Dispatchable Generation

Acquisition Exploration

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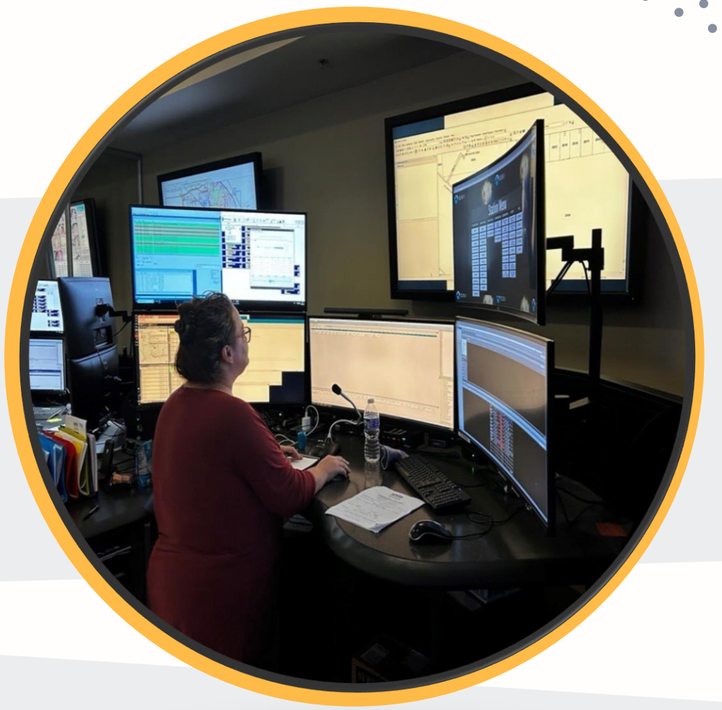
Work Session: PUB25-098

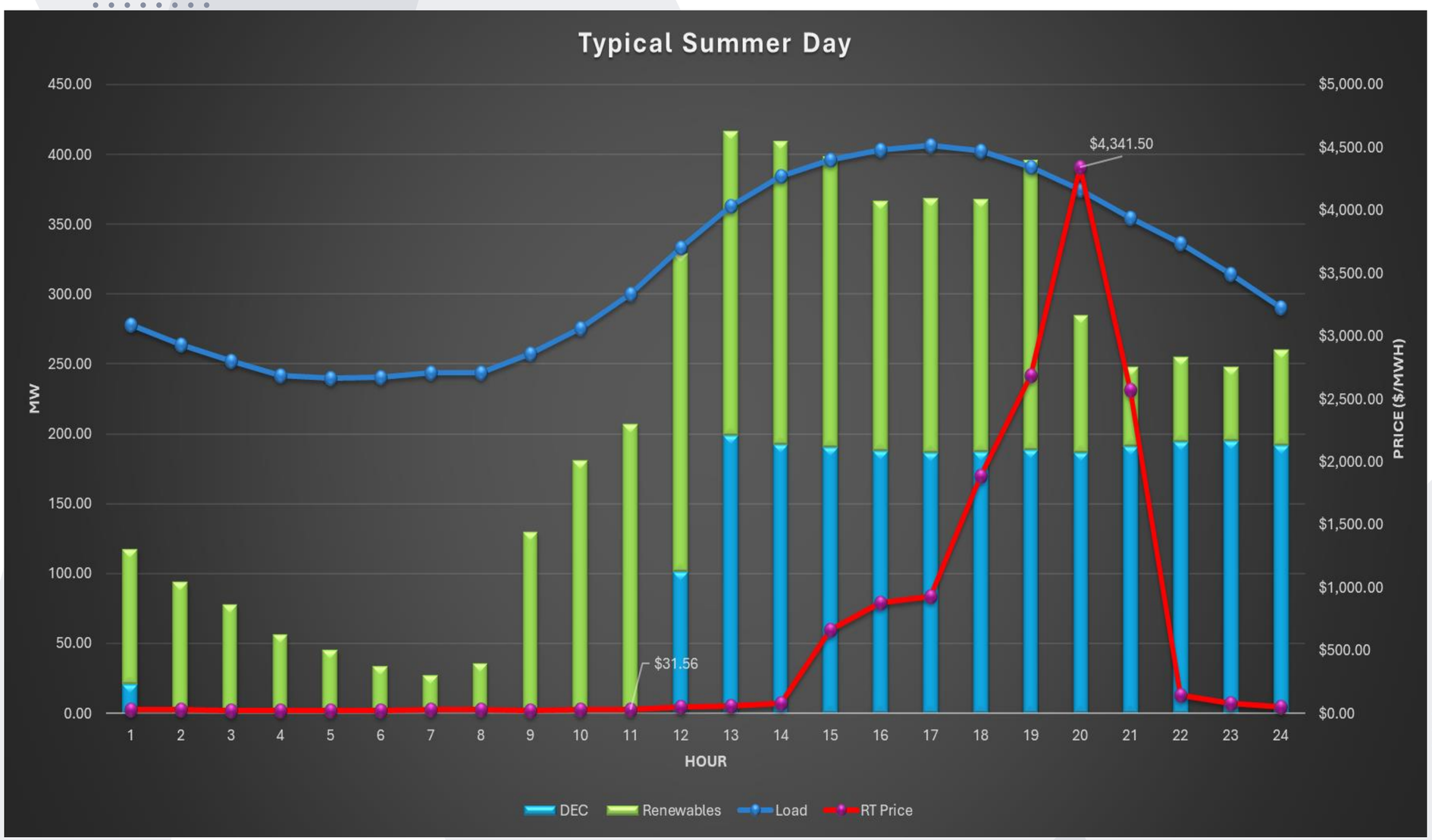
Objectives

1. How DME Works / Generation Need
2. Denton Energy Center Performance
3. Power/Price Trends & Rate Comparisons

4. Acquisition Criteria
5. Options & Direction
6. Questions



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.

DEC Performance

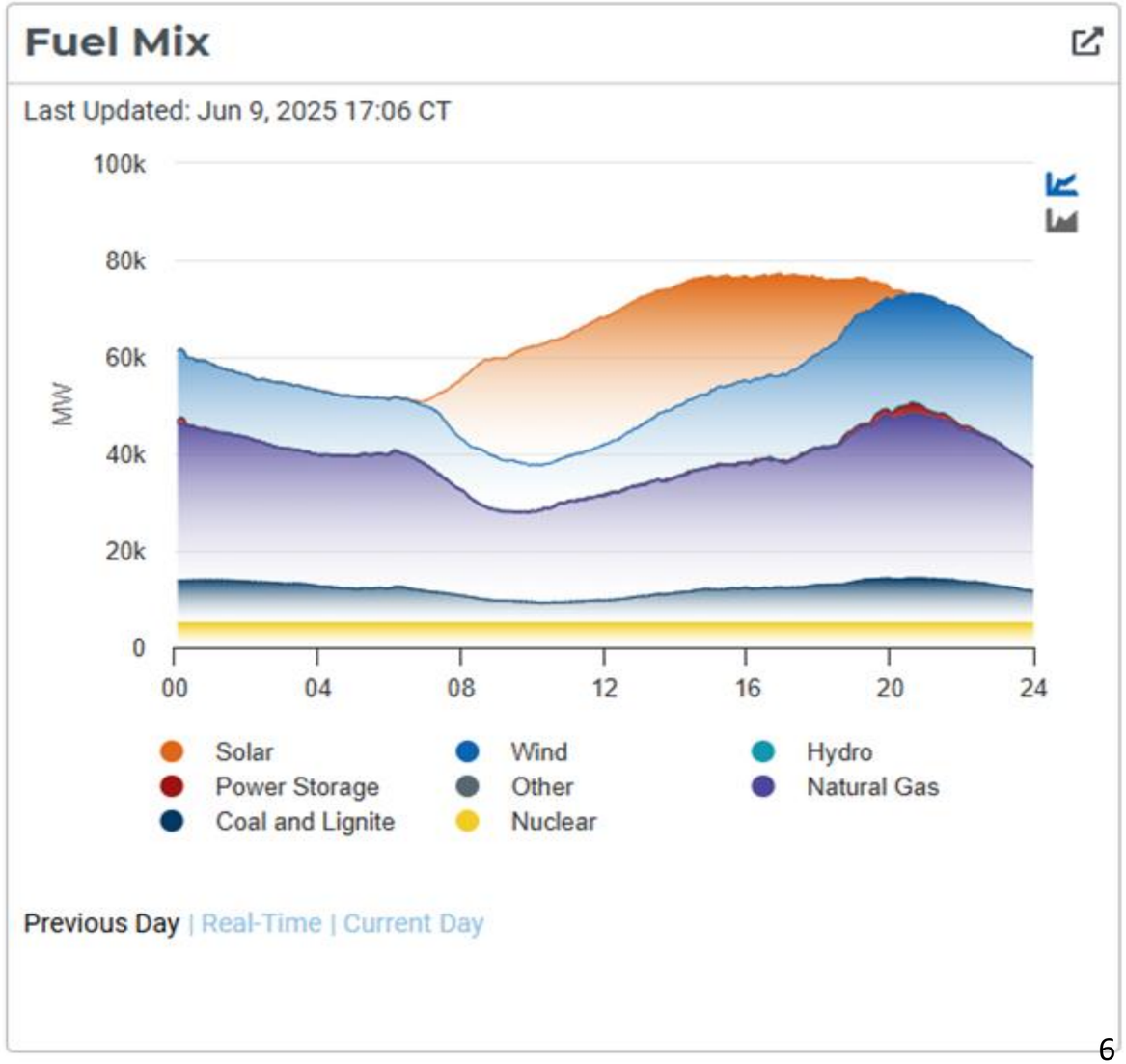
DENTON ENERGY CENTER
Multi-Year Financial History
As of September 30, 2024

	2017-18 ACTUALS*	2018-19 ACTUALS	2019-20 ACTUALS	2020-21 ACTUALS	2021-22 ACTUALS	2022-23 ACTUALS	2023-24 ACTUALS	All Years Total
MWh	102,980	246,333	153,892	244,222	418,392	357,598	223,799	1,747,216
$/MWh	$ 115.33	$ 152.16	$ 82.93	$ 568.69	$ 143.27	$ 188.42	$ 87.67	$ 199.15
DEC REVENUE	**$ 11,876,498**	**$ 37,482,023**	**$ 12,762,627**	**$ 138,885,965**	**$ 59,944,917**	**$ 67,380,280**	**$ 19,621,032**	**$ 347,953,342**
EXPENDITURE SUMMARY								
Energy Expense - Fuel	$ 2,169,444	$ 6,954,969	$ 3,599,350	$ 29,679,458	$ 26,276,468	$ 11,249,082	$ 5,398,434	$ 85,327,204
Personal Services	916,953	1,672,131	1,942,343	1,820,380	1,972,635	2,168,914	2,418,428	12,911,784
Materials & Supplies	361,274	160,109	318,048	271,470	1,013,858	1,455,149	1,253,197	4,833,104
Maintenance & Repair	28,173	109,388	211,631	375,647	907,313	2,117,461	1,792,467	5,542,081
Insurance	444,145	487,272	1,112,280	1,216,695	2,931,977	1,138,286	736,145	8,066,799
Operations	137,225	212,709	209,291	665,005	353,917	388,197	241,815	2,208,159
Debt Service - DEC (Rev Bds)	-	13,549,389	17,278,198	17,285,053	17,294,941	17,308,336	17,320,115	100,036,032
Debt Service - Uri (Rev Bds)	-	-	-	-	6,721,363	7,230,915	7,234,318	21,186,596
Debt Service - Summer '23 (Rev Bds)	-	-	-	-	-	-	4,301,135	4,301,135
Interfund Transfers	-	120,000	70,977	241,569	254,056	92,013	119,450	898,065
Transfer to Capital Projects	297,000	-	-	-	-	-	41,912	338,912
DEC EXPENDITURES	**$ 4,354,215**	**$ 23,265,966**	**$ 24,742,118**	**$ 51,555,277**	**$ 57,726,528**	**$ 43,148,353**	**$ 40,857,415**	**$ 245,649,871**
DEC NET INCOME	**$ 7,522,284**	**$ 14,216,056**	**$ (11,979,490)**	**$ 87,330,688**	**$ 2,218,389**	**$ 24,231,927**	**$ (21,236,383)**	**$ 102,303,471**
GROSS MARGIN**	**$ 9,707,483**	**$ 30,472,912**	**$ 9,161,592**	**$ 109,063,941**	**$ 33,019,152**	**$ 55,230,188**	**$ 13,244,169**	**$ 259,899,437**
PURCHASE POWER COSTS	**$ 74,416,466**	**$ 90,120,153**	**$ 60,164,760**	**$ 165,630,884**	**$ 92,758,475**	**$ 155,521,545**	**$ 82,396,133**	**$ 721,008,416**

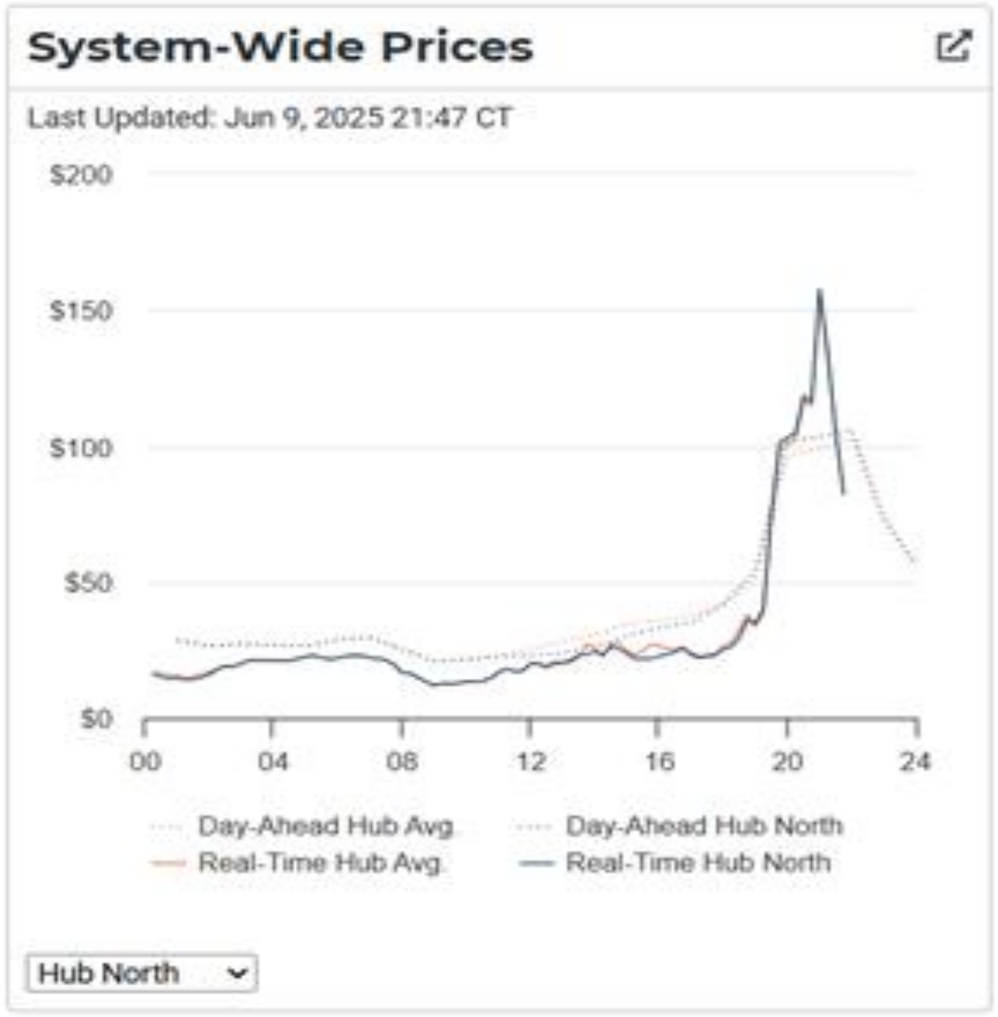
* Reflects 5 months of operation
** Revenue less Fuel & Other Variable Expenses

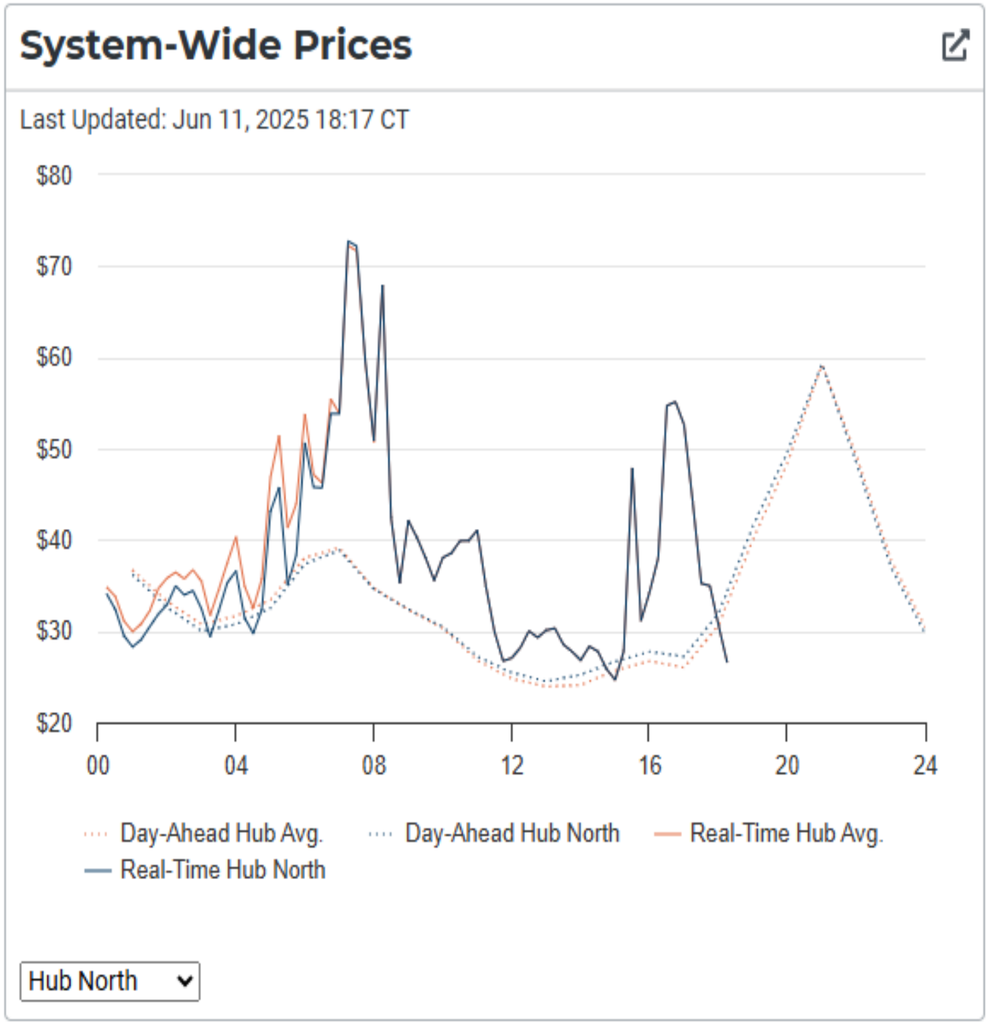
Power Trends

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%)
TOTAL GENERATION	**50,939 MW**	**68,173 MW**	**74,058 MW**



Pricing Trends





Rate Comparison

Residential - Avg (1,000 kWh)	Per kWh	Monthly Bill	Incremental Cost per Year
DME – Current	14.2 cents	$142.00	-
DME - w/o DEC*	15.0 cents	$150.00	$96.00
DME – w/ Additional Generation	14.3 cents	$143.00	$12.00
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	

Commercial Customers	Current	w/o Additional Generation	w/ Additional Generation	Deferred Costs per Year
General Service Small (1,101 kWh)	$182.33	$195.65	$183.32	($147.96)
General Service Medium (13,717 kWh & 48 kW)	$1,780.94	$1,946.92	$1,793.29	($1,843.56)
General Service Large (342,406 kWh & 867 kVA)	$38,419.39	$42,562.51	$38,727.56	($46,019.40)

*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.

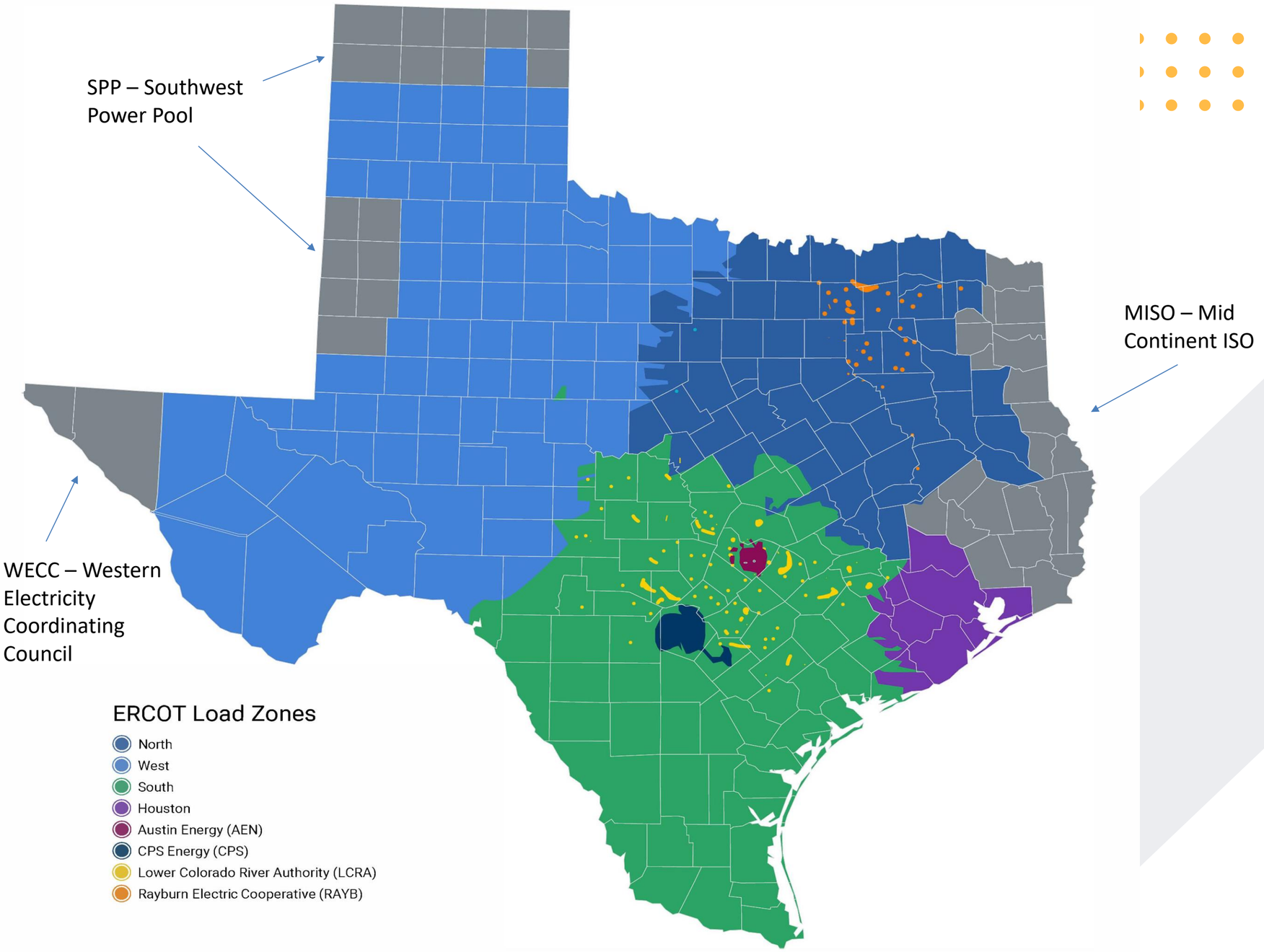
Acquisition Criteria

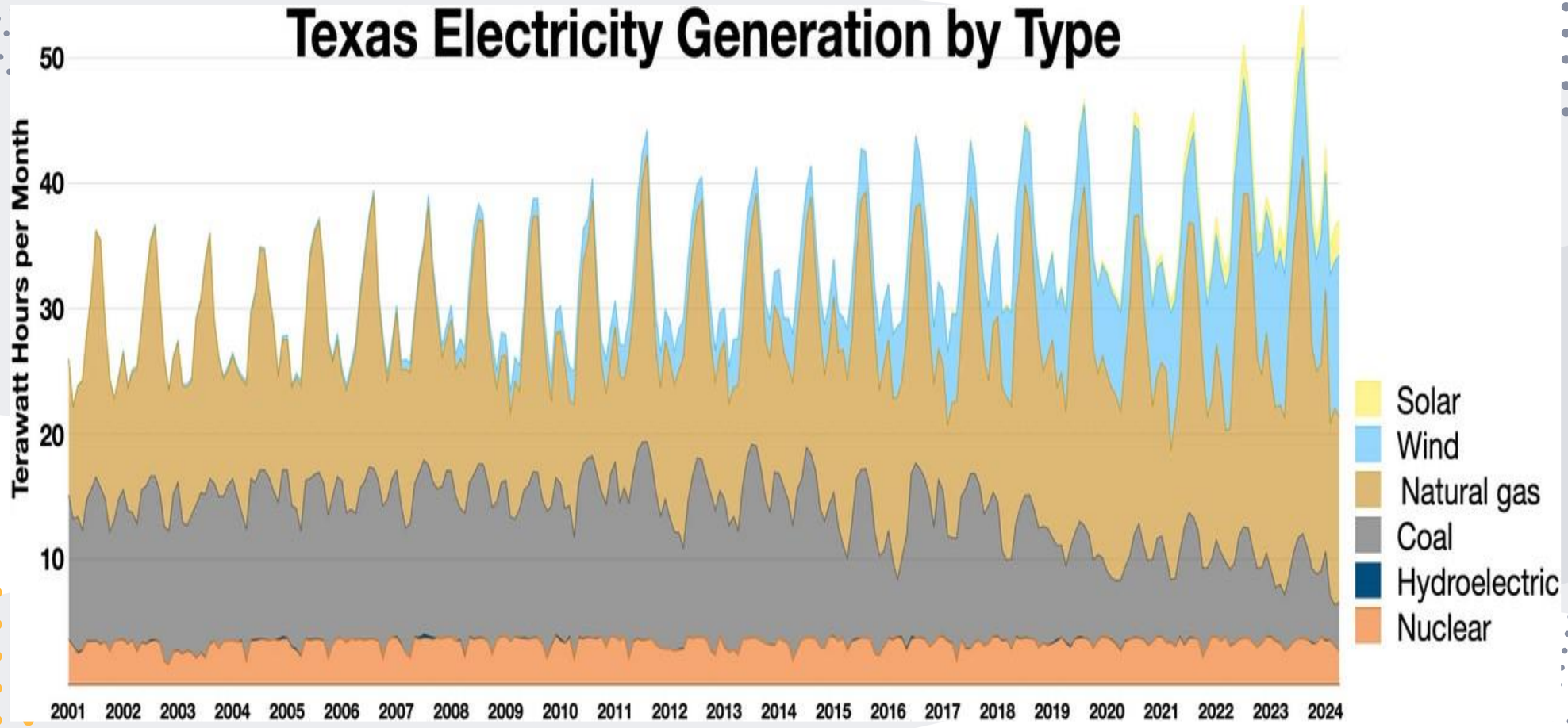
- Geographic Location:
  - Within ERCOT.
  - Within the North Load Zone, preferably.
  - Not in the city of Denton.

- 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


SPP – Southwest Power Pool
MISO – Mid Continent ISO
WECC – Western Electricity Coordinating Council
ERCOT Load Zones
North
West
South
Houston
Austin Energy (AEN)
CPS Energy (CPS)
Lower Colorado River Authority (LCRA)
Rayburn Electric Cooperative (RAYB)


Texas Electricity Generation by Type
Terawatt Hours per Month
50
40
30
20
10
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Solar
Wind
Natural gas
Coal
Hydroelectric
Nuclear

Texas Dispatchable Generators

- Nuclear (2) – 4,708 MW
- Coal/Lignite (12) – 16,518 MW
- Natural Gas (100) – 65,855 MW

Texas Energy Fund Projects

(Initial Submissions – June 2024)

Application Number	Sponsor Name	Capacity (MW)
APP-007*	Howard Power Generation, LLC	271
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-122*	Frontier Group of Companies (Lonestar Industrial Park LLC)	162
APP-128	Calpine Corporation	460
APP-129	LS Power Equity Advisors, LLC	490
APP-131*	EmberClear Management; Jupiter Island Capital	900

Application Number	Sponsor Name	Capacity (MW)
APP-143*	Constellation Energy Generation LLC	300
APP-162*	NextEra and Aegle Power	1,292
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-215*	WattBridge Energy IPP Holdings LLC	600
APP-219	Mercuria Investments US, Inc; Reliability Design and Development LLC	226
APP-223*	ENGIE Flexible Generation NA LLC	930
APP-245	Vistra Corp.	440
	Total – All Projects	**9,781**

* Denotes projects no longer under consideration.

Texas Energy Fund Projects

(Under Consideration – May 2025)

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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
	Total – All Projects	**9,341**

Options & Council Direction

- Option 1 –
  - Explore opportunities for future acquisition of approximately 300 MW of generation capacity.
- Option 2 –
  - Explore opportunities for future acquisition of approximately 600 MW of generation capacity.
- Option 3 –
  - Do nothing until completion of an Integrated Resource Plan.
    - 18-24 months

Note: On June 17, 2025, the City Council gave staff direction to explore the acquisition of 300-600 MWs of dispatchable generation capacity and afford the public an opportunity to weigh in on this direction.

Questions