



# **Denton Renewable Resource Plan Update and Acquisition of Dispatchable Resource**

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**Denton Municipal Electric**  
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# Agenda

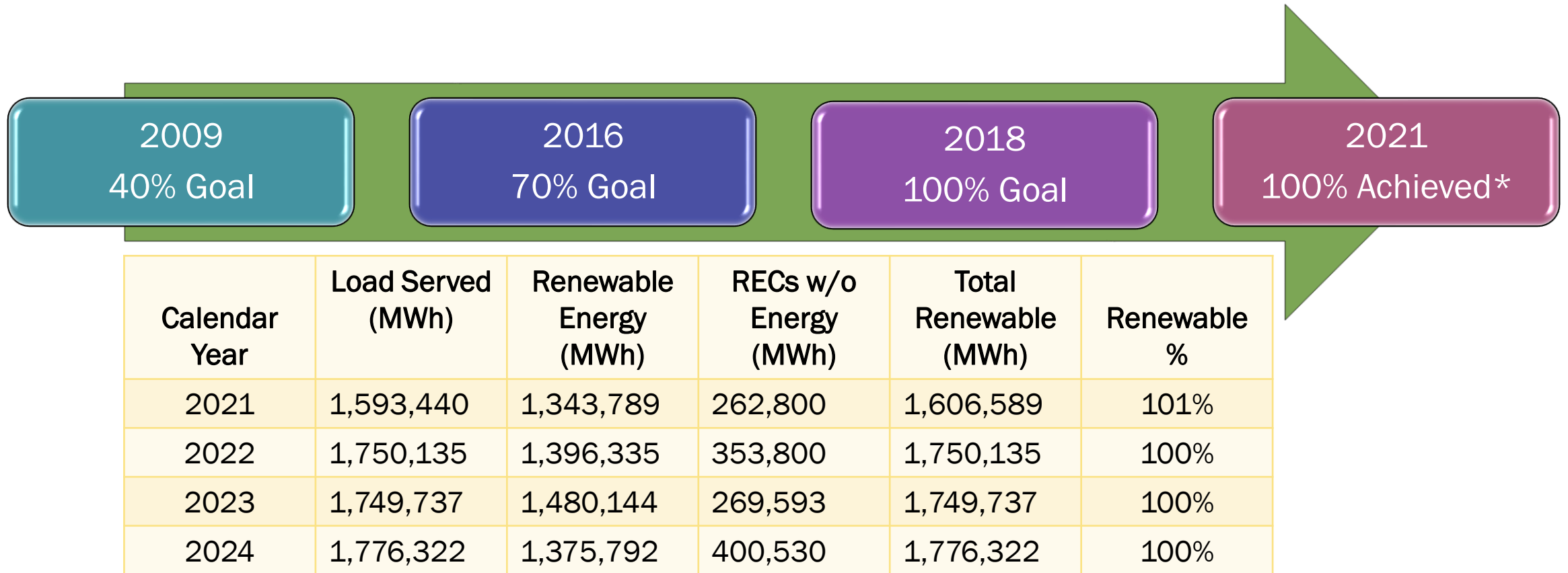
- Part 1 – Renewable Energy Policy
- Part 2 – Integrated Resource Plan
- Part 3 – Acquisition of Dispatchable Generation
- Questions

# Denton Renewable Resource Plan

- Adopted in 2018 (Resolution No. 18-085)
  - Goal was to achieve 100% renewable energy as early as either 2020 or 2024.
  - Through acquisition of diversified set of power purchase agreements for renewable energy resources.
  - Five objectives: Pricing factors including least-cost supplies; uncertainty (risk) reduction; sustainability; competitiveness; and the efficient management of a renewable resource power supply portfolio.
  - Recognized the Denton Energy Center as a cost hedge during certain super high-priced hours.
  - Acknowledged the greatest challenge is balancing the supply portfolio around intermittent renewables.
  - Identified the need to create a portfolio hedging plan and strategies.

Contracted Resources (Capacity)				
Name	Type	MWs	Term	Expires
Santa Rita	Wind	150	20 yrs.	Apr. 2038
Bluebell 1	Solar	30	20 yrs.	Nov. 2038
Bluebell 2	Solar	100	15 yrs.	Jun. 2035
Longdraw	Solar	75	15 yrs.	Jun. 2035
Yellow Viking	Solar	100	15 yrs.	Dec. 2041
Total - All		455		

# Renewable Goal Timeline



# Renewable Energy Policy

- Creation of a City Renewable Energy Policy
  - Policy Statement – This policy would only address the environmental (“offset”) goal of matching the annual load served with renewable energy, and not the resource mix needed to manage DME’s power portfolio and reliability needs.
  - Allowable Resources – Only those identified in the Texas Renewable Portfolio Standard (RPS).
  - Treatment of Renewable Energy Credits (RECs) & Compliance Premiums (CPs) (**addresses Internal Audit finding**)
    - Retire RECs and CPs counted toward the 100% goal.
    - DME to sell any excess RECs and CPs, when available, since they are not “rolled over” to the following year.
    - When needed to meet the 100% goal, DME to purchase RECs and CPs but only those generated in the same year they are counted.
  - Treatment of Large Loads > 5 MWs
    - DME will evaluate each load to determine if long or short-term energy contracts are viable or if only purchasing RECs and CPs is more appropriate. For new and emerging loads, the strategy could be split until such time as the specific load develops and proves to be more certain.
  - Goal Calculation (**addresses Internal Audit finding**)
  - Annual Goal Progression Reporting (**addresses Internal Audit finding**)
  - Glossary

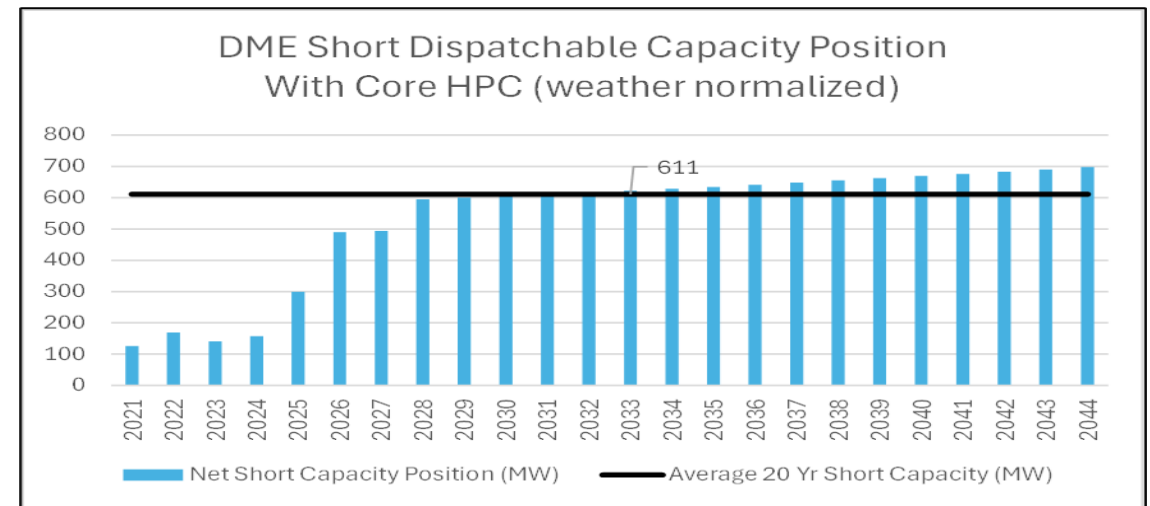
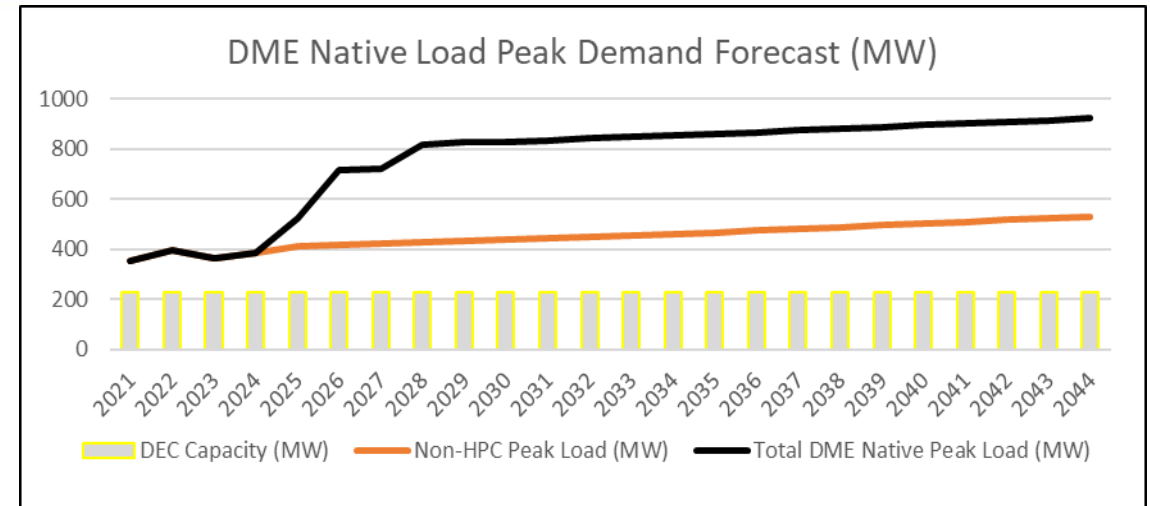
# What is an IRP?

- A plan created by an electric utility that outlines its strategy for meeting future electricity demand by considering both supply-side options (like building new generation resources) and demand-side options (like energy efficiency programs), aiming to achieve a cost-effective and reliable electricity supply while taking environmental factors into account; essentially, it's a roadmap for how a utility plans to generate electricity over a long period, typically 15-20 years, by balancing different resource options to best serve its customers.
- Key Points:
  - Comprehensive approach.
  - Future-oriented.
  - Cost-effectiveness.
  - Regulatory compliance.
  - Stakeholder involvement.



# DME Load Forecast

- Today, DME has a dispatchable power deficit of 183 MWs (DEC @ 225 MW less 408 MW Peak Load).
- By 2033, DME forecasts the deficit will grow to 386 MWs. (DEC @ 225 MW less 611 MW Peak Load).
- By 2044, DME forecasts the deficit will grow to 675 MWs. (DEC @ 225 MW less 900 MW Peak Load).
- DME's current forecast does not include any other large load developments although there continues to be interest. Main barrier for at least 2-3 years is infrastructure improvements.

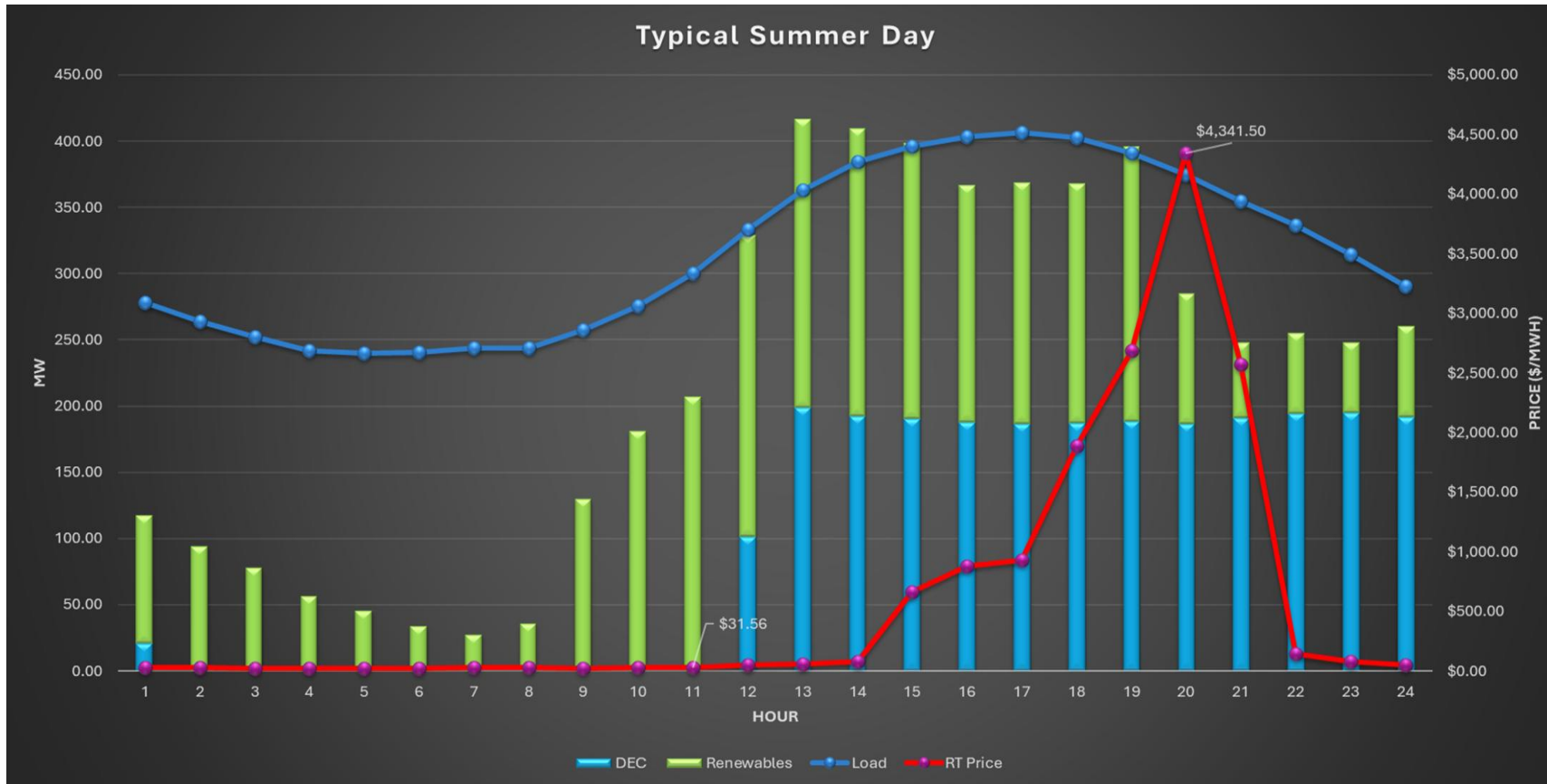


# Integrated Resource Plan

- Creation of a long-term Integrated Resource Plan, preferably 20 years:
  - Evaluate and integrate various types of resources while maintaining City's renewable energy goal.
  - Prioritize renewable resources such as nuclear, hydrogen, geothermal and battery storage as DME's load justifies these types of resources and where possible, leveraging federal and state funding opportunities.
  - Consider short-term needs to reduce rate risk while seeking opportunities that may reduce environmental impacts through innovative technologies or business opportunities to replace older, less efficient resources.
  - Incorporate and develop local demand-side management programs, and community solar installations greater than 1 MW to effectuate reductions in load.
  - Developed in concert with City's Climate Action Plan goals.
  - Utilize an external firm specialized in the development of IRPs with a focus on community engagement.
  - Staff would anticipate this would take 18-24 months to create.



# How DME Works



- August 25, 2023.
- Wind/Solar PPAs priced \$20-\$40 per MWH.
- DEC strike price about \$35 per MWH.
- High prices hour 15-22.
- Demand exceeded forecast due to high temp late into the evening.
- Cost exceeded \$1 million for this period.
- In 2023, this was the trend from the last week in July thru the first week in September, and cost DME \$31 million in unanticipated costs.

# Generation Need

## ➤ LOAD FORECAST:

- ☐ Today – 183 MW short (408 MW Peak Load vs 225 MW from DEC)
- ☐ 2033 – 386 MW short (611 MW Peak Load vs 225 MW from DEC)
- ☐ 2044 – 675 MW short (900 MW Peak Load vs 225 MW from DEC)
- ☐ Native (non-large load) growth projected to grow 100 MW by 2036. Generation shortage = 283 MW.
- ☐ Forecasted load does not assume any other large loads.

## ➤ SCARCITY PERIODS (DUCK CURVE) & PRICE RISK:

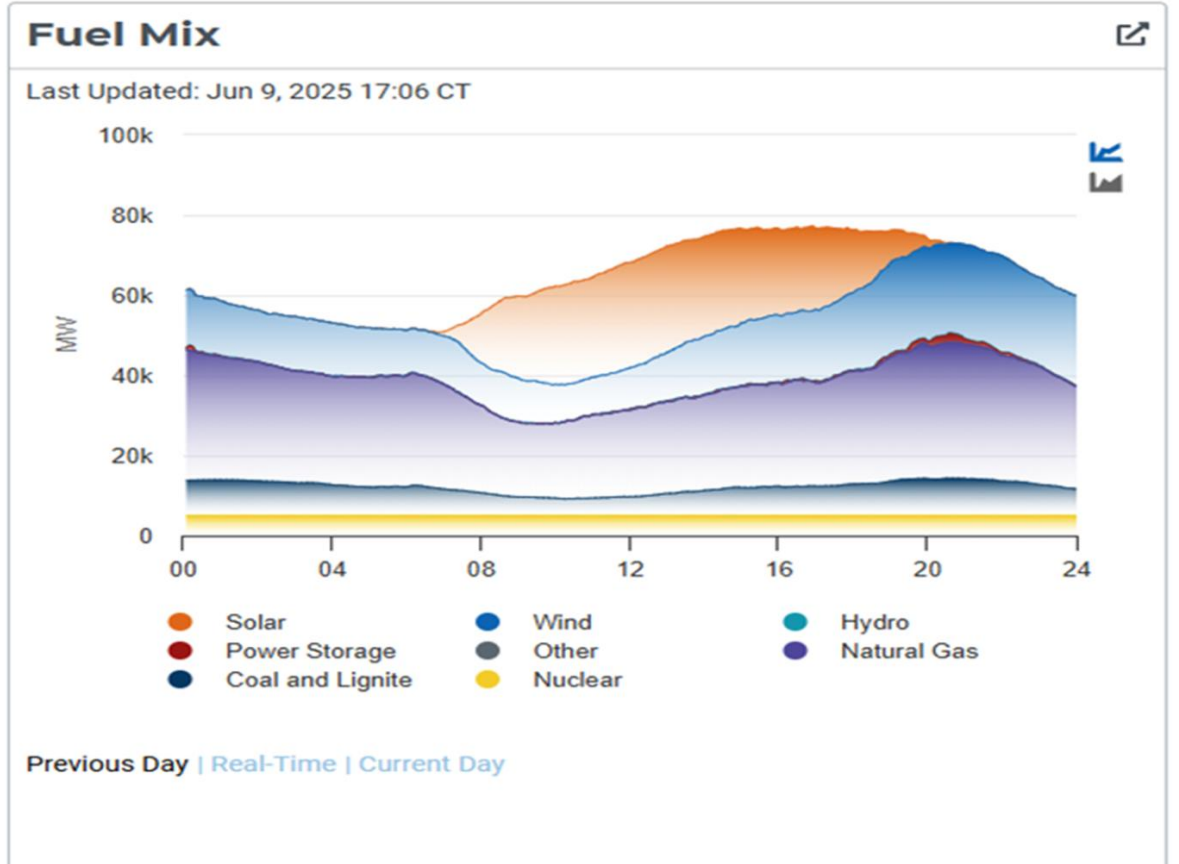
- ☐ Summer – 6 pm to 10 pm
- ☐ Winter – 7 am to 9 am and 6 pm to 10 pm
- ☐ Power prices during these periods can go to \$5,000 per MWH (\$9,000 per MWH during Winter Storm Uri).
- ☐ Wind and Solar generation not suited to meet this need and Battery Storage may be marginally viable although economics and technology may improve its viability.
- ☐ Winter Storm Uri – Financed \$140 million over 30 years (payoff in 2051).
- ☐ Summer of 2023 – Financed \$31 million over 5 years (payoff in 2029).

## ➤ PRIMARY NEED AND CONSIDERATIONS:

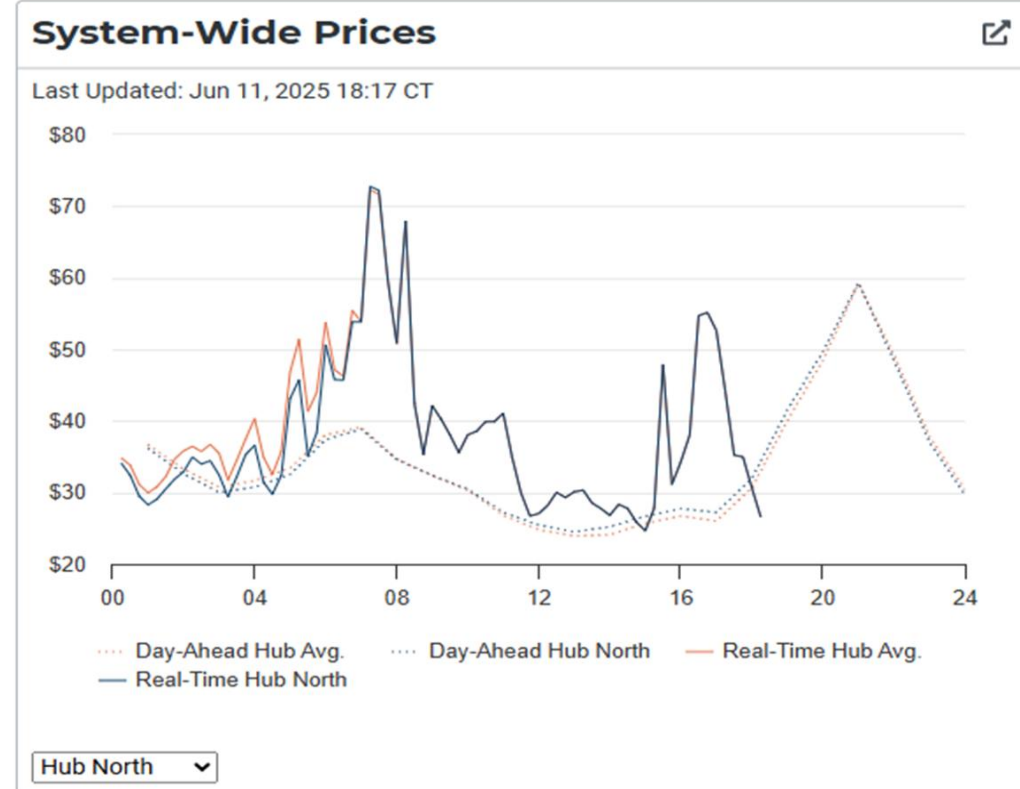
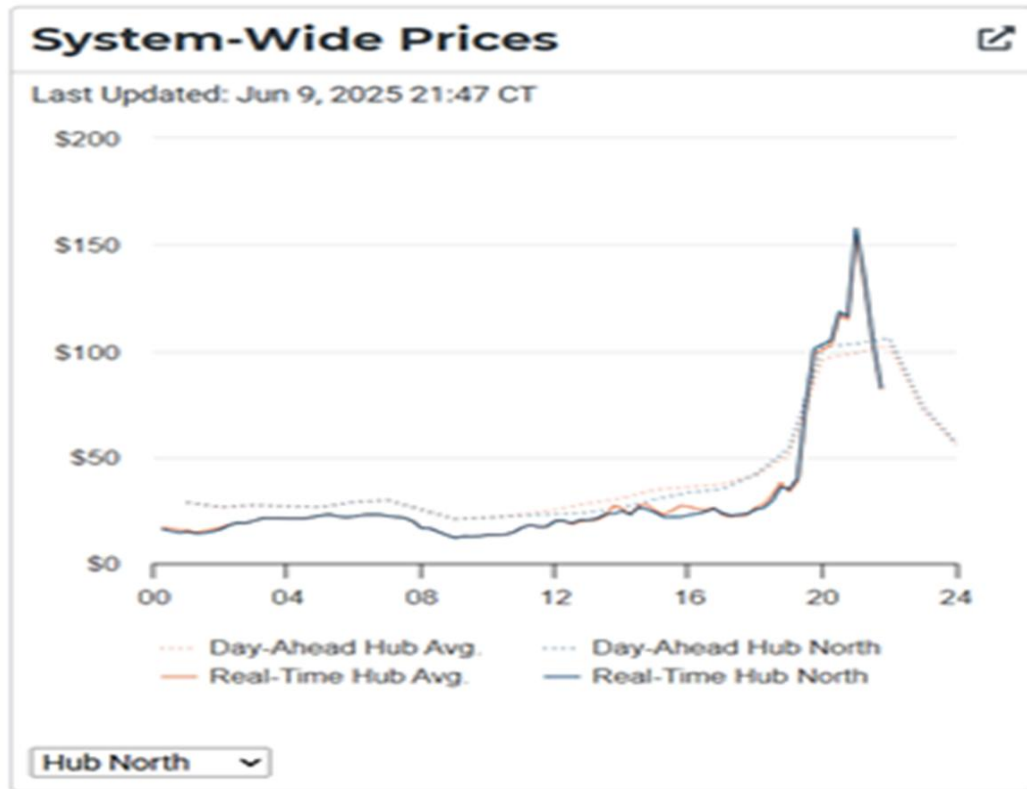
- ☐ Dispatchable Quick Start Generation – Produces power when we need it to protect against energy price increases.
- ☐ Only viable acquisition possibilities are existing natural gas facilities or proposed natural gas facilities.
- ☐ Future planning for other fuel types could be major design/re-design consideration.
- ☐ Reduces energy price risk exposure since it would be available sooner than a green field development.
- ☐ **Not in the city of Denton.**
- ☐ **Acquisition of an existing facility is a net zero impact to the environment and may represent a reduction if re-designed.**
- ☐ Public-Public and Public-Private Partnership(s) may represent opportunities for economies of scale and cost sharing.
- ☐ As a market participant, DME is also responsible for the reliability of the ERCOT grid in ensuring there is sufficient power to meet our customer's needs. Without these investments, shortages will continue, and prices will continue to escalate.

# Power Trends

June 8, 2025	7:00 a.m.	Noon	8:00 p.m.
Solar	1,092 MW (2.1%)	26,274 MW (38.5%)	2,249 MW (3%)
Wind	11,916 MW (23.4%)	10,216 MW (15%)	23,123 MW (31.2%)
Hydro	138 MW (0.3%)	140 MW (0.2%)	207 MW (0.3%)
Power Storage	14 MW (0.0%)	338 MW (0.5%)	940 MW (1.3%)
Natural Gas	26,150 MW (51.3%)	21,499 MW (31.5%)	33,305 MW (44.9%)
Coal/Lignite	6,608 MW (13%)	4,688 MW (6.9%)	9,221 MW (12.5%)
Nuclear	5,021 MW (9.9%)	5,018 MW (7.4%)	5,013 MW (6.8%)
<b>TOTAL GENERATION</b>	<b>50,939 MW</b>	<b>68,173 MW</b>	<b>74,058 MW</b>



# Pricing Trends



# Rate Comparison

Residential - Avg (1,000 kWh)	Per kWh	Monthly Bill	Incremental Cost per Year	Commercial Customers	Current	w/o Additional Generation	w/ Additional Generation	Deferred Costs per Year
DME – Current	14.2 cents	\$142.00	-	General Service Small (1,101 kWh)	\$182.33	\$195.65	\$183.32	(\$147.96)
DME - w/o DEC*	15.0 cents	\$150.00	\$96.00	General Service Medium (13,717 kWh & 48 kW)	\$1,780.94	\$1,946.92	\$1,793.29	(\$1,843.56)
DME – w/ Additional Generation	14.3 cents	\$143.00	\$12.00	General Service Large (342,406 kWh & 867 kVA)	\$38,419.39	\$42,562.51	\$38,727.56	(\$46,019.40)
DME - w/o Additional Generation	15.4 cents	\$154.00	\$144.00					
Power to Choose Avg. – 12- month contract	15.15 cents	\$151.50						
Power to Choose Avg. – 24- month contract	15.8 cents	\$158.00						
Provider of Last Resort (POLR) – TXU Energy	19.8 cents	\$198.00						

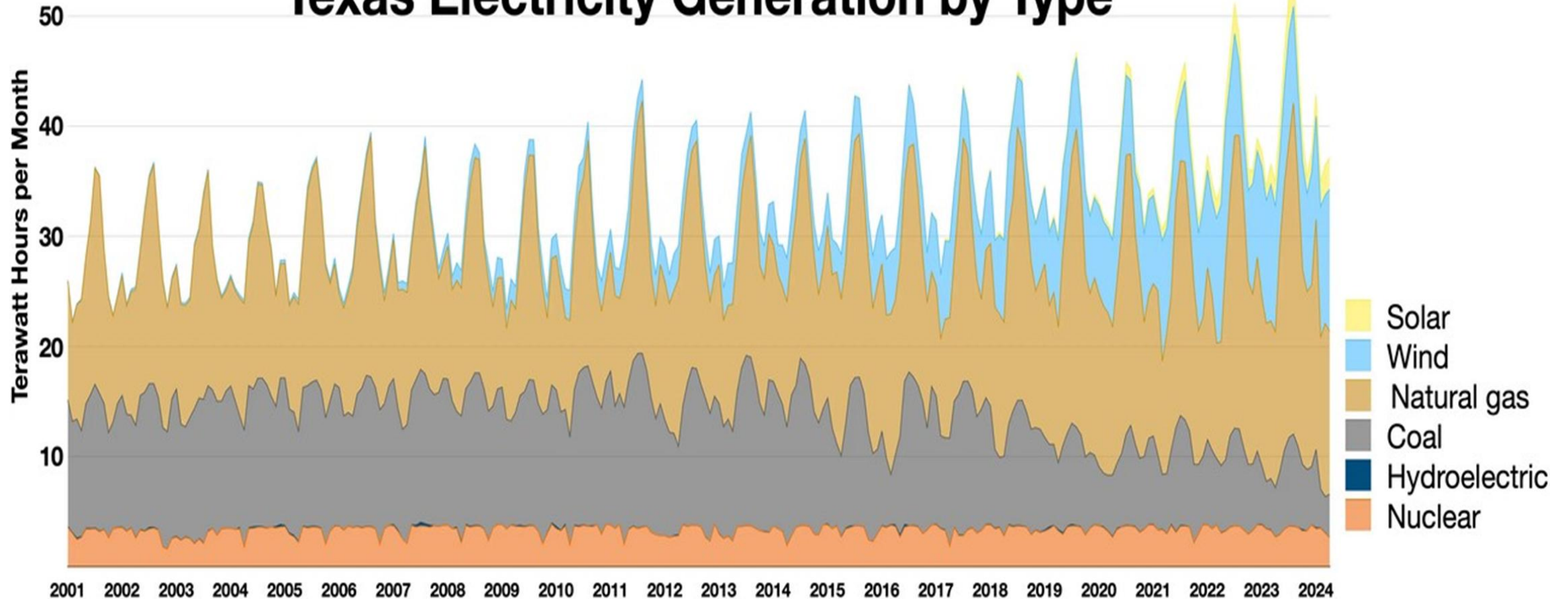
\*Assumes replacement of approximately \$40 million in foregone DEC gross margin through increase in the ECA rate paid by DME ratepayers. Does not account for an additional \$20 million in increased purchase power costs which would be offset with a reduced annual debt service of \$18 million.

# Acquisition Criteria

- Geographic Location:
  - ☐ Within ERCOT.
  - ☐ Within the North Load Zone, preferably.
  - ☐ Not in the city of Denton.
- Generation Type:
  - ☐ Nuclear – Unlikely. Only 2 in the State and likely cost prohibitive.
  - ☐ Coal & Lignite – Uncertain. Environmental remediation may make it cost prohibitive but environmental impact from conversion to natural gas, or some cleaner alternative, may be good tradeoffs for the added cost. Former sites may be attractive due to proximity to transmission infrastructure but would be best suited for a new build project.
  - ☐ Natural Gas – Approximately 100 existing generators in the State; approximately 9 that are defunct but already sited near readily available transmission infrastructure; approximately 26 proposed generators under consideration for the Texas Energy Fund loan program; and approximately 7 proposed generators that have withdrawn from the Texas Energy Fund loan program.
- Design:
  - ☐ Baseload
  - ☐ Quick Start
- Capacity (MW):
  - ☐ Minimum of 100 MW
  - ☐ Ability to Expand



# Texas Electricity Generation by Type



# Texas Dispatchable Generators

Nuclear (2) – 4,708 MW

Coal/Lignite (12) – 16,518 MW

Natural Gas (100) – 65,855 MW

# Texas Energy Fund Projects (May 2025)

Application Number	Sponsor Name	Capacity (MW)
APP-017	NRG Energy, Inc.	456
APP-021	Hunt Energy Network, LLC; John Hancock Life Ins. Co.; Manualife Infrastructure III AIV Holdings B, LP.	132
APP-031	Competitive Power Ventures (CPV Group LP), GE Vernova	1,350
APP-115	Rayburn County Electric Cooperative, Inc; Rayburn Energy Station LLC	570
APP-128	Calpine Corporation	460
APP-129	LS Power Equity Advisors, LLC	490
APP-194	Hull Street Energy through wholly owned subsidiary MPH Bastrop Peakers LLC	1,080
APP-201	Kerrville Public Utility Board Public Facility Corporation; Kerrville PUB	122
APP-219	Mercuria Investments US, Inc; Reliability Design and Development LLC	226
APP-245	Vistra Corp.	440

Application Number	Sponsor Name	Capacity (MW)
APP-016	NRG Energy, Inc.	721
APP-147	Rockland Power Partners IV LP	342
APP-018	NRG Greens Bayou 6	455
APP-256	Vistra Corp.	440
APP-159	Nightpeak Energy LLC	305
APP-161	Nightpeak Energy LLC	260
APP-221	Invenergy	890
APP-224	Invenergy	479
APP-209	EMPower USA LLC; Emerging America Financiera, SAPI de CV; Integrated Gas Services de Mexico, S de RL de CV	123
	<b>Total – All Projects</b>	<b>9,341</b>

# Questions?