





Los Angeles
Department of
Water & Power

INFORMATIONAL BOARD LETTER


REIKO A. KERR
Senior Assistant General Manager – Power System
Engineering, Planning, and Technical Services


MARTIN L. ADAMS
Chief Operating Officer


DAVID H. WRIGHT
General Manager

DATE: June 8, 2018

SUBJECT: Renewable Portfolio Standard Projects – May 2018

Please find attached the Renewable Portfolio Standard (RPS) Projects Update Report for May 2018.

Attachments

- RPS Projects & Programs Update Summary Sheet
- LADWP RPS Master Project List
- Actual and Forecasted Monthly Renewable Energy from Generation and Purchases
- Feed-in Tariff (FiT) Program
- Solar Incentive Program (SIP)

RENEWABLE PORTFOLIO STANDARD (RPS) PROJECTS & PROGRAMS UPDATE SUMMARY SHEET – May 2018

IN-BASIN PROGRAMS

Energy Storage

- 3,103 kW of behind-the-meter customer-owned battery projects pending interconnections.
- 1,296 MW of total systems installed and procured energy storage capacity, including large scale storage.
- LADWP is negotiating with top vendor for 200kW of Lithium and Flow Battery; the batteries will be installed at the JFB building for R&D.
- LADWP is planning to install Battery Energy Storage Systems at Distributed Stations (DS) to alleviate grid congestion problems. LADWP began environmental process at a potential DS location.
- LADWP is proposing City-Owned buildings to install energy storage pairing with other Distributed Energy Resources.

Solar Incentive Program (SIP)

- 358 rebates have been confirmed consisting of 347 Residential (2.2 MW) and 11 Commercial (0.4 MW).
- 244 solar systems were given permission to operate (PTO) consisting of 234 Residential (1.4 MW) and 10 Commercial (942 kW).
- 273 projects totaling 4.6 MW received rebates totaling \$1,194,000.
- 31,156 SIP projects installed since program inception, totaling about 233 MWs, with incentives paid to date of about \$316 million.
- 35,101 Net Energy Metered (NEM) projects installed (including SIP), totaling about 264 MWs.

Feed-in Tariff (FIT)

- 50 projects are in service with a total capacity of 47 MW.
- 100 projects are active and under development with a total capacity of 61 MW.
- Since the June 30, 2017 capacity re-offer, 60 projects totaling 47 MW have been received on a first come first served basis and are now under development, and a 5 MW financial commitment for future project development.

Community Solar Programs (CSP)

- A Shared Solar Program update was presented at the April 24, 2018 Board meeting. Billing system modifications needed for this program are scheduled for completion in August 2018. LADWP plans to seek Board approval for the program at this time.
- The Solar Rooftops Program pilot is being administered; below are a few statistics:
 - Completed Installations: 9 (28 kW)
 - Delivering energy: 5 (16 kW)
 - Awaiting LADBS final approval: 4 (12 kW)
 - Projects in Design/Construction: 34
 - Homes in the Inspections Process: 64
 - Applications to be Processed: 119
 - Disqualified Applications: 527

UTILITY SCALE PROJECTS

Springbok 1, 2, and 3 Solar Projects

350 MWs, 4.0% RPS.

SCPPA Projects, where LADWP is the only participant, located in Kern County, California.

Updates:

Springbok 1 (105 MWs)

- COD achieved on July 11, 2016

Springbok 2 (155 MWs)

- COD achieved on September 6, 2016

Springbok 3 (90 MWs)

- 8minutenergy provided written notification (per PPA requirements) to SCPA and LADWP that the COD of the project will be April 2019; the PPA executed in 2016 allowed for COD from 2017 to 2020, at 8minutenergy's election, in return LADWP was provided up to 25 hours of yearly curtailment

Beacon Battery Storage Project

20 MWs, 10 MWh

LADWP Project located in Kern County, California.

Updates:

- The project is co-located at the Beacon Solar Project and was energized on April 9, 2018 and is on track to be fully commissioned by August 2018.
- Various equipment has arrived to the site. Battery containers arrived mid-February 2018.

Northern Nevada Geothermal Portfolio Project

150 MWs, 5.0% RPS, expected CODs in three development periods ending on 12/31/2018, 12/31/2020 and 12/31/2022 respectively until reaching 150 MW Capacity

SCPA Project from nine existing and new plants in Northern Nevada; LADWP is the sole participant.

Updates:

- Effective date of the PPA was achieved on September 25, 2017 and the Developer is continuing to work on meeting the COD requirements for the second facility
- Tungsten Mountain (24 MW) achieved COD December 1, 2017 and Steamboat Hills (12 MW) achieved COD on March 6, 2018 for a total of 36 MW
- McGuinness Hills 3 (38 MW) is scheduled for COD on December 31, 2018.

ARP Loyalton Biomass Project

8.9 MWs, 0.8% RPS, COD on April 20, 2018

SCPA (11.98MW), SMUD (4.22MW), MID (.99MW), and TID (.81MW) are the PPA Buyers.

LADWP (8.9 MW), Riverside (.8 MW), Anaheim (.8 MW), and IID (1.5 MW) are the SCPA project participants

Updates:

- The project was approved by the City Council on March 13, 2018.
- Delivery commencement was achieved on April 20, 2018
- Point of delivery is CAISO Summit 120 kV; All SCPA and non-SCPA project participants will sell the power at the POD with Riverside acting as the Scheduling Coordinator

LADWP RPS Master Project List, AS OF MAY 2018	

	PPA/Own	COD ^a	Ownership Option date	LA's Shares MW	GWh	Comments
Projects In-service						
Small Hydro	Own	In service		208	569	Existing
DWP Built Solar	Own	In service		6.1	10.7	Existing
Solar CNM (SB1)	Own (REC's only)	In service		250.0	412.5	RECs not RPS Eligible Currently
SW Wyoming Wind	PPA	7/1/06		82.7	203.2	2005 SCPPA RFP
Pebble Springs Wind	PPA	1/30/09		68.7	151.6	2006 SCPPA RFP
MWD Sepulveda	PPA	In service		8.5	33	2006 SCPPA RFP
Willow Creek Wind	PPA	12/1/08		72	166.2	2007 DWP RFP
Pine Tree Wind Power Project	Own	6/1/10		135	248.3	Existing
Milford Wind Phase I	PPA/Own	11/16/09	11/16/19	185	389.6	2006 SCPPA RFP
Milford Wind Phase II	PPA/Own	5/2/11	7/1/18	102	196.0	2006 SCPPA RFP
Windy Point Phase II	PPA/Own	1/31/10	1/31/30	262.2	654.0	2007 SCPPA RFP
Linden Wind Energy Project	Own	6/30/10		50	138.7	2007 SCPPA RFP
North Hollywood PS Power Plant	Own	In service		1	5.3	Existing
Shell Renewable Biomethane	PPA	1/1/12	12/31/21	N/A	320	2011 Gas Purchase
Adelanto Solar Facility	Own	6/30/12		10.0	21	Existing
Pine Tree Solar Facility	Own	3/15/13		8.5	18	Existing
Manzana Wind	PPA	12/20/12		39	105.9	10 year contract
Don Campbell I Geothermal	PPA	1/1/14		13.71	114	2011 SCPPA RFP
Solar Feed-In-Tariff	PPA	In service		47.0	82.3	Existing
Copper Mountain Solar 3	PPA/Own	4/8/15	4/8/25	210	515	2011 SCPPA RFP
Hudson Ranch	PPA	5/4/15		55	483	Existing
Don Campbell II Geothermal	PPA	9/17/15		16.2	135	2014 SCPPA RFP
Heber 1 Geothermal	PPA	2/2/16		35.9	299	10 year contract
Springbok 1 Solar	PPA/Own	7/11/16	7/10/31	105	284	2012 SCPPA RFP
Springbok 2 Solar	PPA/Own	9/6/16	9/6/31	155	420	2012 SCPPA RFP
RE Cinco Solar	PPA/Own	8/23/16	8/23/22	60	182	2012 SCPPA RFP
Beacon Solar Project Site 1	PPA/Own	4/28/17	4/28/24	56	138	2013 DWP RFP
Beacon Solar Project Site 2	PPA/Own	12/15/17	12/15/24	48	118	2013 DWP RFP
Beacon Solar Project Site 3	PPA/Own	12/30/16	12/30/23	56	138	2013 DWP RFP
Beacon Solar Project Site 4	PPA/Own	12/9/16	12/9/23	50	123	2013 DWP RFP
Beacon Solar Project Site 5	PPA/Own	12/8/17	12/8/24	40	99	2013 DWP RFP
Moapa Southern Paiute Solar	PPA/Own	12/8/16	12/8/26	250	618	2011 SCPPA RFP
Ormesa Geothermal	PPA	11/30/17		30	250	2014 SCPPA RFP
NV Geothermal Portfolio	PPA	12/1/17		36	300	2016 SCPPA RFP
ARP Loyalton Biomass	PPA	4/30/18		8.9	71.5	5 year contract
Total				2,777	8,142	
Projects Under Construction						
DWP Built Solar (In-Basin)	Own	2018-2022		33.9	59.3	Budgeted
Community Solar Program	Own	2018-2020		3	5.3	
Solar Customer Net Metered	Own (REC's only)	2018-2030		124.0	204.6	RECs not RPS Eligible Currently
Solar Feed-In-Tariff ^b	PPA	2018-2020		88.0	154.0	Budgeted
Total				249	423	
Projects Planned						
Aqueduct PP Improvements	Own	7/1/23		4	30	Budgeted
Water System Hydro	Own	7/1/20		2	10	Budgeted
Springbok 3 Solar	PPA/Own	1/31/19	1/31/34	90	240	2015 SCPPA RFP
NV Geothermal Portfolio	PPA	12/31/18-12/31/22		131	1,090	2016 SCPPA RFP
Total				227	1,370	
Sub Total				3,253	9,936	
Potential Projects						
Wind Extensions	PPA	1/1/24		140.7	389.9	
GOVSR	Own	2024-2027		200	526	
SB859 Biomass PPA 2018	PPA	11/1/18		5.4	43.5	
Solar Feed-in-Tariff 300 Expanded	PPA	2019-2023		300	525	
Solar PPA 2020 M	PPA/Own	12/31/20		200	533	
Solar PPA 2021 E	PPA/Own	12/31/21		200	559	
Solar PPA 2021 M	PPA/Own	12/31/21		450	1,258	
Solar PPA 2024 CH	PPA/Own	12/31/24		150	399	
Solar PPA 2024 L	PPA/Own	12/31/24		150	477	
Geothermal PPA 2022 O	PPA	2022-2028		175	1,450	
Short-Term Market Purchases	PPA	2018		N/A	0.0	
Total				1,971	6,160	
Sub Total				1,971	6,160	
Grand Total				5,224	16,095	

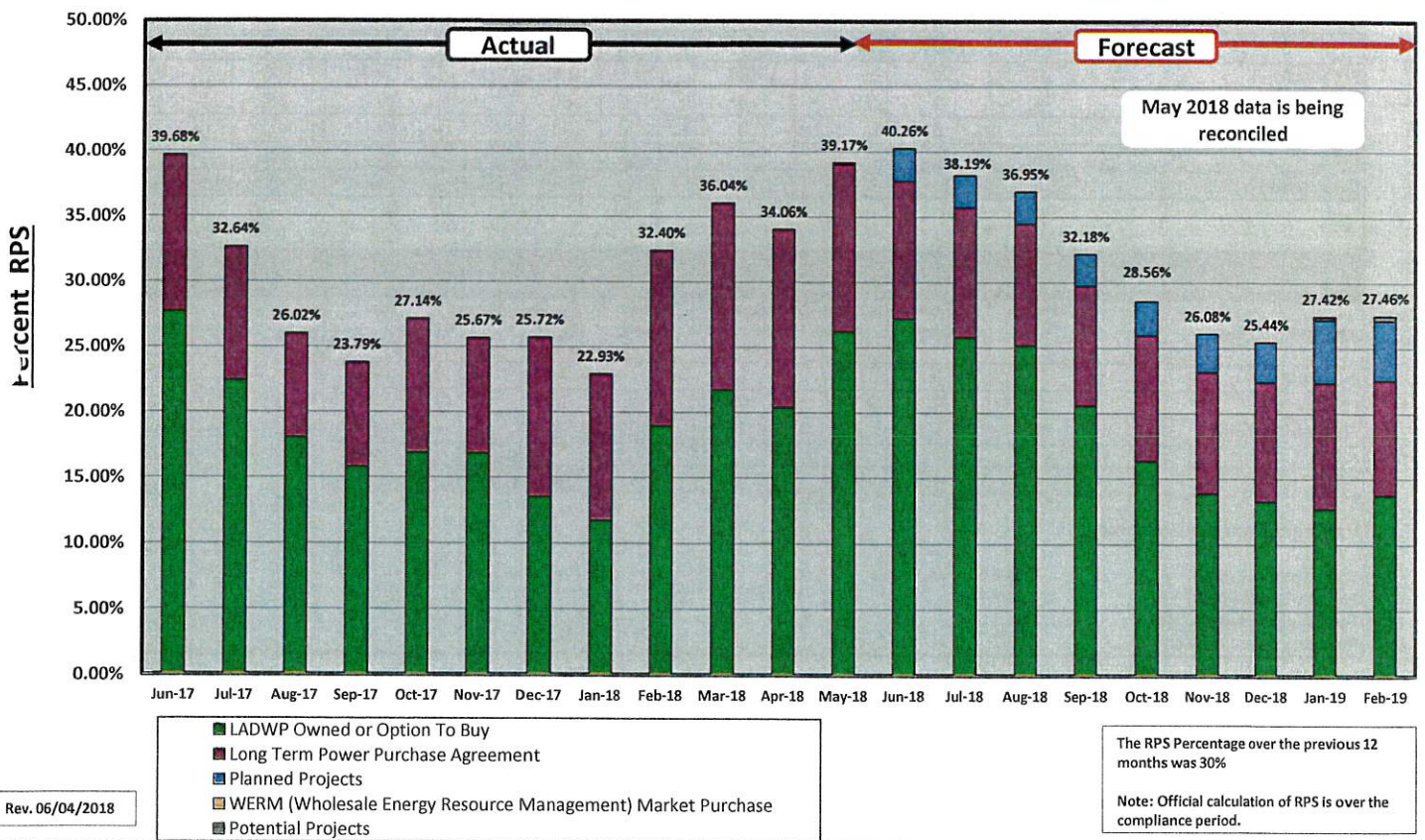
¹: Based on figures published as of September 2017.

²: Solar Feed-In-Tariff (Under construction) shares reduced due to expired Milestone 1 allocation.

¹⁰ The COD's under Projects In-Service are actual CODs. The COD's in Projects Under Construction, Projects Planned, and Potential Projects are Guaranteed CODs.

FORECAST RPS%, AS OF MAY 2018			
	2018	2019	2020
Projects In-service			
Small Hydro	2.53%	2.32%	2.11%
DWP Built Solar	0.05%	0.05%	0.05%
Solar CNM (SB1)	0.00%	0.00%	0.00%
SW Wyoming Wind	0.91%	0.90%	0.90%
Pebble Springs Wind	0.76%	0.67%	0.67%
MWD Sepulveda	0.10%	0.11%	0.11%
Willow Creek Wind	0.81%	0.73%	0.73%
Pine Tree Wind Power Project	1.10%	1.04%	1.04%
Milford Wind Phase I	1.80%	1.72%	1.72%
Milford Wind Phase II	0.91%	0.86%	0.86%
Windy Point Phase II	3.06%	2.88%	2.88%
Linden Wind Energy Project	0.68%	0.61%	0.61%
North Hollywood PS Power Plant	0.02%	0.02%	0.02%
Shell Renewable Biomethane	0.11%		
Adelanto Solar Facility	0.08%	0.08%	0.08%
Pine Tree Solar Facility	0.05%	0.05%	0.05%
Manzana Wind	0.48%	0.47%	0.47%
Don Campbell I Geothermal	0.56%	0.50%	0.50%
Solar Feed-In-Tariff	0.37%	0.36%	0.36%
Copper Mountain Solar 3	2.32%	2.25%	2.25%
Hudson Ranch	2.09%	1.99%	1.99%
Don Campbell II Geothermal	0.56%	0.59%	0.59%
Heber 1 Geothermal	0.96%	1.32%	1.32%
Springbok 1 Solar	1.38%	1.34%	1.34%
Springbok 2 Solar	1.92%	1.84%	1.84%
RE Cinco Solar	0.81%	0.78%	0.78%
Beacon Solar Project Site 1	0.64%	0.61%	0.61%
Beacon Solar Project Site 2	0.55%	0.52%	0.52%
Beacon Solar Project Site 3	0.64%	0.61%	0.61%
Beacon Solar Project Site 4	0.56%	0.53%	0.53%
Beacon Solar Project Site 5	0.49%	0.48%	0.48%
Moapa Southern Palute Solar	2.76%	2.68%	2.68%
Ormesa Geothermal	1.15%	1.10%	1.10%
NV Geothermal Portfolio	1.35%	1.32%	1.31%
ARP Loyalton Biomass	0.23%	0.32%	0.32%
Total	32.88%	31.65%	31.42%
Projects Under Construction			
DWP Built Solar (In-Basin)	0.04%	0.11%	0.20%
Community Solar Program	0.00%	0.00%	0.00%
Solar Customer Net Metered	0.00%	0.00%	0.00%
Solar Feed-In-Tariff ²	0.05%	0.19%	0.47%
Total	0.09%	0.29%	0.67%
Projects Planned			
Aqueduct PP Improvements			0.02%
Water System Hydro			
Springbok 3 Solar	0.06%	1.06%	1.05%
NV Geothermal Portfolio	0.00%	1.39%	1.39%
Total	0.06%	2.45%	2.46%
Total Expected	33.03%	34.39%	34.55%
Potential Projects			
Wind Extensions			
SOVSR			
SB859 Biomass PPA 2018	0.03%	0.19%	0.19%
Solar Feed-in-Tariff 300 Expanded		0.39%	1.16%
Solar PPA 2020 M			1.18%
Solar PPA 2021 E			
Solar PPA 2021 M			
Solar PPA 2023 CH			
Solar PPA 2023 L			
Geothermal PPA 2022 O			
Short-Term Market Purchases	0.00%		
Total	0.0%	0.6%	2.5%
	2018	2019	2020
Grand Total	33.1%	35.0%	37.1%
DWP Owned	4.5%	5.1%	6.8%
Option to Own	17.9%	17.3%	16.7%
DWP Owned/Option to Own	22.4%	22.4%	23.5%
PPA	10.6%	12.5%	13.6%
Total Master List Projects	33.1%	35.0%	37.1%
LADWP RPS Goals	34.0%	37.9%	39.0%
Forecasted Total Sales to Ultimate Customers (GWh)¹	21,900	22,678	22,681
	2018	2019	2020
Required GWh	7,446	8,595	8,846
Estimated GWh	7,240	7,932	8,409
Difference	-206	-663	-437
Compliance 3 Over/Under Quantity -1348 GWh			

Actual and Forecasted Monthly Renewable Energy From Generation and Purchases



Feed-in Tariff Program

May 2018 Status Report

Application Status

	# of Applications					MW AC				
	Total	Active	Waitlist	Cancelled	In-Service	Total	Active	Waitlist	Cancelled	In-Service
FIT 100 Total	397	45	0	314	38	273	12	0	241	20.2
FIT 50 Total	64	11	0	43	10	91	10	0	55	25.7
FIT Re-offer Total	50	44	0	4	2	45	40	0	5	0.8
Program Total	511	100	0	361	50	408.5	61.1	0.0	300.8	46.7

Application Status by System Size Category

	Small Projects (<150 kW)					Medium & Large (>150 kW)				
	Total	Active	Waitlist	Cancelled	In-Service	Total	Active	Waitlist	Cancelled	In-Service
FIT 100 Total	158	31	0	108	19	239	14	0	206	19
FIT 50 Total	4	0	0	4	0	60	11	0	39	10
FIT Re-offer Total	8	6	0	2	0	41	37	0	2	2
Total	170	37	0	114	19	340	62	0	247	31
Capacity (MW AC)	7.9	3.4	0.0	2.4	2.0	206.1	52.7	0.0	108.7	44.7

Active Projects Processing Status

Allocation Status	Pending	Technical Review	Interconnecti on Study	Awaiting Contract Documents	Contract Review	Contract Signed / Under	In-Service	Total
FIT 100 Total	0	0	7	2	1	39	38	87
FIT 50 Total	0	0	9	NA	NA	10	10	29
FIT Re-offer Total	0	0	28	2	0	9	2	41
Total	0	0	44	4	1	58	50	157

Program Capacity Summary

Total Authority (MW)	150.0
Total In-Service (MW)	46.7
Total Active Projects (MW)	61.1
Available Capacity (MW)	42.2

Solar Incentive Program

May 2018 Status Report

Solar Incentive Program Reservation Status									
	# of Applications			MW AC			Incentive Payments (\$000's)		
	Res	Non-Res	Total	Res	Non-Res	Total	Res	Non-Res	Total
Paid Reservations (SB1)	29,191	1,025	30,216	147.56	74.43	221.99	\$125,316	\$133,599	\$258,915
Unpaid Confirmed Reservations	209	1,292	1,501	9.10	26.37	35.47	\$2,342	\$18,101	\$20,443
Unconfirmed Reservations	0	1	1	0.00	0.00	0.00	\$0	\$1	\$1
Total	29,400	2,318	31,718	157	101	257	\$127,658	\$151,701	\$279,359
Lifetime Program Budget									\$288,000
Remaining Incentives									\$8,641

Paid Solar Installations									
Fiscal Year	# of Applications			MW AC			Incentive Payments (\$000's)		
	Res	Non-Res	Total	Res	Non-Res	Total	Res	Non-Res	Total
Pre-Senate Bill 1 (SB1) Paid Solar Installations									
Prior to 7/1/2007	862	78	940	3.30	7.43	10.73	\$16,407	\$40,612	\$57,019
Subtotal	862	78	940	3.30	7.43	10.73	\$16,407	\$40,612	\$57,019

SB1 Paid Solar Installations									
FY 2007/08	349	53	402	1.55	1.74	3.29	\$6,633	\$6,457	\$13,090
FY 2008/09	435	32	467	1.97	1.38	3.35	\$8,258	\$4,809	\$13,067
FY 2009/10	592	20	612	2.66	1.05	3.71	\$10,113	\$3,301	\$13,414
FY 2010/11	1,077	38	1,115	5.38	3.10	8.49	\$18,311	\$11,219	\$29,531
FY 2011/12	1,751	172	1,923	8.80	13.96	22.76	\$21,752	\$38,220	\$59,973
FY 2012/13	2,212	60	2,272	10.62	7.42	18.04	\$14,884	\$18,062	\$32,946
FY 2013/14	3,498	61	3,559	17.44	5.95	23.40	\$14,260	\$13,294	\$27,554
FY 2014/15	4,440	124	4,564	22.03	11.40	33.43	\$8,968	\$11,173	\$20,141
FY 2015/16	6,168	162	6,330	29.68	11.06	40.74	\$9,564	\$15,072	\$24,635
FY 2016/17	5,711	164	5,875	29.77	8.04	37.80	\$8,197	\$6,412	\$14,609
FY 2017/18	2,958	139	3,097	17.66	9.33	26.99	\$4,376	\$5,579	\$9,955
Subtotal	29,191	1,025	30,216	147.56	74.43	221.99	\$125,316	\$133,599	\$258,915

* Senate Bill 1 was adopted on July 1, 2007 by the State of California.

Total Paid Solar Installations	30,053	1,103	31,156	150.87	81.86	232.73	\$141,723	\$174,212	\$315,934
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Monthly Statistics for Current FY									
Month	# of Applications			MW AC			Incentive Amount (\$000's)		
	Res	Non-Res	Total	Res	Non-Res	Total	Res	Non-Res	Total
Confirmed Reservations									
Jul-17	395	11	406	2.21	0.28	2.49	\$539	\$137	\$676
Aug-17	322	19	341	1.88	0.96	2.84	\$459	\$605	\$1,064
Sep-17	362	12	374	2.16	0.22	2.38	\$532	\$154	\$686
Oct-17	451	17	468	2.87	1.56	4.43	\$727	\$683	\$1,409
Nov-17	358	22	380	2.29	1.91	4.20	\$561	\$659	\$1,220
Dec-17	431	7	438	2.81	0.15	2.96	\$683	\$43	\$725
Jan-18	349	27	376	2.12	1.97	4.09	\$534	\$703	\$1,237
Feb-18	337	8	345	2.28	0.15	2.43	\$632	\$74	\$706
Mar-18	282	10	292	2.23	0.74	2.98	\$538	\$603	\$1,141
Apr-18	316	19	335	1.93	1.25	3.18	\$477	\$884	\$1,361
May-18	347	11	358	2.15	0.42	2.57	\$524	\$162	\$685
Jun-18	42	1	43	0.26	0.06	0.32	\$61	\$18	\$79
Total	3,992	164	4,156	25.18	9.69	34.87	\$6,267	\$4,723	\$10,990

Paid Systems									
Jul-17	329	16	345	1.83	0.97	2.79	\$469	\$567	\$1,036
Aug-17	248	12	260	1.43	0.35	1.77	\$351	\$239	\$590
Sep-17	229	15	244	1.35	1.24	2.59	\$330	\$1,973	\$2,303
Oct-17	370	28	398	2.13	1.85	3.98	\$524	\$1,120	\$1,645
Nov-17	224	7	231	1.34	0.81	2.16	\$336	\$310	\$646
Dec-17	228	9	237	1.34	0.31	1.65	\$328	\$172	\$499
Jan-18	308	6	314	1.89	0.14	2.03	\$465	\$46	\$511
Feb-18	269	15	284	1.66	0.41	2.07	\$409	\$188	\$597
Mar-18	243	9	252	1.47	0.28	1.75	\$360	\$126	\$486
Apr-18	255	4	259	1.60	0.07	1.67	\$398	\$50	\$448
May-18	255	18	273	1.63	2.92	4.55	\$406	\$788	\$1,194
Jun-18	0	0	0	0.00	0.00	0.00	\$0	\$0	\$0
Total	2,958	139	3,097	17.66	9.33	26.99	\$4,376	\$5,579	\$9,955