

California Solar Applications Data

R Shiny Application



By: Paul Choi

What's the dataset?

- We decided to analyze the [California Distributed Generation Statistics.gov](https://CaliforniaDistributedGenerationStatistics.gov) solar applications data to gain insights into which companies stand to benefit from the rise of solar power production from the state of California



The screenshot shows the homepage of the California Distributed Generation Statistics website. The header includes a navigation bar with links to Home, Go Solar California, Terms of Use, and Support. Below the header is a main navigation area with icons and labels for Find a Solar Installer, Download Data, Stats & Charts, CA Programs, and FAQ. A search bar is located on the right. The main content area is divided into two sections: 'About California DG Statistics' and 'Latest Updates'. The 'About' section describes the site as the official public reporting site of the California Solar Initiative (CSI), presented jointly by the CSI Program Administrators, GRID Alternatives, the California Investor Owned Utilities, and the California Public Utilities Commission. The 'Latest Updates' section lists recent data releases and publications. The footer features logos for the California Public Utilities Commission, Pacific Gas and Electric Company, Southern California Edison, SDGE, Sempra Energy utility, Center for Sustainable Energy, and GRID Alternatives. A final navigation bar at the bottom repeats the main navigation links and includes a credit to the website's builder, ENERGY SOLUTIONS.

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California Distributed Generation Statistics

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About California DG Statistics

California Distributed Generation Statistics is the official public reporting site of the California Solar Initiative (CSI), presented jointly by the CSI Program Administrators, GRID Alternatives, the California Investor Owned Utilities, and the California Public Utilities Commission.

Latest Updates

October 2019 NEM Data Sets are available for download	2019-12-09
SOMAH Chart Section published	2019-12-02
September 2019 NEM Data Sets are available for download	2019-11-9
July 2019 NEM Data Sets are available for download	2019-10-8

Public Utilities Commission
Pacific Gas and Electric Company
SOUTHERN CALIFORNIA EDISON
An EDISON INTERNATIONAL Company
SDGE
A Sempra Energy utility
Center for Sustainable Energy
GRID ALTERNATIVES

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View(data)

ui.R ×server.R ×global.R ×solar_analysis.R ×data ×

FilterFilterCols: << 1 ~ 50 >>

Application.StatusUtilityService.CityService.ZipService.CountyTechnology.TypeSystem.Size.DCSystem.Size.ACTiltAzimuthMounting.MethodTrackingCustomer.SectorApp.Received.Date

Interconnected	PGE	SAN FRANCISCO	94107	SAN FRANCISCO	Solar PV	2.670	2.510					Residential	2012-11-27
Interconnected	PGE	UNION CITY	94587	ALAMEDA	Solar PV	133.069	127.747					Industrial	2012-12-20
Interconnected	PGE	SAN FRANCISCO	94127	SAN FRANCISCO	Solar PV	5.914	5.677					Residential	2012-11-27
Interconnected	PGE	Union City	94587	ALAMEDA	Solar PV	128.674	123.530					Industrial	2011-02-04
Interconnected	PGE	WOODLAND	95776	YOLO	Solar PV	2314.752	2268.457	Tracking	Tracking	Rooftop	Single-Axis	Commercial	2016-08-30
Interconnected	PGE	SHAFTER	93263	KERN	Solar PV	1909.670	1871.477	Tracking	Tracking	Rooftop	Single-Axis	Industrial	2016-08-30
Interconnected	PGE	BAKERSFIELD	93312	KERN	Solar PV	1432.716	1398.219	Tracking	Tracking	Rooftop	Single-Axis	Educational	2016-09-15
Interconnected	PGE	BAKERSFIELD	93312	KERN	Solar PV	1416.708	1382.852	Tracking	Tracking	Rooftop	Single-Axis	Educational	2016-09-15
Interconnected	PGE	SAN LEANDRO	94577	ALAMEDA	Solar PV	2356.485	2321.138	5	228	Rooftop	Fixed	Commercial	2016-10-13
Interconnected	PGE	Fresno	93706	fresno	Solar PV	873.647	860.542	Tracking	Tracking	Ground	Single-Axis	Industrial	2016-10-12
Interconnected	PGE	Reedley	93654	Fresno	Solar PV	1172.992	1155.397	2	270	Rooftop	Fixed	Industrial	2016-11-02
Interconnected	PGE	SHAFTER	93263	KERN	Solar PV	2678.358	2598.404	10	180	Ground	Fixed	Commercial	2017-01-04
Interconnected	PGE	DOS PALOS	93620	MERCED	Solar PV	1713.420	1687.719	15	180	Ground	Fixed	Other Government	2016-12-19
Interconnected	PGE	KETTLEMAN CITY	93239	KINGS	Solar PV	1669.248	1635.863	20	180	Ground	Fixed	Industrial	2017-04-20
Interconnected	PGE	Kingsburg	93631	FRESNO	Solar PV	2057.222	2015.380	Tracking	Tracking	Ground	Single-Axis	Other Government	2017-06-20
Interconnected	PGE	SALINAS	93901	MONTEREY	Solar PV	2001.773	1971.746	Tracking	Tracking	Ground	Single-Axis	Commercial	2017-07-03
Interconnected	PGE	Helm	93627	FRESNO	Solar PV	1043.906	1023.030	Tracking	Tracking	Ground	Single-Axis	Commercial	2017-07-27
Interconnected	PGE	Gilroy	95020	SANTA CLARA	Solar PV	1296.648	1270.175	10	240	Ground	Fixed	Educational	2017-08-04
Interconnected	PGE	San Jose	95127	SANTA CLARA	Solar PV	8.120	7.633					Residential	2002-08-02
Interconnected	PGE	Davis	95616	YOLO	Solar PV	2.496	2.346					Residential	2002-08-02
Interconnected	PGE	Healdsburg	95448	SONOMA	Solar PV	35.469	32.879					Residential	2007-04-19
Decommissioned	PGE	PORTOLA VALLEY	94028	SAN MATEO	Solar PV	64.632	60.754					Residential	2003-11-13
Interconnected	PGE	Walnut Creek	94598	CONTRA COSTA	Solar PV	3.507	3.174					Residential	2004-09-21
Interconnected	PGE	Larkspur	94977	MARIN	Solar PV	1.830	1.720					Residential	2001-08-06
Interconnected	PGE	B...	94514	CONTRA COSTA	Solar PV	2.287	2.150					Residential	2001-10-02

Showing 1 to 26 of 972,301 entries, 101 total columns

ConsoleTerminalJobs

~/Documents/NYCDSA/_Bootcamp/Module_4_Data_Analysis_R/_Shiny_Project/

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 $ Superceding.Id     : chr  "" "" "" "" ...
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 $ Utility            : chr  "PGE" "PGE" "PGE" "PGE" ...
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 $ Service.Zip        : int   94107 94587 94127 94587 95776 93263 93312 93312 94577 93706 ...
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 $ System.Size.AC     : num   2.51 127.75 5.68 123.53 2268.46 ...
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Why?

- Solar power is a growing subsector within “New Energy” and is the cleanest and most abundant renewable energy source available
- The US has some of the richest solar resources in the world
- California easily leads all 50 states in solar electricity production (enough to power 5.4 million homes), nearly 5x larger than the second largest state
- Therefore, California provides the best opportunity to gain insight into the overall US solar market
- Certain investors care about a handful of publicly traded companies tied to any changes to the secular rise in solar power production
- Applications are required before actual installations (e.g. forward looking)

Sources:

- <https://www.seia.org/initiatives/about-solar-energy>
- <https://www.vivintsolar.com/learning-center/top-states-for-solar>

Which companies?

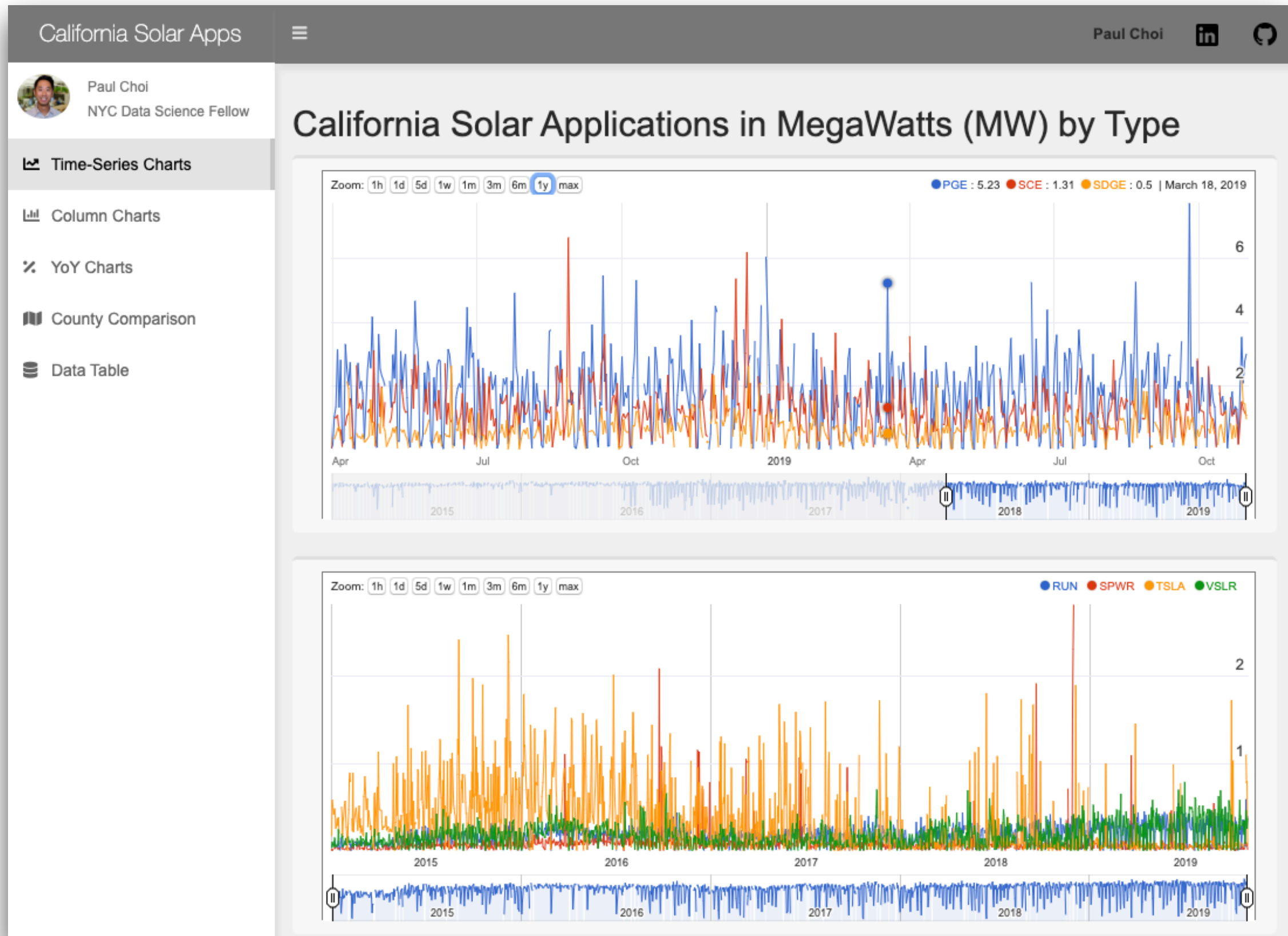
California Investor Owned Utilities:

- Pacific Gas & Electric Company (NYSE: PGE) — \$7.5 bil market cap
- Southern California Edison (OTC: SCE) — \$110 mil market cap
- San Diego Gas & Electric (SDG&E, owned by NYSE: SRE) — \$46 bil market cap

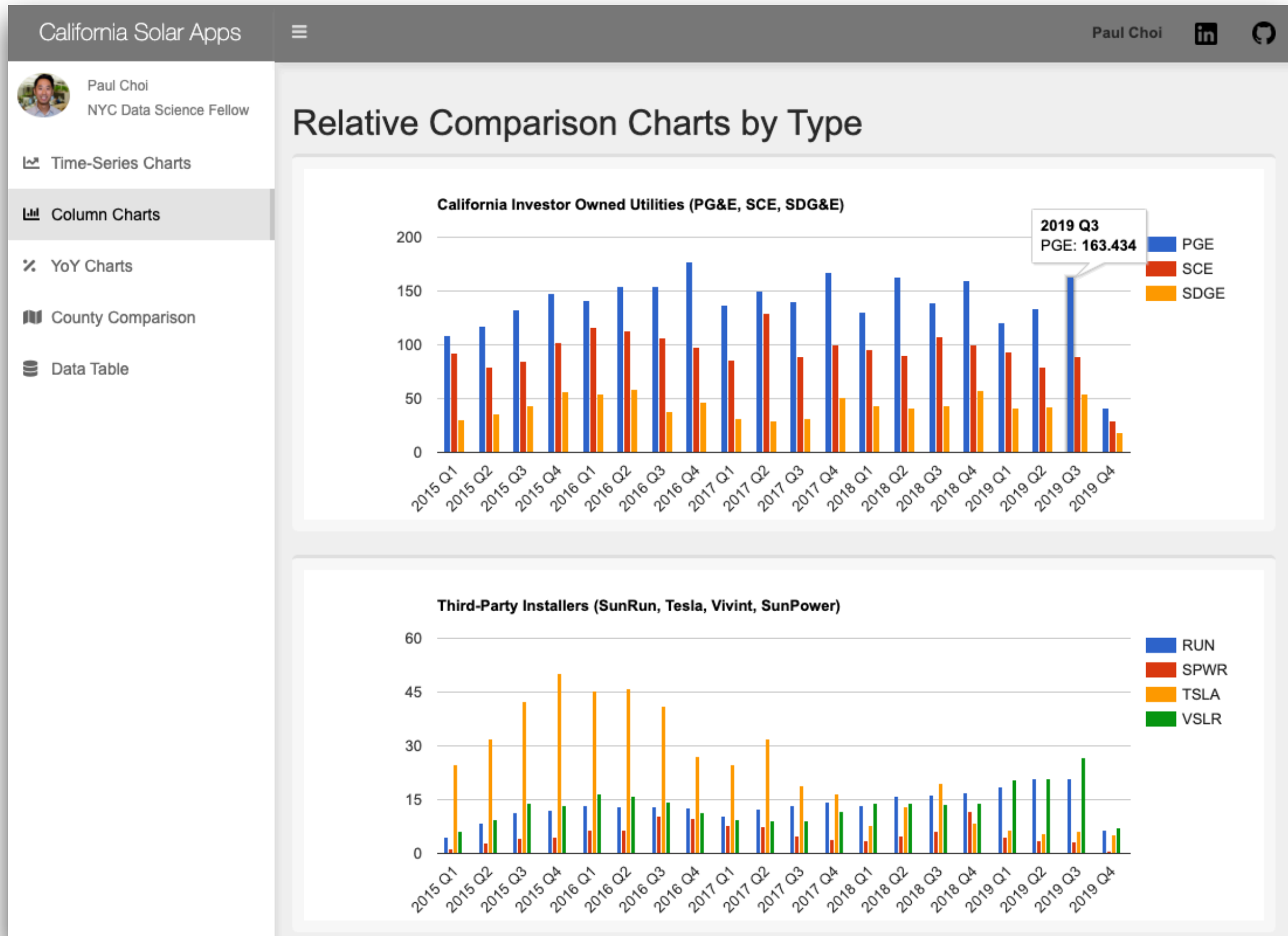
Third Party Installers:

- Solar City (SCTY, now owned by NASDAQ: TSLA) — \$102 bil market cap
- Vivint Solar (NYSE: VSLR) — \$1.0 bil market cap
- SunRun (NASDAQ: RUN) — \$2.0 bil market cap
- SunPower (NASDAQ: SPWR) — \$1.5 bil market cap

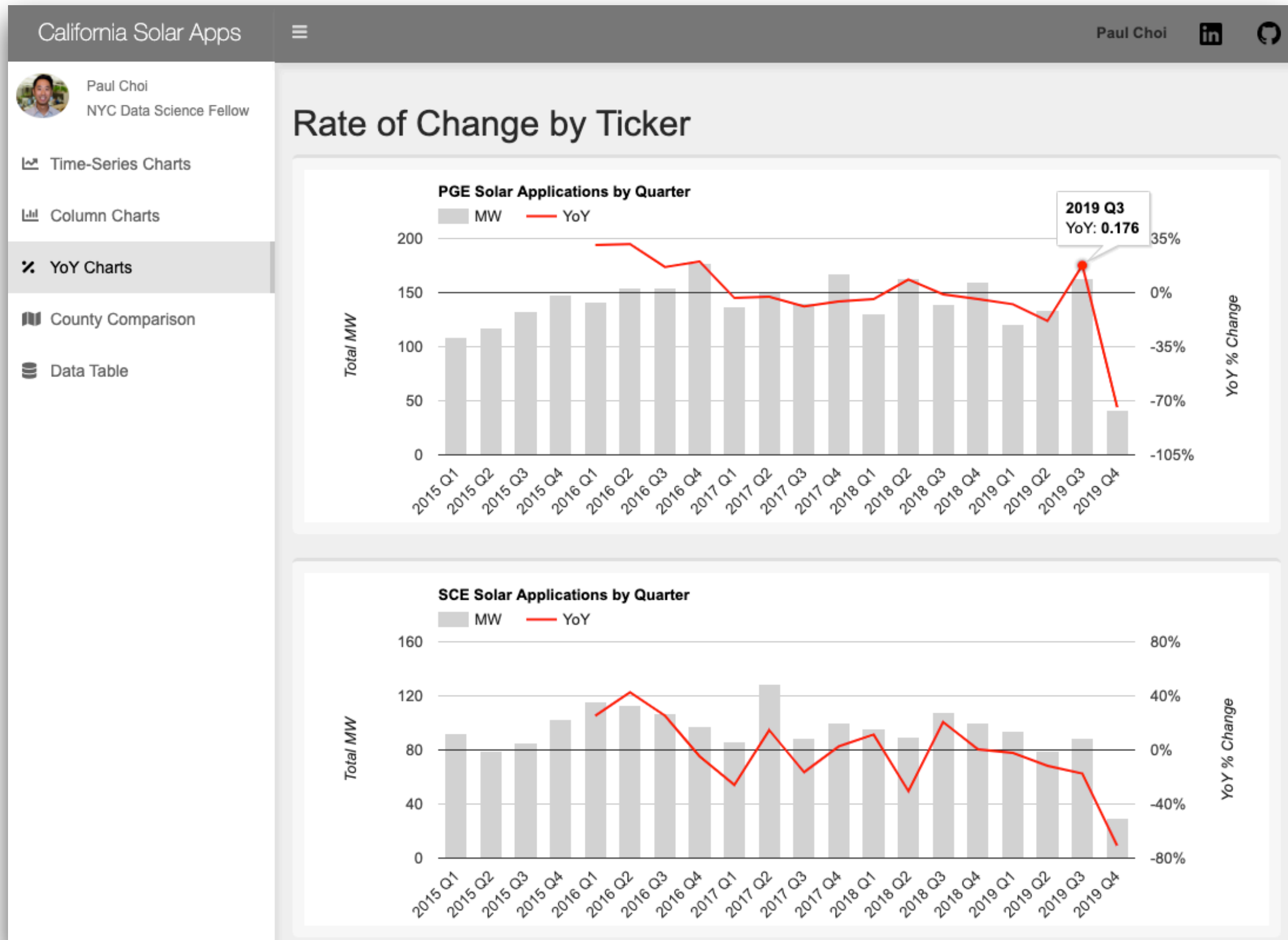
Shiny App (1 of 5)



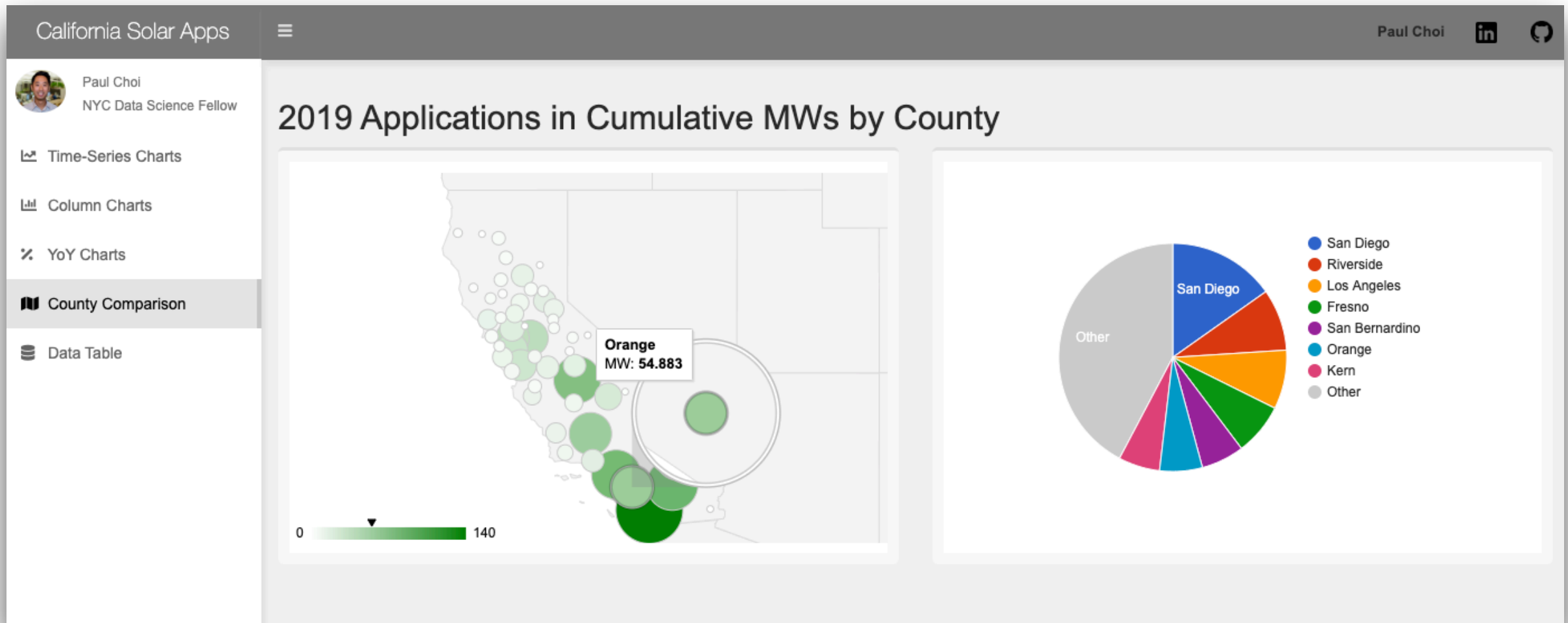
Shiny App (2 of 5)



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California Solar Apps

Paul Choi
NYC Data Science Fellow

Time-Series Charts

Column Charts

YoY Charts

County Comparison

Data Table

California Solar Applications Dataset

Utility

All

Installer

All

Sector

All

Residential

Commercial

Industrial

Educational

Other Government

Non-Profit

Military

County

All

Search:

Show 10 entries

	Date	Utility	City	County	Zip	Sector	Inst	MW	Year	Quarter	Yr.Qtr
1	2015-01-01	PGE	West Sacramento	Yolo	95691	Residential		0.002575	2015	1	2015 Q1
2	2015-01-01	PGE	San Jose	Santa Clara	95124	Residential		0.003553	2015	1	2015 Q1
3	2015-01-01	PGE	Fulton	Sonoma	95439	Residential	TS	0.003367	2015	1	2015 Q1
4	2015-01-01	PGE	Bakersfield	Kern	93309	Residential	TSLA	0.011876	2015	1	2015 Q1
5	2015-01-01	PGE	Antioch	Contra Costa	94509	Residential	TSLA	0.004548	2015	1	2015 Q1
6	2015-01-01	PGE	Stockton	San Joaquin	95209	Residential	VSLR	0.003474	2015	1	2015 Q1
7	2015-01-01	PGE	Brentwood	Contra Costa	94513	Residential	TSLA	0.011188	2015	1	2015 Q1
8	2015-01-01	PGE	Napa	Napa	94559	Residential		0.002452	2015	1	2015 Q1
9	2015-01-01	PGE	Saint Helena	Napa	94574	Residential		0.006274	2015	1	2015 Q1
10	2015-01-01	PGE	Menlo Park	San Mateo	94025	Residential	RUN	0.002284	2015	1	2015 Q1

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Takeaways

- As of 3Q19 and October data, solar application growth for VSLR and SCE continued to accelerate from prior quarters. Growth increased 97% and 26% Y/Y, respectively. These were the two key winners among the IOUs and third-party installers.
- SCTY (TSLA) continued to show meaningful Y/Y declines in 2Q19 and 3Q19, largely in-line with market expectations. However, early reads into 4Q19 from October data shows growth is likely to accelerate from prior quarters.
- Overall solar application growth continues to be driven from Residential customers in Southern California, which appears unlikely to change in the near-term.