

Smart Power Infrastructure Demonstration for Energy Reliability and Security (SPIDERS)

Fuel Duration Analysis Brief

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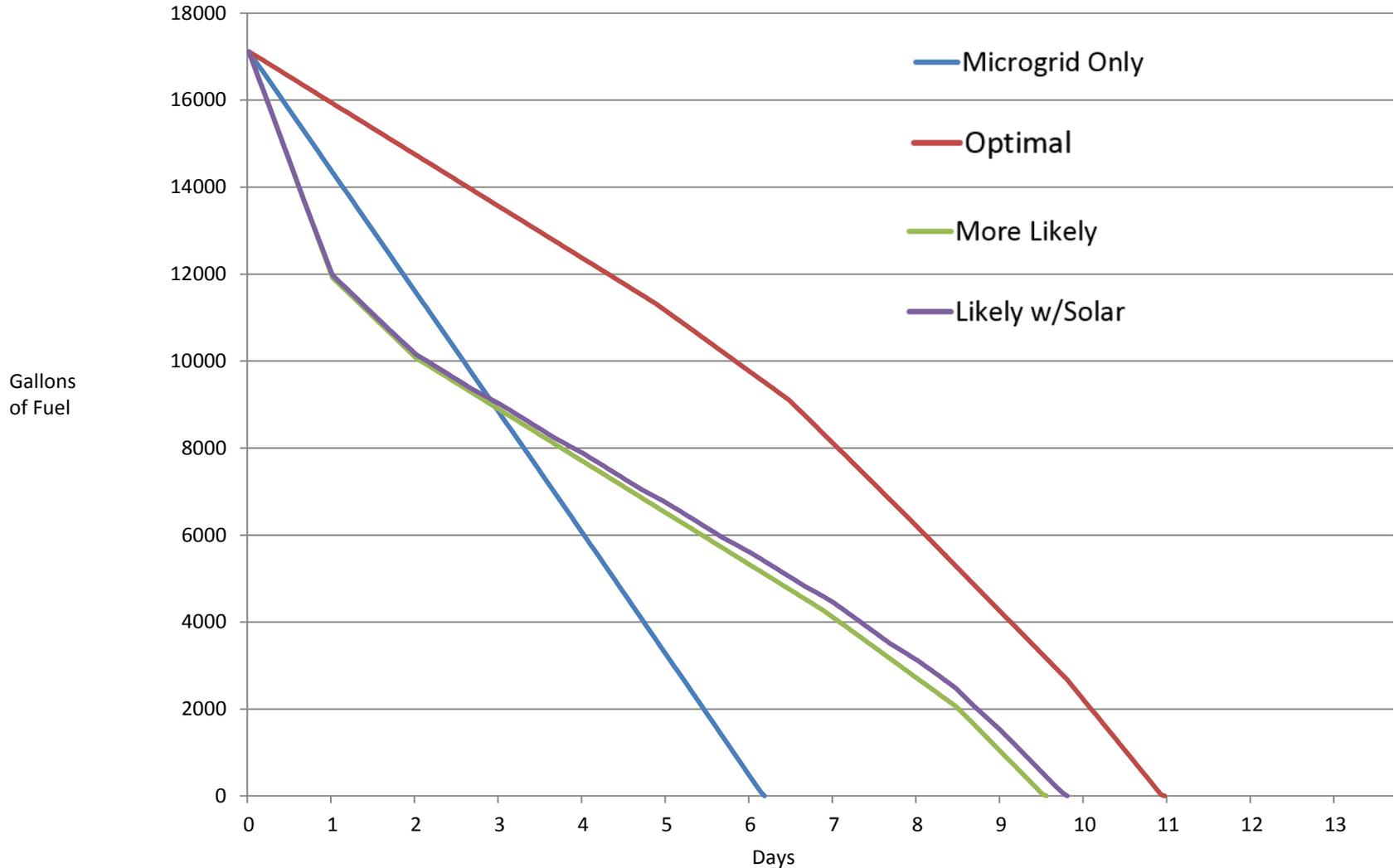


Fuel Duration Assumptions

- **Load data collected by Sandia National Laboratories at 15 min intervals Jan 2011 – Jan 2012 (worst case data used)**
- **Critical load data collected by Sandia every 5 min for 2 weeks in Aug 2012 (worst case data used)**
- **Standardized fuel consumption rates for various size generators provided by Sandia**
- **Inventory of Camp Smith generators and fuel capacities provided by Camp Smith facilities**
- **Average fuel level of 87%**
- **Constant load regardless of the time of day or the day of the week**
- **Constant solar contribution over 8 hours a daylight per day**
- **Solar output estimated by NREL PVWatts calculator at Honolulu Int'l Airport**
- **Future planned solar not included**



Fuel Duration Analysis Results



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SPIDERS Monetary Benefits

Attributes	2010 PNNL Study	NPS Phase 1 Thesis	PACOM Phase 3 Estimate	Burns & McD Phase 3 Estimate
Conservation Effect	3%		\$550,000/year	
Smart Building Diagnostics	3%			
M&V for EE Programs	1%			
EV Integration	3%			
Voltage Regulation/Control	2%			
Demand Response		\$19,600/year	\$250,000/year	
Diesel Fuel Deferred		\$23,400/year	\$1,500/year	
EPA Fines		Up to \$50,000/day*		
Demand Management			\$150,000/year	\$100,000/month**
TOTAL	12%	\$43,000/year	\$951,000/year	\$1,200,000/year

* Mentioned in the thesis, but not included in the analysis

** Doesn't include labor and O&M costs