



STAND-BY GENERATION RECOMMENDATION

February, 2021

Objective:

Select the Stand-by Generation Option that provides the most desirable balance of reliability, cost of service and environmental impact.

Setting the Context

Costs

(millions)

Total Drainage Improvements

\$25.4 1/

Pump Station Only

\$13.2 2/

Standby-up Generator Only (Range)

\$1.7-3.9 3/

1/ Not including High Meadows pump & drainage improvements

2/ Assuming diesel generator

3/ Including O&M savings and other considerations

Setting the Context

- Stand-by generator utilization is about 5 hours per year (0.06%) for monthly testing plus 2 hour annual testing needs.
- Selling power would increase the utilization to an average of 200 hrs/yr (2.3%) . Lid 7 can share in that benefit either thru reduced financial contribution to Enchanted Rock or perhaps direct ownership, however, noise and other considerations must be weighed.

Enchanted Rock History

- 2006 – Founded by persons w/Navy Nuclear and NASA background
- 2009 – City of Houston finds diesel generators unreliable during Hurricane Ike, contacts ER
- 2011-13 - ER installs 330 MW of diesel generation
- 2016-2020 – Integrated Reliability On Call (IROC) units
 - 170 MW of natural gas units (448 kW each)
 - 142 Sites
 - 99.86% reliability = unavailable for 1 of every 725 hours of operation

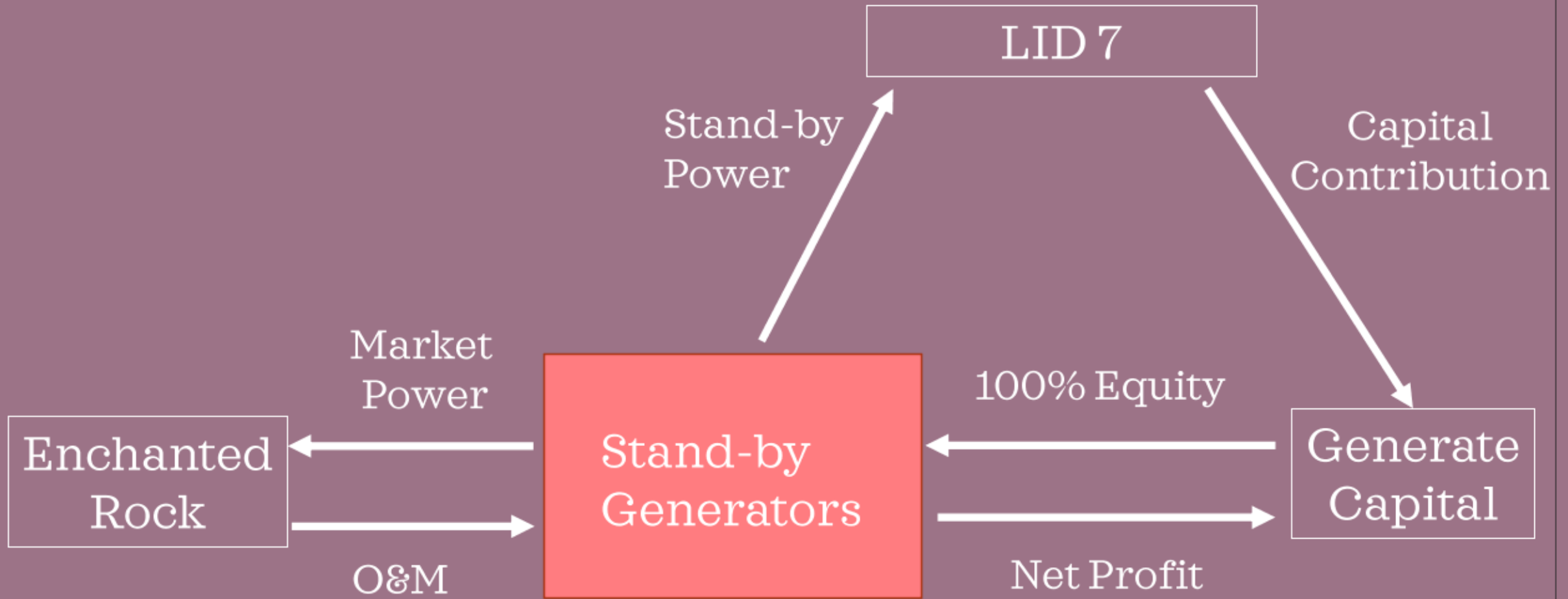
Enchanted Rock's Business Model

In essence, Enchanted Rock proposes that LID 7 contribute a site and an initial financial subsidy to operate a small power generation facility to provide peaking power to the grid.

In return, they will provide LID 7 back-up power at variable cost.

Fundamentally, LID 7 is to rely on their need to be reliable for off-site power sales as our security of their performance.

Business Model & Contract Relationships



Current Risks of ER Proposal*

- Limited ability to terminate if poor reliability / performance
- Financial insolvency from regulatory, market changes or mismanagement could lead to contract revision or worst case, removal of units
- Change in Law proviso reopens contract and potentially triggers termination put option.
- Minimal restrictions on assignability
- No limitations on run-time

*ER has stated willingness to consider changes

Benefits of ER Proposal

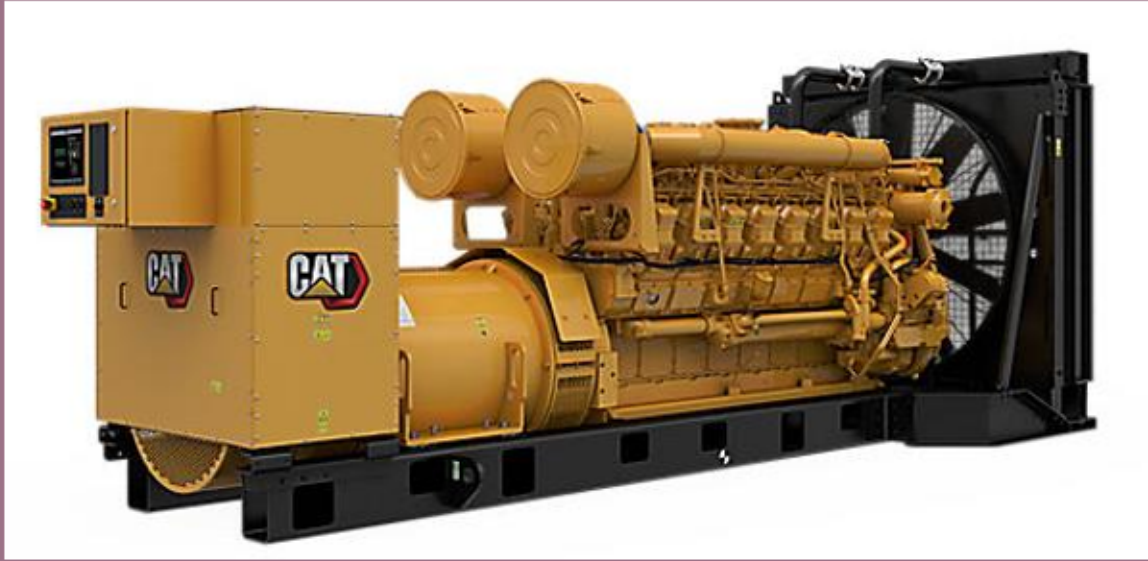
- Lower initial cost
- No O&M expense to LID 7
- Arguably higher reliability
- Unit will pay property taxes to LID 7
- Slightly quieter than alternatives

The Options:

Each 3.5 MW
in Total

- Two diesel fueled units
(Caterpillar or Cummins)
- Two natural gas fueled units
(Caterpillar Only)
- Eight natural gas fueled units
(Doosan)

Two - 16 Cylinder Diesel Generators



Length: 21.5 feet
Width: 7.5feet
Height: 7.8 feet
Weight: 29 tons for two

Fuel Usage: 70 gallons per hour

Two - 20 Cylinder Gas Generators

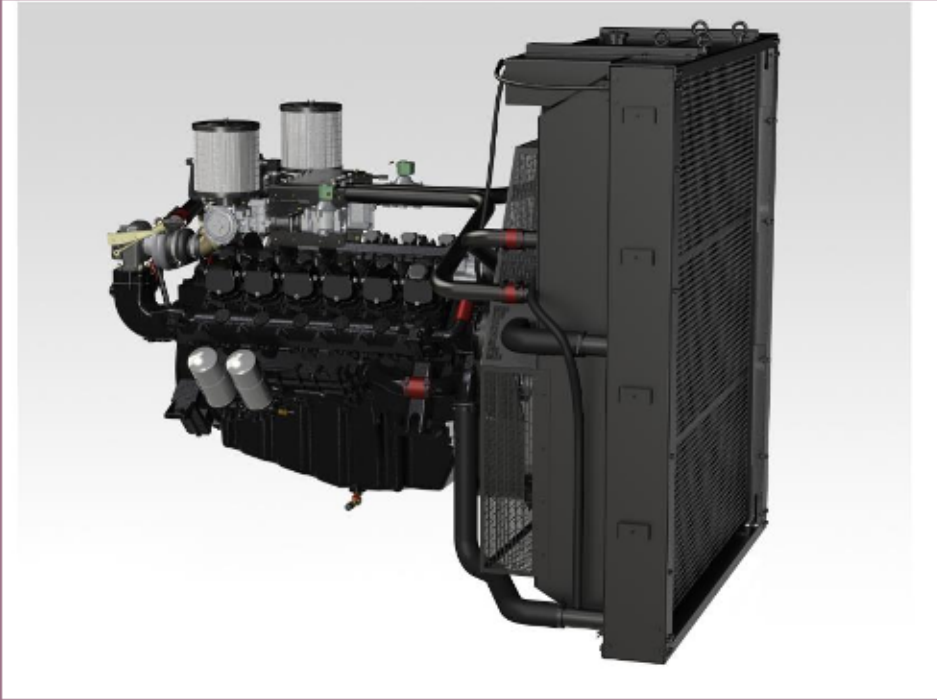


Length: 20.7 feet
Width: 6.6 feet
Height: 7.6 feet
Weight: 38 tons for 2



Fuel Usage: 9,500 btu/hr

Eight Enchanted Rock - 12 Cylinder Gas Generators



Length: 6.3 feet
Width: 4.1 feet
Height: 5.3 feet
Weight: 14 tons for 8



Fuel Usage: ~25% higher than Caterpillar



SITE LAYOUTS

TO BE PROVIDED
UNITS WILL BE IN THE BACK OF THE PROPERTY
90 FEET FROM PROPERTY LINE

The Evaluation Criteria

- Economics
- Non-Economic Considerations
- Enchanted Rock Only
 - Sound Levels
 - Commercial /Legal Considerations

20-Year Economics

Option	Diesel	Gas	Enchanted Rock	
			As Proposed	Counter
First Cost	\$2,264,000	\$3,385,000	\$1,992,000	TBD
O&M	\$600,000	\$600,000	N/A	
Additional Interest*	N/A	N/A	?	
Property Taxes	N/A	N/	(\$250,000)?	
Net Power Revenue	N/A	N/A	N/A	
Total 20-Year	\$ 2,864,000	\$3,885,000	\$1,742,000	

*On taxable bonds?

\$2,143,000 Difference



Non-Economic Considerations

Consideration	Diesel	Gas	Enchanted Rock
Mechanical Reliability	Acceptable	Better	Best
Fuel Reliability	Acceptable	Best	Best
Sound & Air Emissions			
Hourly	Acceptable	Best	Best
Annual	Acceptable	Best	Acceptable
O&M Control	Best	Best	Minimal
Financial Control	Best	Best	None

Recommendation

1. Pursue Enchanted Rock offer subject to negotiation of conditions
2. If unsuccessful, explore the possibility of LID 7 owning 100% of units
3. If unsuccessful purchase Caterpillar (or comparable) gas units with provision to add power export capability in the future

Objective: Resolve which option within 30 days

Mechanical Reliability

- High historical reliability of all LID options.
- Per DOE study, Gas Engines are slightly more reliable than Diesel units.
- On paper, the fact that ER's units have more run time, with specialized maintenance staff and more units should result in better availability.
- Director Hanig received endorsement from retired Caterpillar competitor of Doosan who stated Doosan gen sets have acceptable reliability.

Fuel Reliability

- Per DOE study, gas versus diesel fuel reliability differences are small and not a first order decision factor.
- The diesel units will have two days of storage which for practical purposes will last four days.
- Having gas here and diesel at existing site provides desirable fuel diversification.

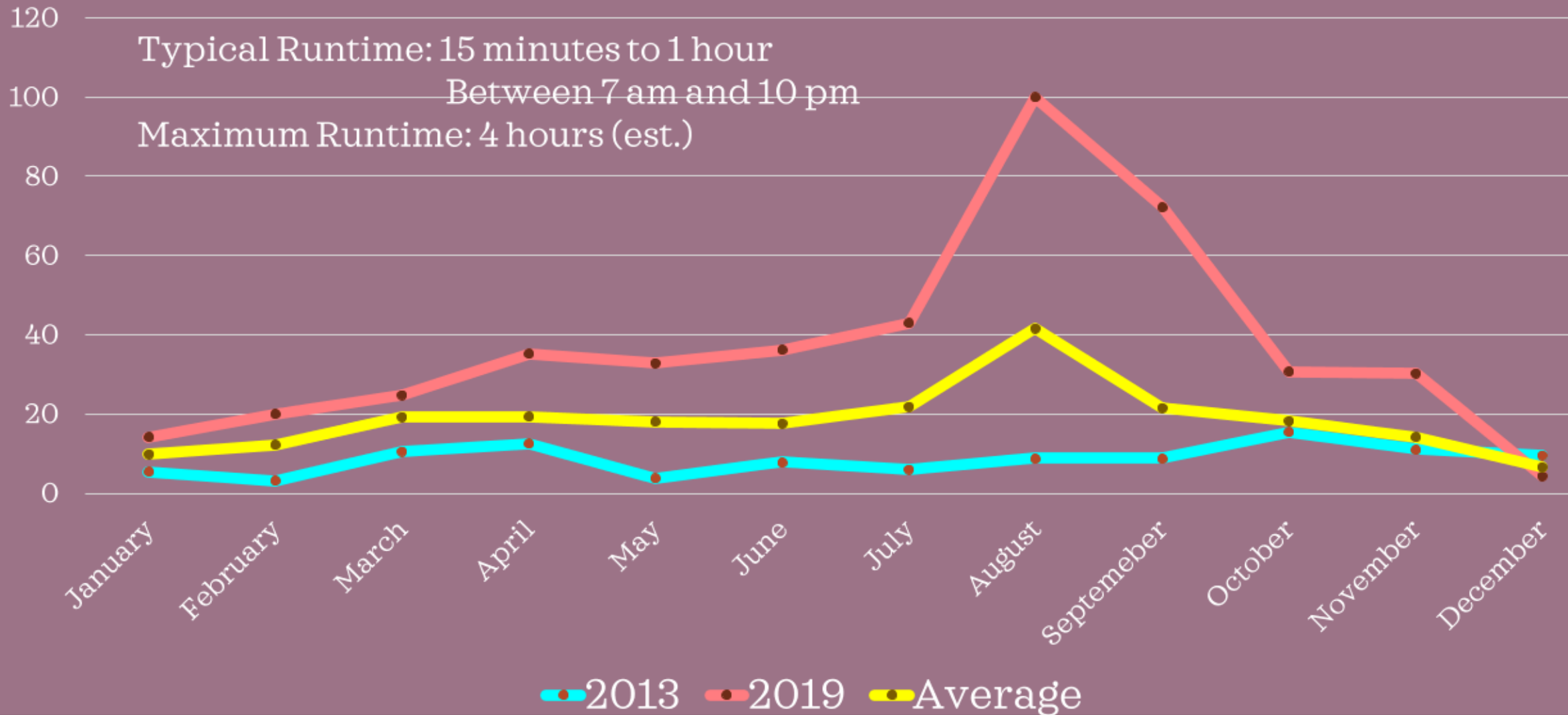
Noise Comparison - Estimated Decibels

<u>Location</u>	<u>Existing Lid 7 Generator</u>	<u>Diesel /Gas</u>	<u>Enchanted Rock</u>
Background	45	45	45
@23 Feet Industry Std	85	70	68
@Residential Fence Line	55	55.5	53.5
Average Hours / Month	0.25	0.25	17
Average Hours / Year	5	5	200
Maximum Hours / Year	?	?	400+
Normal Conversation ~60-65 dBa		Assumes -5 dBa for sound wall.	

Comments on Sound

- Decibel (dBa) readings are useful when comparing different sources or background noise with new sources.
- dBa readings provide an indication of whether you will have to talk louder to be heard.
- However, pitch and relative sound levels are arguably more of a concern than absolute levels.
 - E.g. a dripping faucet is bothersome in a quiet room but undetectable with background noise.
- Obviously the length of time sound is generated is a primary concern.

ER Monthly Runtime - Low, Average & High



Air Emissions

- Comparing Diesel versus ER Natural Gas emissions is complicated by
 - Basis (permitted, mfg guarantee, versus initial)
 - Run time (15 min/month or 200 hours/yr)
 - According to ER , on an hourly basis, Gas has:
 - 9% of NO_x, 83% of CO, 9% of PM, 2% of VOC

LID 2 Contract Termination Provision

- Only comes into play if generators underperform for 4 initial hours when LID calls for power.
- Primary recourse is that LID can buy-out Generate Capital at a premium and then terminate Enchanted Rock's operatorship.