE assets due to confidentiality reasons**



# Other results

20 Year Net Present Value (NPV) Delta\*



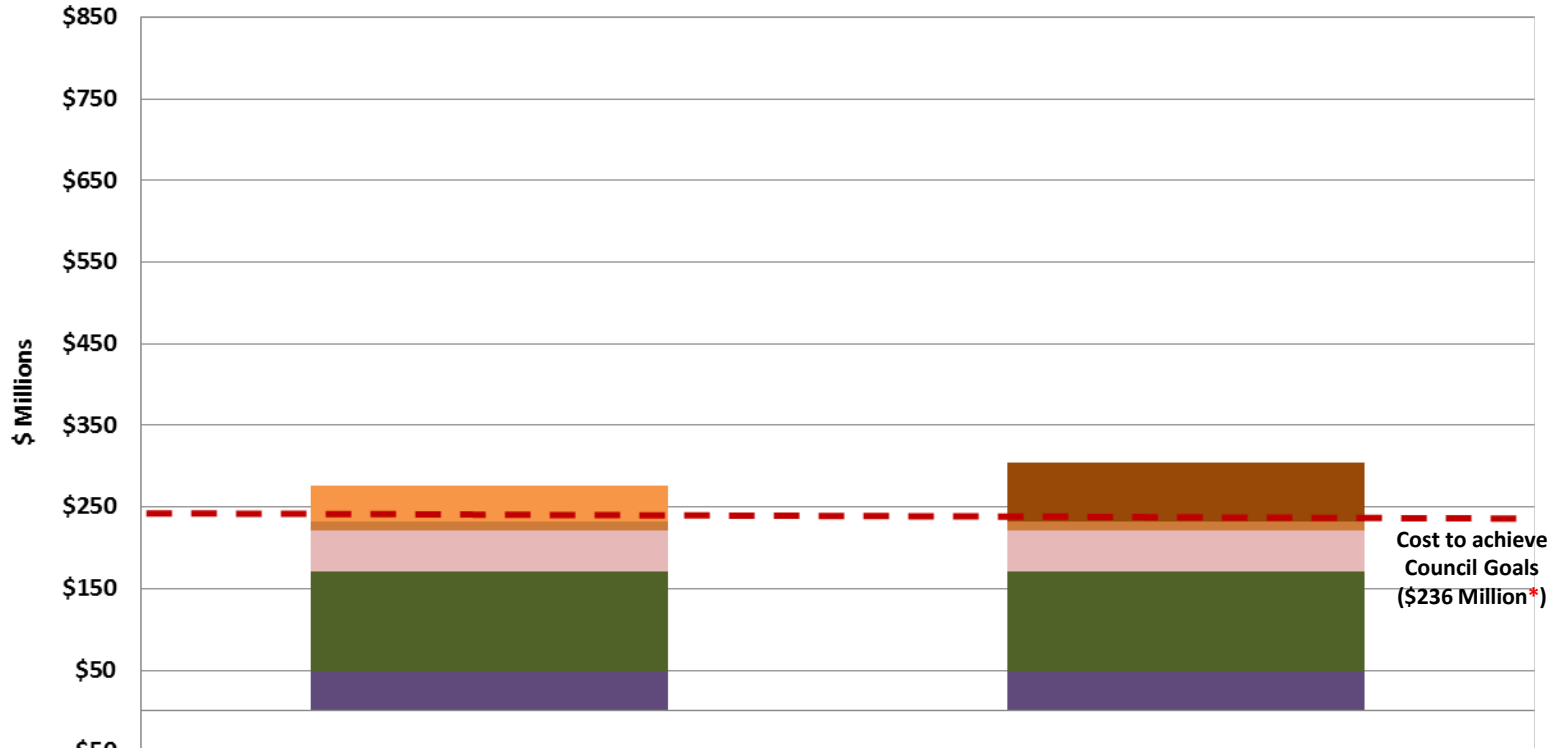
	65% Renewables	75% Renewables	Add GTs	Add CC	Meet renewable goals through RECs	300 MW CAES
Net cost for CAES						\$408
RECs Cost					\$37	
Net cost for 75% renewables		\$37				
Net cost for 65% renewables	\$17	\$17				
Net cost for CC				\$323		
Net cost for GTs			-\$38			
Net cost for 10 MW Battery	\$12	\$12	\$12	\$12		\$12
Decommissioning cost	\$51	\$51	\$51	\$51		\$51
Net cost for 55% renewables	\$123	\$123	\$123	\$123		\$123
Reduction in Load Zone benefits	\$48	\$48	\$48	\$48		\$48
Transmission upgrades	\$3	\$3				\$3

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# Cost Of Adding Battery at Decker from Current Generation Mix



20 Year Net Present Value (NPV) Delta\*



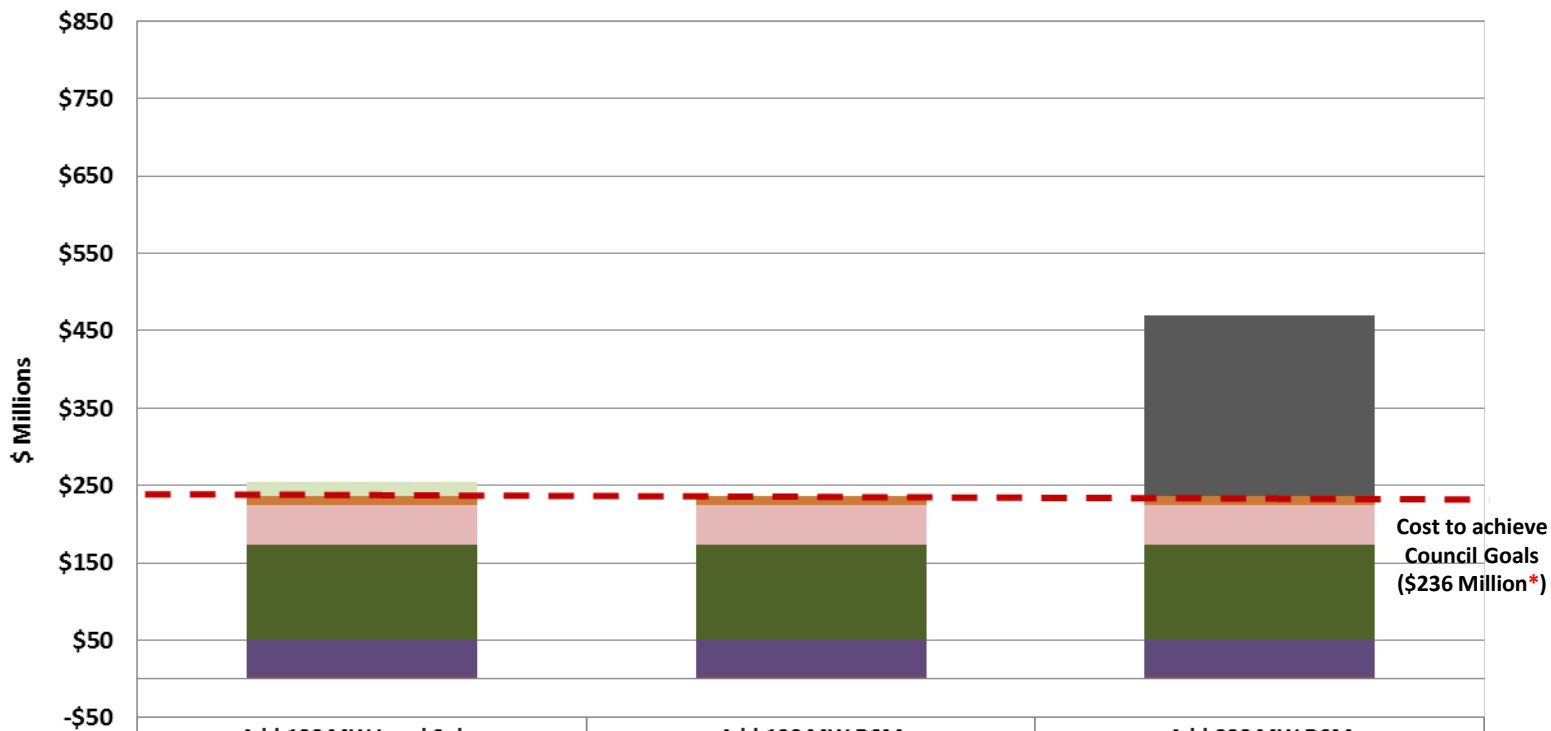
	Add 137 MW Battery	Add 300 MW Battery
Net cost for 300 MW Battery		\$72
Net cost for 137 MW Battery	\$43	
Net cost for 10 MW Battery	\$12	\$12
Decommissioning cost	\$51	\$51
Net cost for 55% renewables	\$123	\$123
Reduction in Load Zone benefits	\$48	\$48

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# Cost of Increasing DSM & Local Solar from Current Generating Mix



20 Year Net Present Value (NPV) Delta\*



	Add 100 MW Local Solar	Add 100 MW DSM	Add 300 MW DSM
■ Net cost for additional 300 MW DSM			\$233
■ Net cost of additional Local Solar	\$18		
■ Net cost for 10 MW Battery	\$12	\$12	\$12
■ Decommissioning cost	\$51	\$51	\$51
■ Net cost for 55% renewables	\$123	\$123	\$123
■ Reduction in Load Zone benefits	\$48	\$48	\$48
■ Transmission upgrades	\$3	\$3	\$3

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# 20 Year Net Present Value(NPV) vs. Cost at Risk (Without CO2)



20- year Net Present Value vs. Cost @ Risk (Levelized 2017\$)

Without CO2

