Jarrett Taylor

Intern - Grid Applications Developer

GAD Team

2019

About Me

Background:

- Coppell, TX
- Texas A&M: B.S. in Computer Science (Minor in EE)
- Hockey, 16 years
- Graduate May 2021: Software Application Developer

County Generation Display Introduction

Bastrop County

Total Gen: 1510.45 Maximum LMP: 42.60

3 2 2 2 2

SUBSTAT_1

CC1 (ON) Output: 498.00 MW

SCED BP 406.50 Updtd BP 406.54 BP Dev 91.46

QSE RegUp Dep 0.00

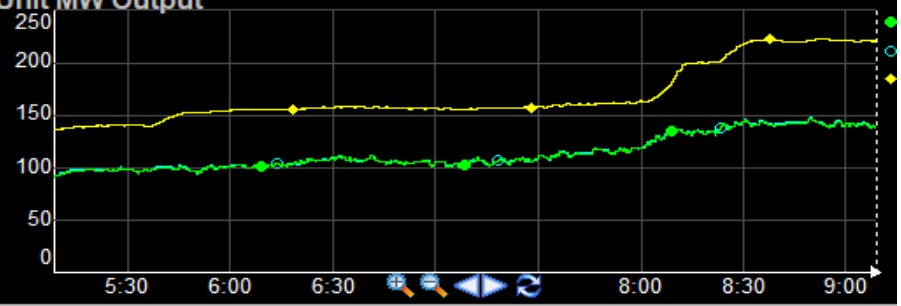
LMP RegDn Dep 0.00

LSL	275.00	HSL	517.00	RURS	0.00
LDL	398.00	HDL	517.00	RDRS	0.00
LEL	275.00	HEL	517.00	RRRS	0.00
LASL	275.00	HASL	517.00	NSRS	0.00

UNIT_1	AVR ONLINE	PSS ONLINE
UNIT_2	AVR ONLINE	PSS ONLINE
UNIT_3	AVR ONLINE	PSS OFFLINE

Unit Name	MW	MVAR
UNIT_1	138.69	-4.00
UNIT_2	139.19	-3.00
UNIT_3	220.11	0.00

Unit MW Output



SUBSTAT_2

CC1 (ONREG) Output: 494.10 MW

SCED BP 493.40 Updtd BP 492.32 BP Dev 1.78

QSE RegUp Dep 3.18

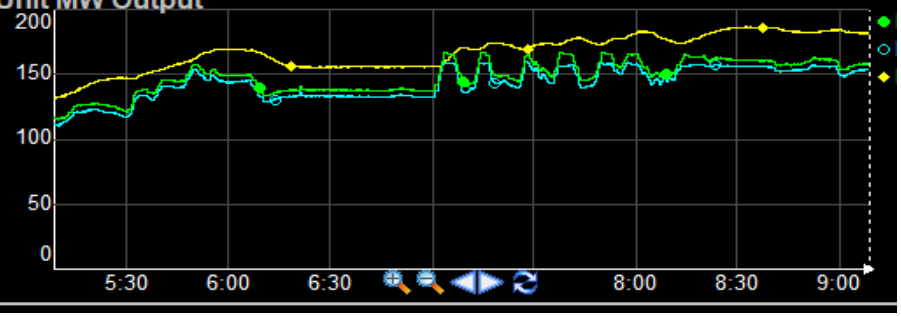
LMP RegDn Dep 0.00

LSL	325.00	HSL	502.00	RURS	9.00
LDL	384.10	HDL	493.00	RDRS	0.00
LEL	325.00	HEL	502.00	RRRS	0.00
LASL	325.00	HASL	493.00	NSRS	0.00

UNIT_1	AVR ONLINE	PSS N/A
UNIT_2	AVR ONLINE	PSS N/A
UNIT_3	AVR ONLINE	PSS N/A

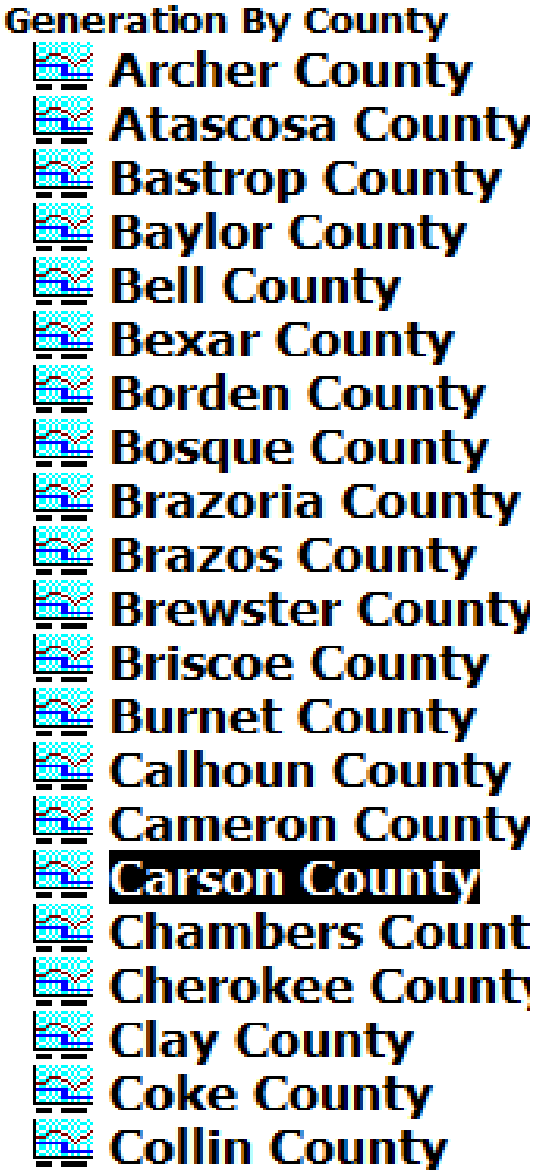
Unit Name	MW	MVAR
UNIT_1	158.70	-7.30
UNIT_2	153.70	-1.10
UNIT_3	181.50	-17.00

Unit MW Output

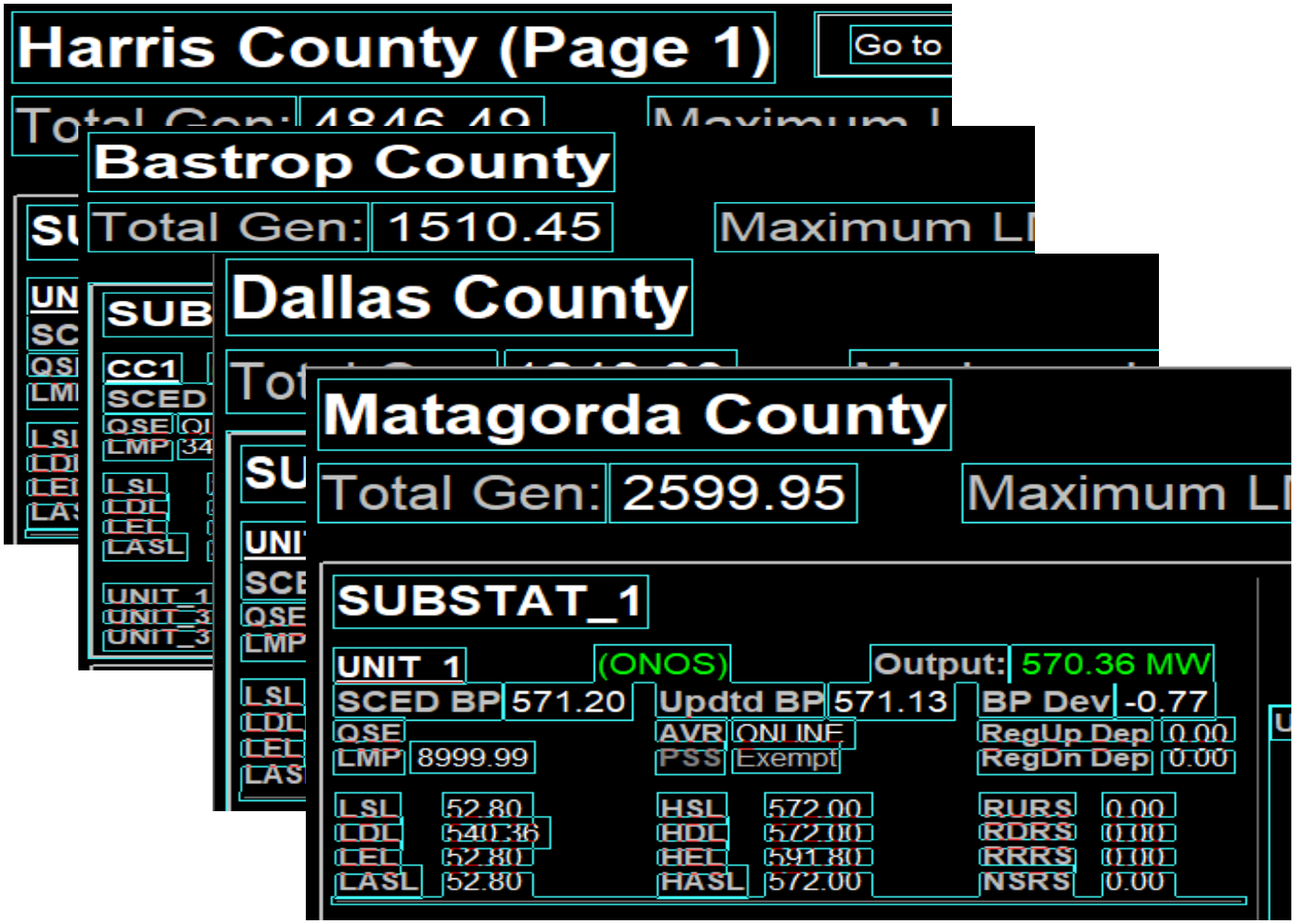


Problem – ProcessBook

- Manual Maintenance
- Inefficient Updating
- Accuracy Problems
- Aging technology



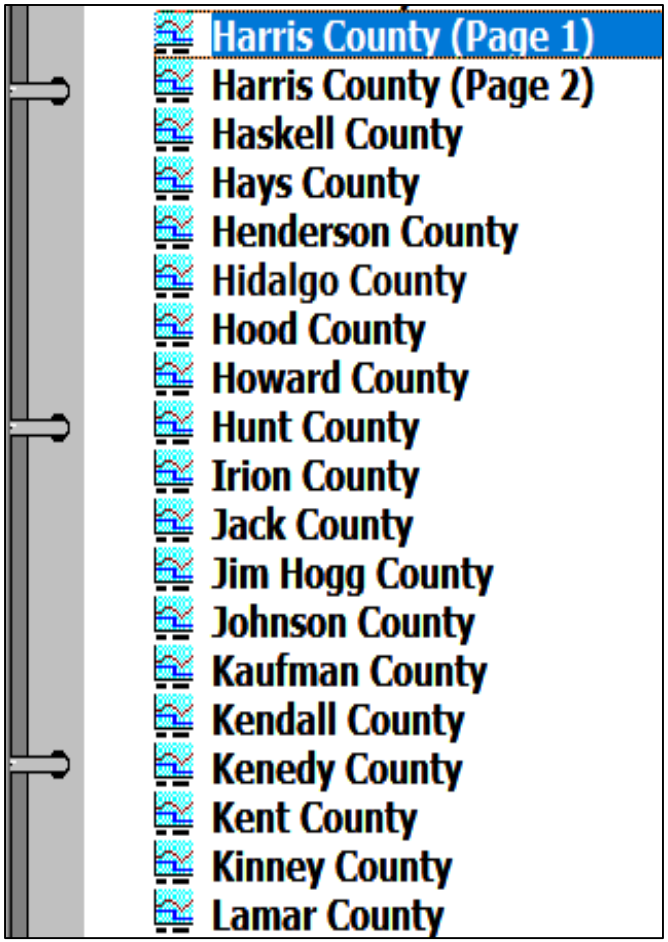
Problem – Manual Updates

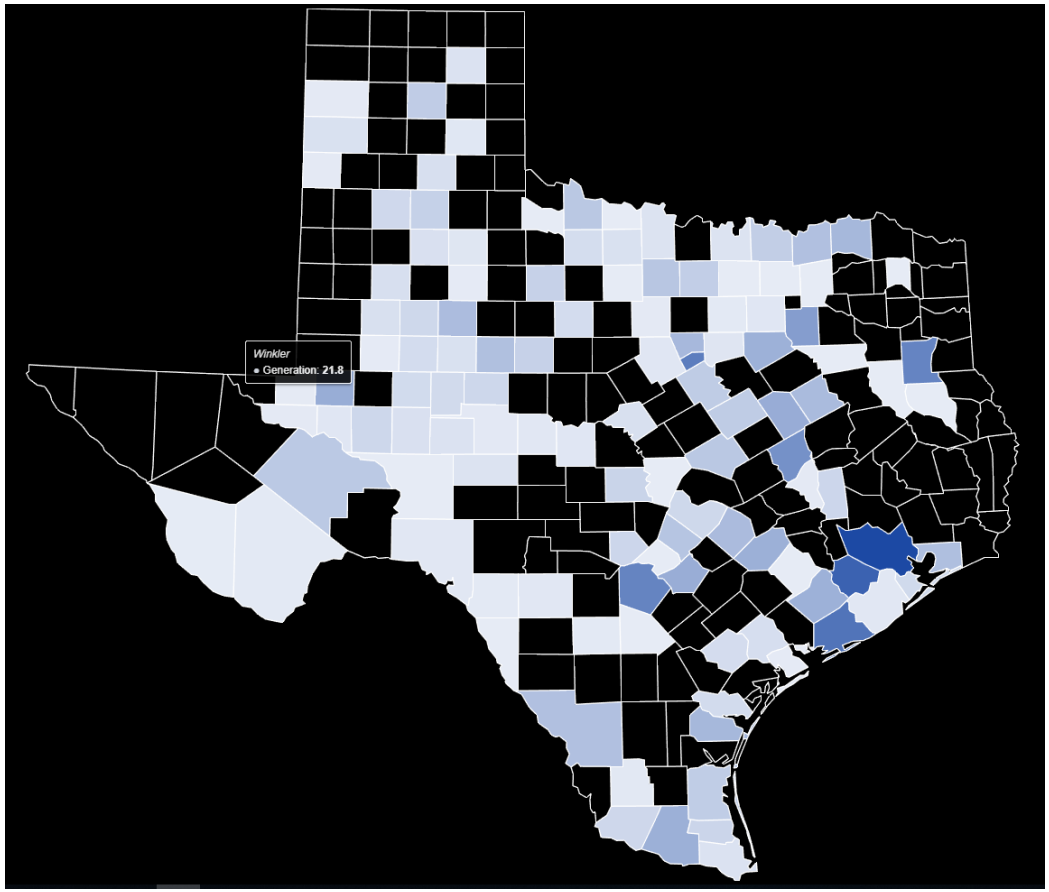


All values must be placed and configured manually.

Solution – Transition: ProcessBook to Web Application

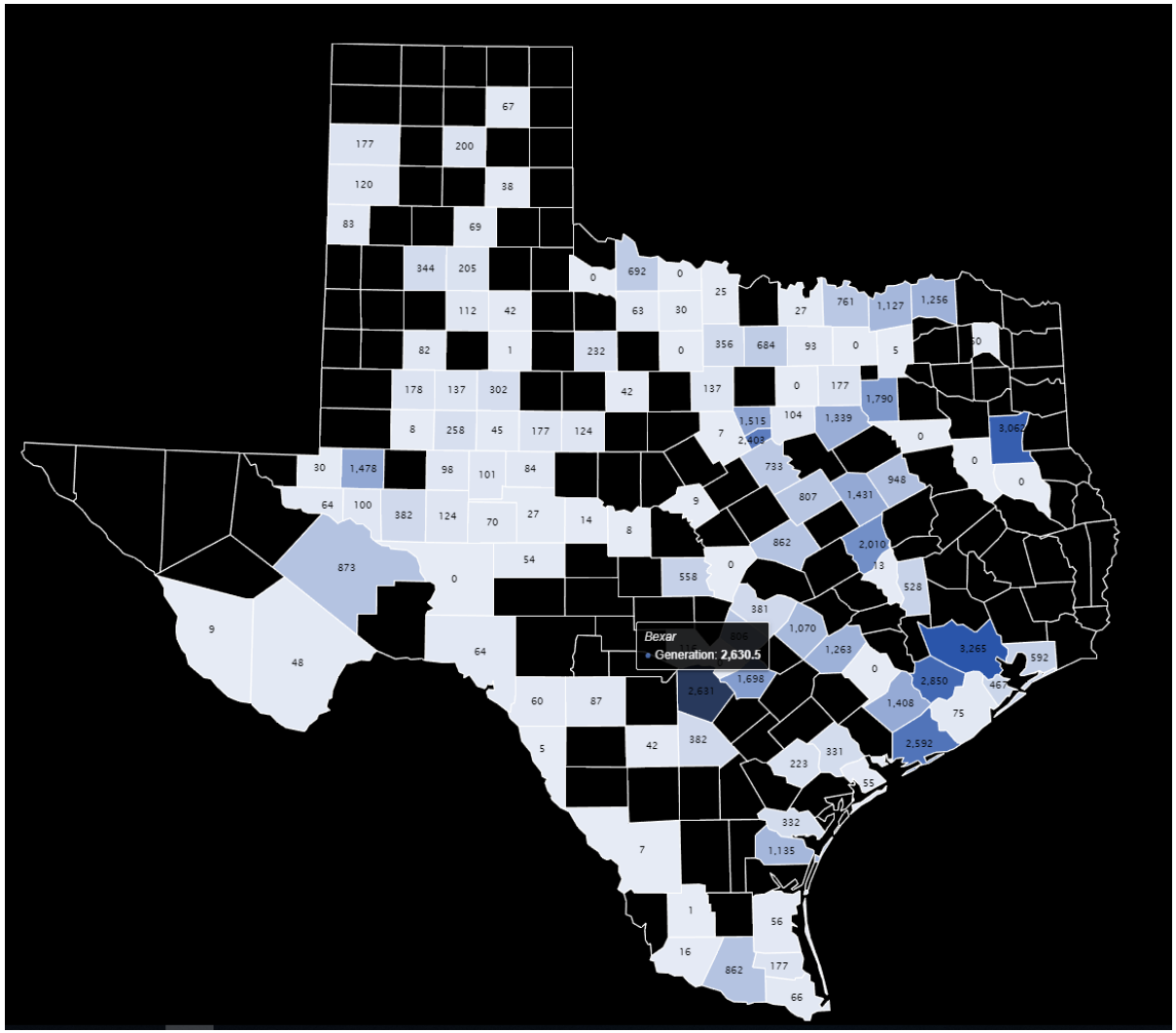
The displays will be moved from separate display files…





…to a single web based application which can be bookmarked.

Typical Use Case – Texas Map/Input Field



Archer

Atascosa

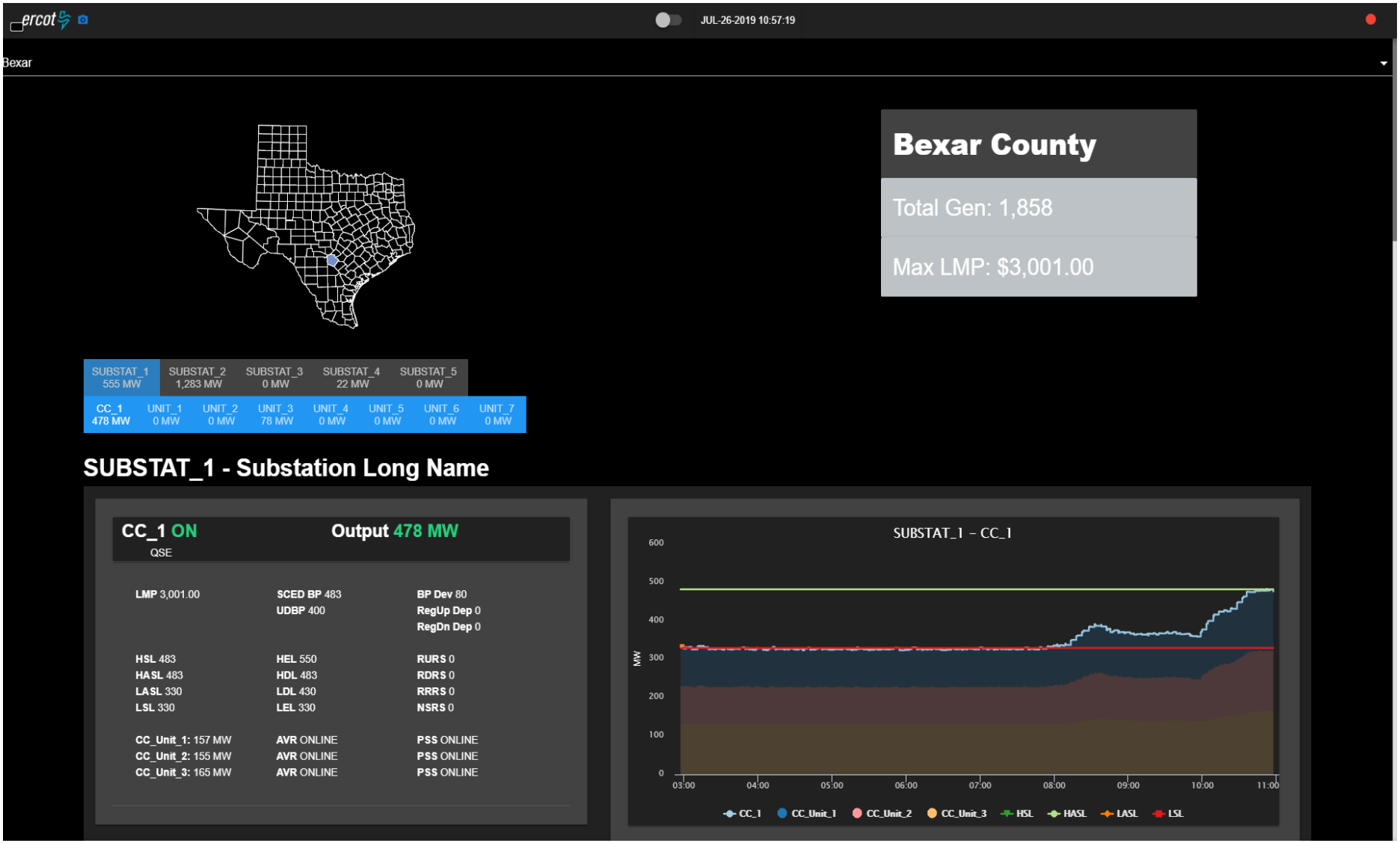
Bastrop

Baylor

Bell

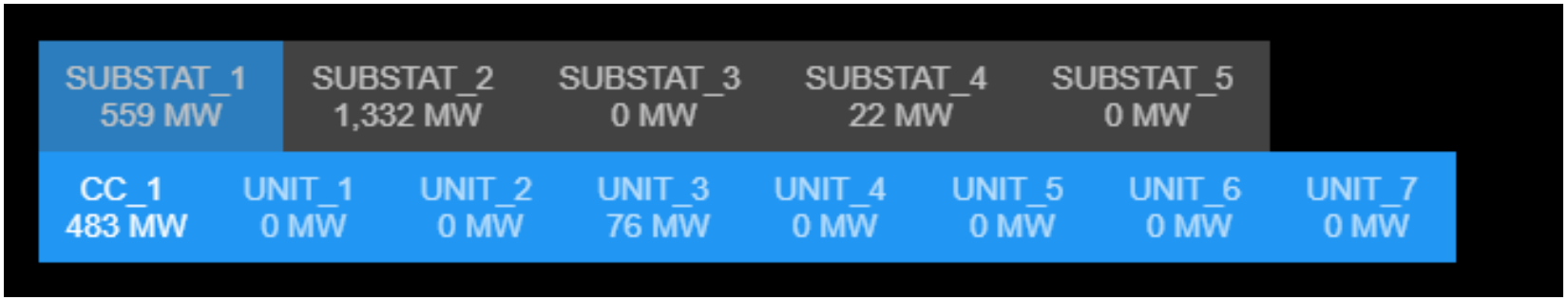
Bexar

Typical Use Case – County Drill-Down



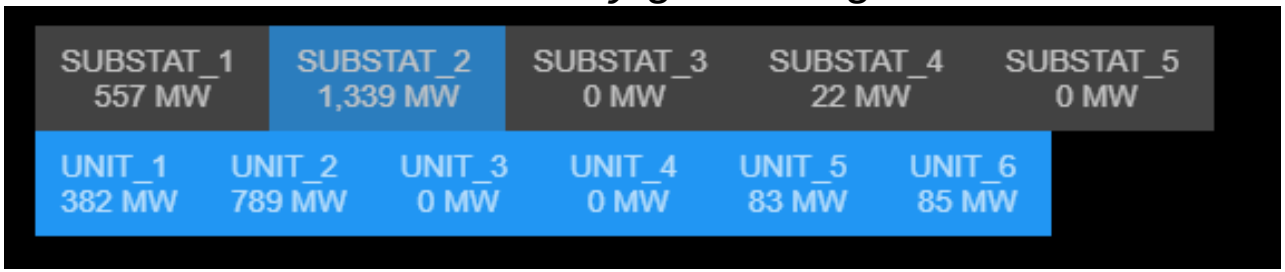
Typical Use Case – Drill-Down Components

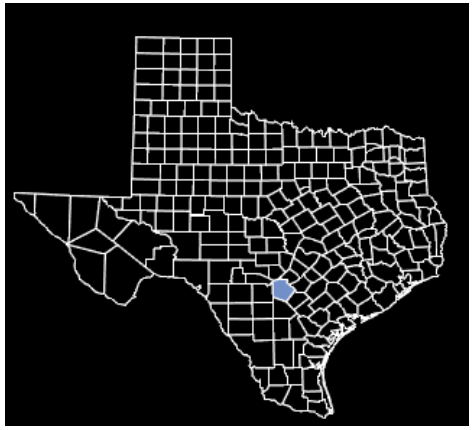
User can see all the generating substations within the county…



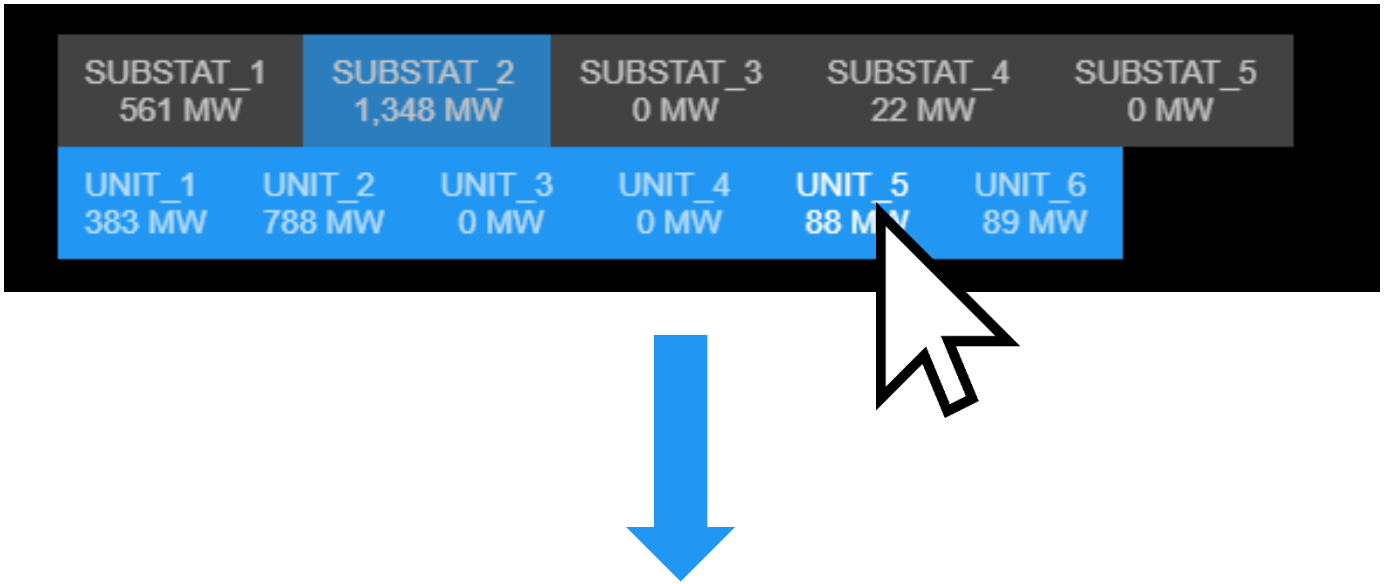
…and the generators within each substation

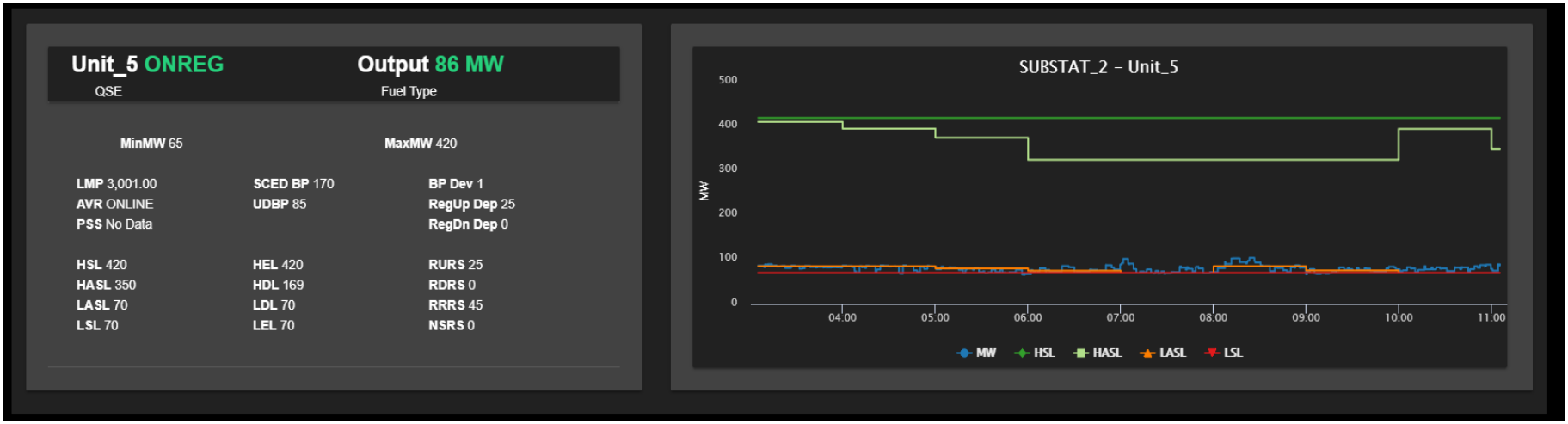
User can switch between any generating substation in the county.



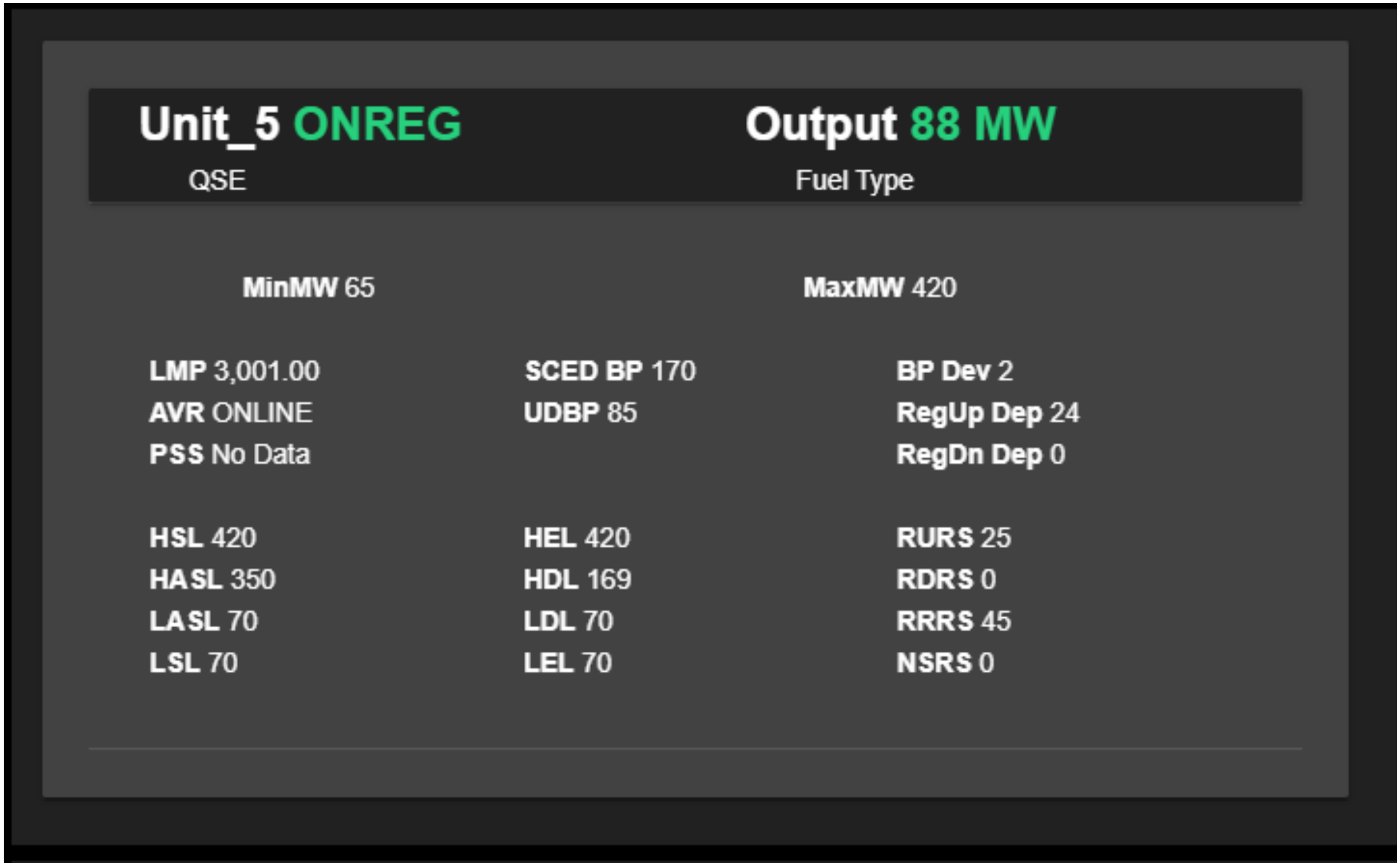


Typical Use Case – Fly-To Generator

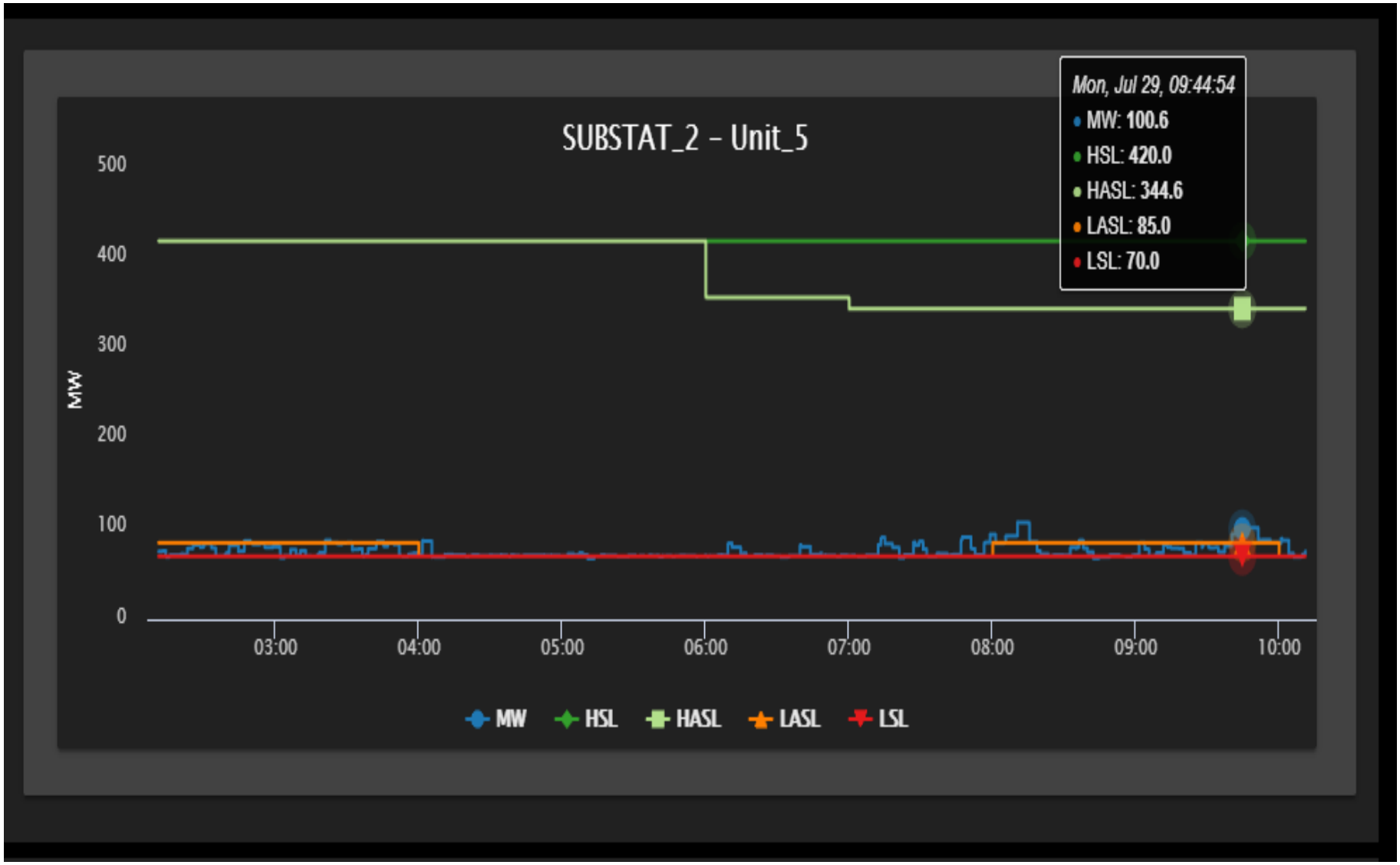




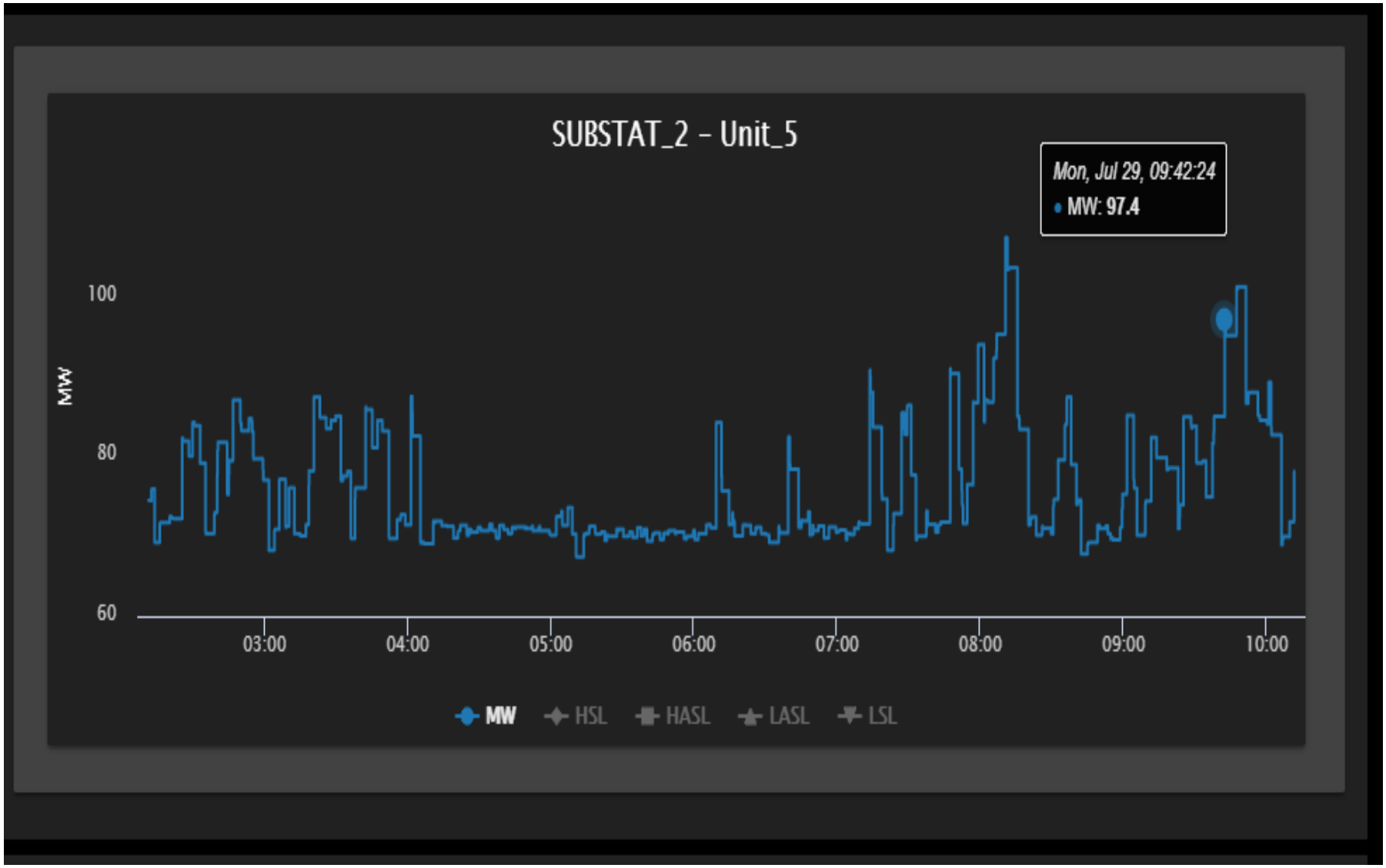
Typical Use Case – Generator Data



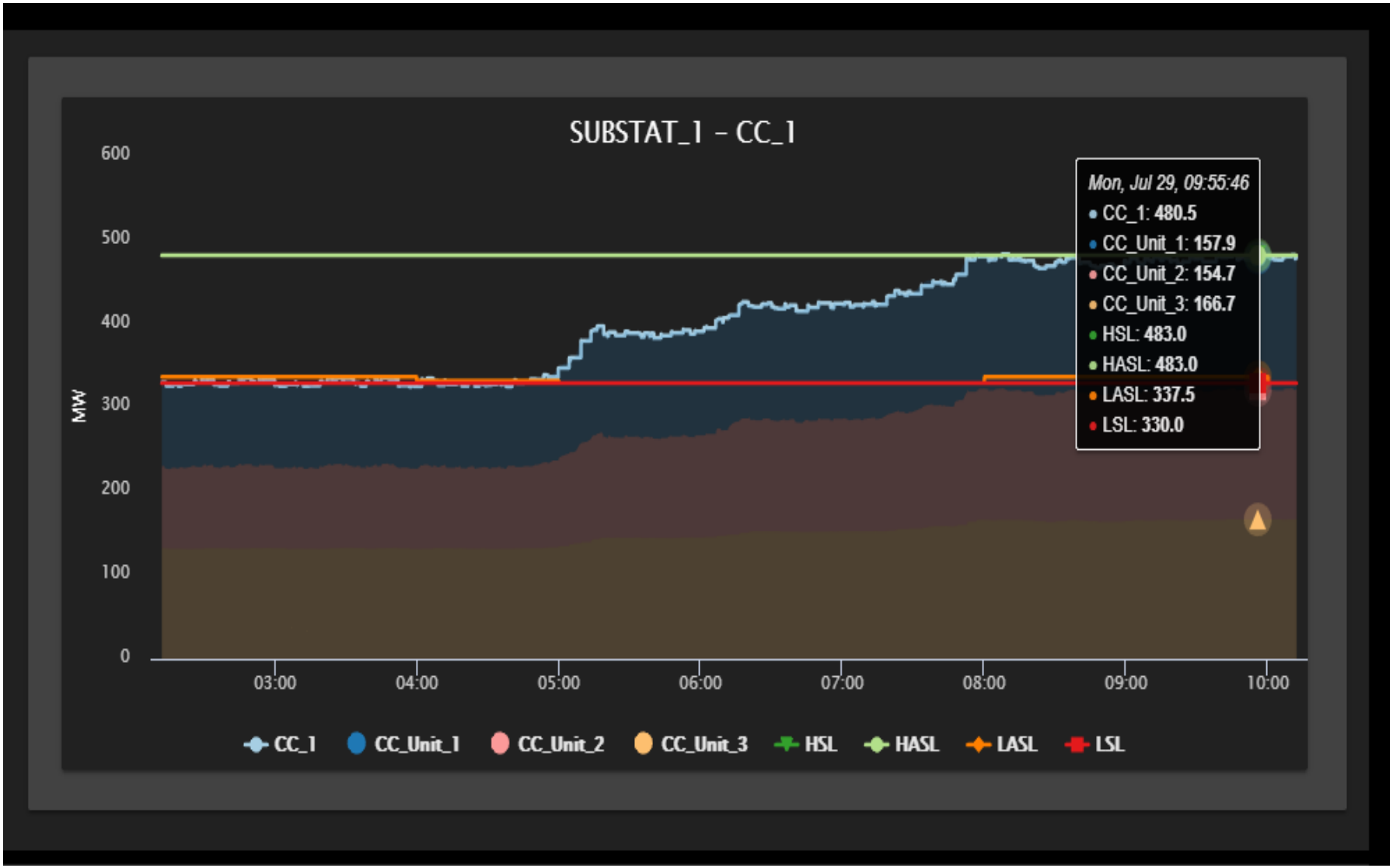
Typical Use Case – Graph



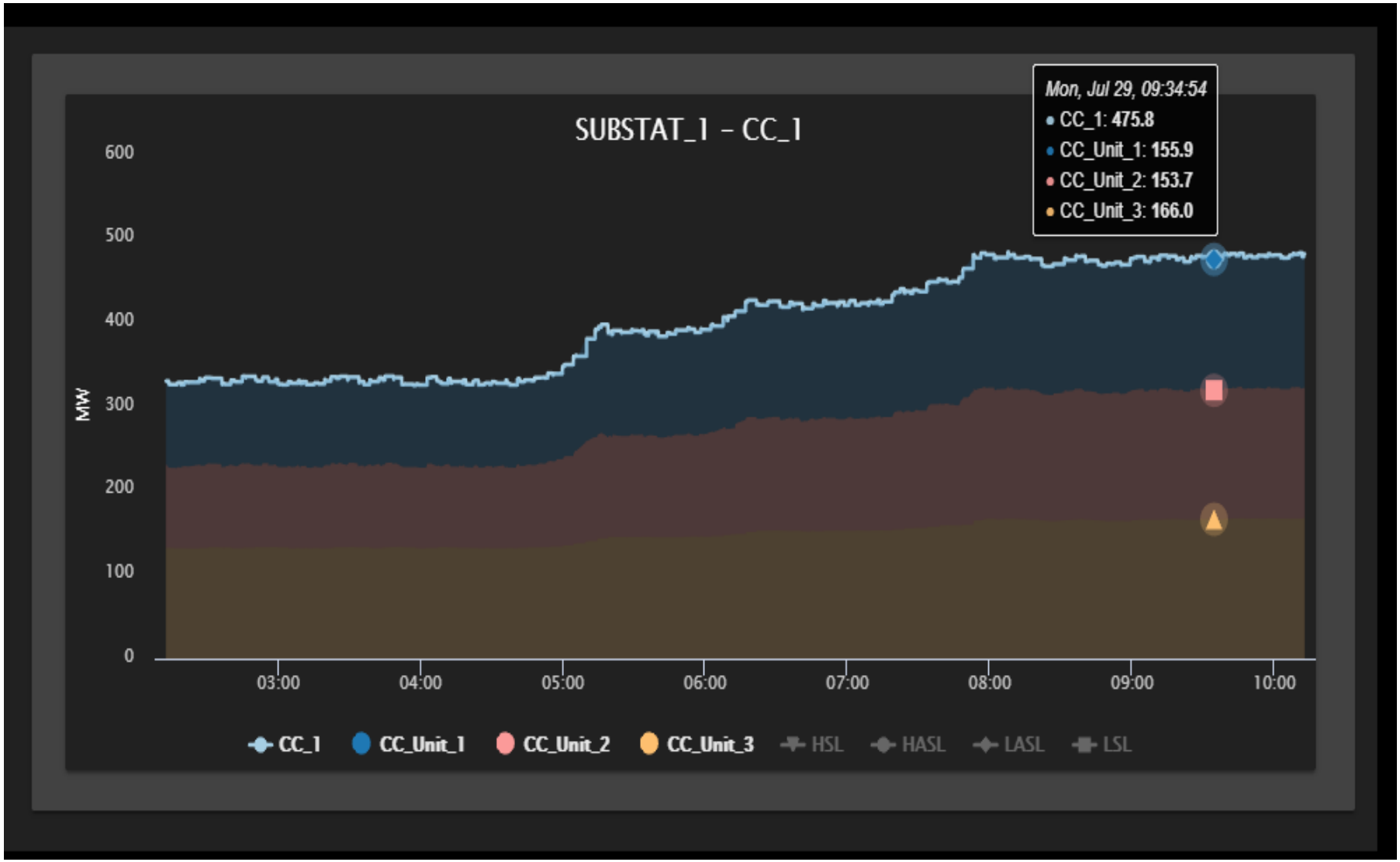
Typical Use Case – Graph Highlight



Typical Use Case – Stacked Graph

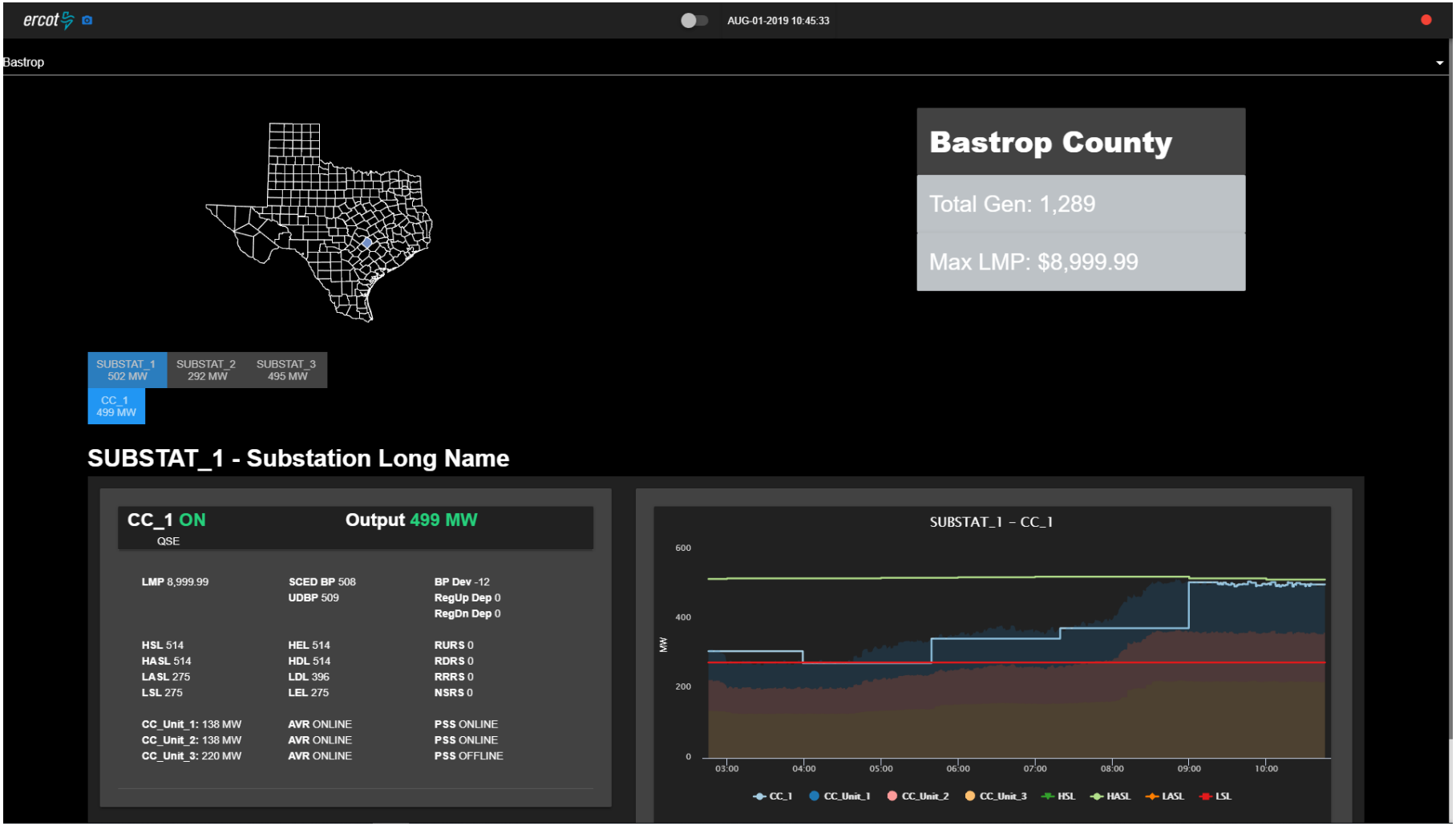


Typical Use Case – Stacked Graph Highlight



Solution – Product

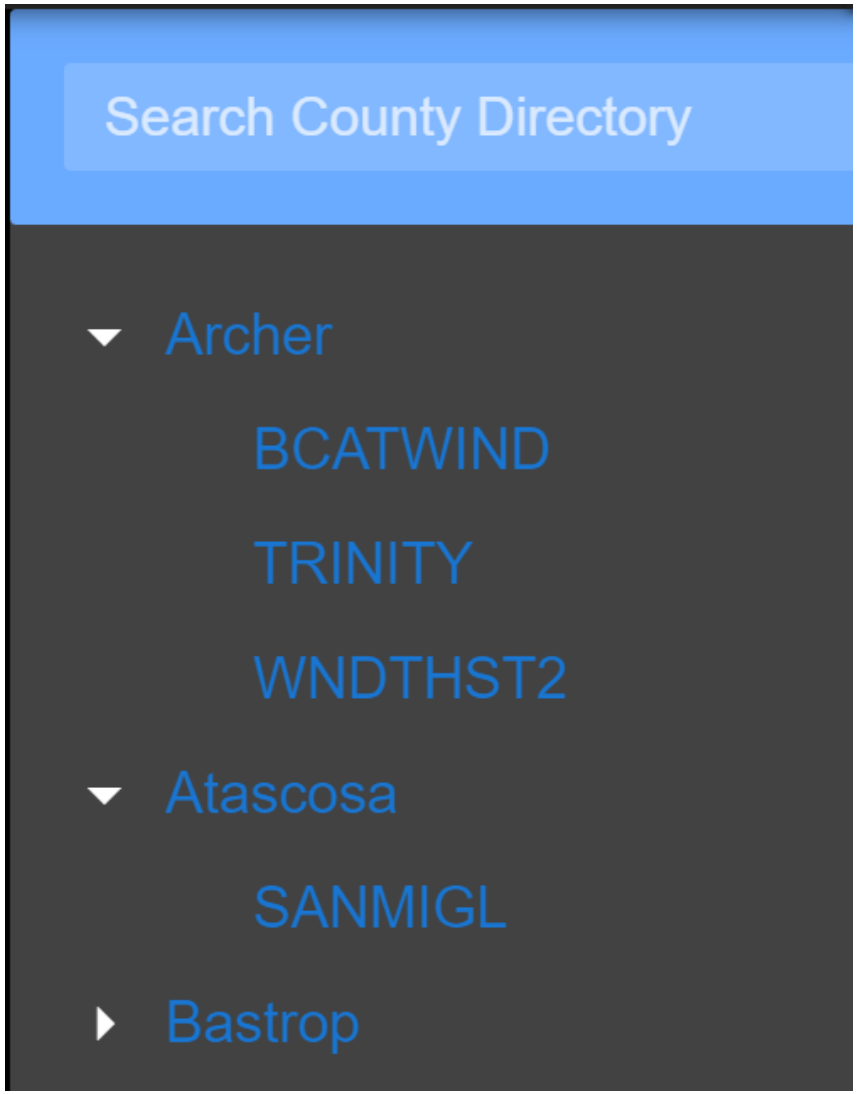
Model-Driven, Efficient, Accurate and Consistent Application



Comparison

Operation	ProcessBook	Web-based
Reusable Code		✓
Efficient and Consistent		✓
Easily Accessible		✓
User/Developer Friendly		✓
High Accuracy		✓
Model Driven		✓
Requires Tedious Manual Updating	✓	

Future Improvement – Substation Search



What I Learned

Technical Knowledge

Business Etiquette

Special Thanks

ERCOT

Joel Koepke

GAD

Questions?