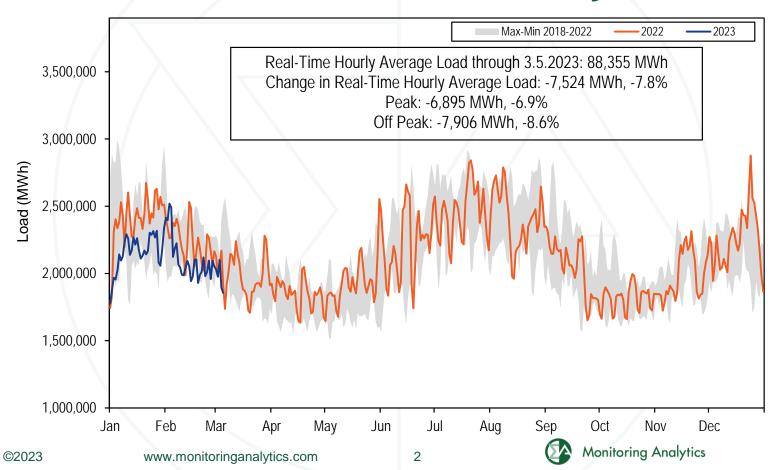
Market Monitor Report

MC Webinar 03.20.2023

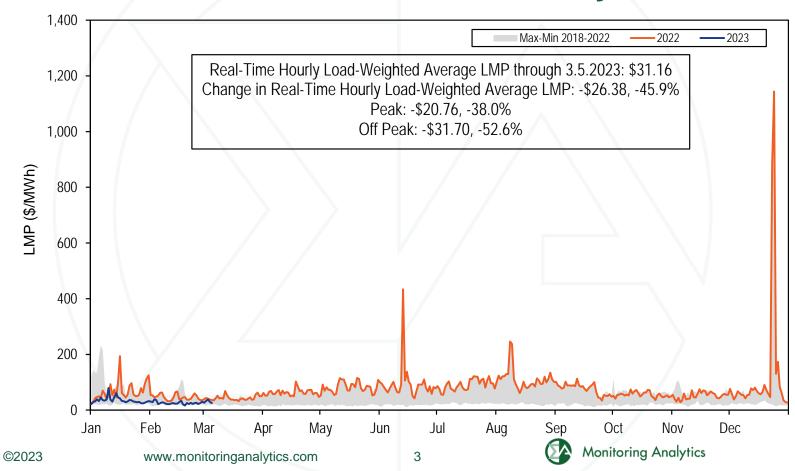
IMM



2023 YTD PJM Real-Time Daily Load



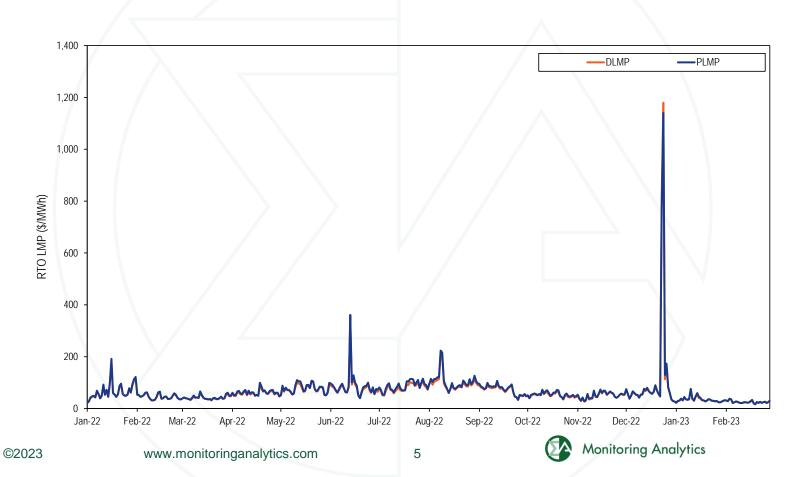
2023 YTD PJM Real-Time Daily LMP



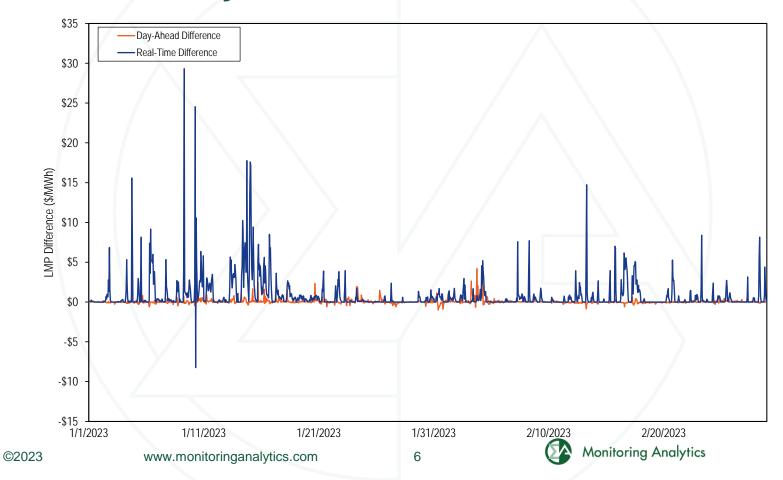
Monthly Average Load-Weighted DLMP and PLMP

		Day-Ahead Lo	oad-Weighte	d Average		Real-Time Lo	oad-Weighted	l Average				
					Percent				Percent			
Year	Month	DLMP	PLMP	Difference	Difference	DLMP	PLMP	Difference	Difference			
2022	Jan	\$64.57	\$64.80	\$0.22	0.3%	\$66.43	\$69.06	\$2.64	4.0%			
2022	Feb	\$49.96	\$50.35	\$0.39	0.8%	\$45.93	\$46.76	\$0.83	1.8%			
2022	Mar	\$45.25	\$45.50	\$0.25	0.6%	\$41.83	\$43.56	\$1.73	4.1%			
2022	Apr	\$64.10	\$64.18	\$0.08	0.1%	\$60.38	\$63.91	\$3.52	5.8%			
2022	May	\$83.17	\$83.24	\$0.06	0.1%	\$79.04	\$83.16	\$4.12	5.2%			
2022	Jun	\$90.24	\$90.54	\$0.29	0.3%	\$91.44	\$97.89	\$6.46	7.1%			
2022	Jul	\$96.07	\$96.38	\$0.32	0.3%	\$84.03	\$92.48	\$8.45	10.1%			
2022	Aug	\$106.18	\$106.07	(\$0.10)	(0.1%)	\$105.68	\$113.74	\$8.06	7.6%			
2022	Sep	\$82.86	\$82.80	(\$0.06)	(0.1%)	\$74.08	\$78.29	\$4.22	5.7%			
2022	Oct	\$58.30	\$58.37	\$0.07	0.1%	\$52.27	\$55.90	\$3.63	6.9%			
2022	Nov	\$56.29	\$55.24	(\$1.05)	(1.9%)	\$50.86	\$52.93	\$2.07	4.1%			
2022	Dec	\$93.02	\$93.39	\$0.37	0.4%	\$143.65	\$142.22	(\$1.42)	(1.0%)			
2022	Jan - Dec	\$75.35	\$75.44	\$0.08	0.1%	\$76.34	\$80.14	\$3.80	5.0%			
2023	Jan	\$36.53	\$36.58	\$0.05	0.1%	\$34.66	\$35.75	\$1.09	3.1%			
2023	Feb	\$31.16	\$31.22	\$0.06	0.2%	\$25.47	\$26.04	\$0.57	2.2%			
2023	Jan - Feb	\$33.98	\$34.04	\$0.06	0.2%	\$30.35	\$31.20	\$0.85	2.8%			

Daily Average Real-Time DLMP and PLMP



Hourly Difference: PLMP – DLMP



Fast Start Units as a Percent of Marginal Units

					All Fast				All Fast
Year	Month	CT	Diesel	Wind	Start Units	C1	- Diesel	Wind	Start Units
2022	Jan	1.3%	0.3%	0.2%	1.8%	4.9%	0.9%	0.2%	6.2%
2022	Feb	0.6%	0.2%	0.3%	1.1%	3.2%	0.5%	0.3%	4.0%
2022	Mar	0.5%	0.2%	0.4%	1.1%	3.4%	0.5%	0.4%	4.4%
2022	Apr	0.8%	0.1%	0.1%	1.2%	4.4%	0.3%	0.1%	5.0%
2022	May	1.4%	0.7%	0.1%	2.4%	6.6%	1.2%	0.1%	8.1%
2022	Jun	2.3%	0.3%	0.1%	2.6%	9.3%	0.8%	0.1%	10.2%
2022	Jul	2.7%	0.6%	0.1%	3.3%	16.3%	1.4%	0.0%	17.7%
2022	Aug	2.0%	0.4%	0.0%	2.4%	12.0%	1.3%	0.0%	13.3%
2022	Sep	0.8%	0.3%	0.1%	1.2%	5.6%	1.0%	0.1%	6.7%
2022	Oct	2.2%	0.2%	0.3%	2.6%	6.6%	0.9%	0.2%	7.7%
2022	Nov	1.3%	0.2%	0.2%	1.7%	5.1%	0.9%	0.2%	6.1%
2022	Dec	1.3%	0.7%	0.2%	2.2%	6.3%	1.5%	0.2%	8.0%
2022	Jan - Dec	1.4%	0.3%	0.2%	2.0%	7.0%	0.9%	0.1%	8.1%
2023	Jan	1.6%	0.5%	0.1%	2.1%	6.2%	2.8%	0.0%	9.0%
2023	Feb	0.9%	0.2%	0.0%	1.1%	3.1%	0.6%	0.0%	3.7%
2023	Jan - Feb	1.2%	0.3%	0.0%	1.6%	4.6%	1.7%	0.0%	6.4%

Fast Start Impacts: Zonal Average Differences

	2023 Jan - Feb								
		Day-A	head			Real-	Time		
	Average	Average		Percent	Average	Average		Percent	
Zone	DLMP	PLMP	Difference	Difference	DLMP	PLMP	Difference	Difference	
ACEC	\$30.00	\$30.03	\$0.03	0.1%	\$27.18	\$27.82	\$0.64	2.4%	
AEP	\$32.68	\$32.74	\$0.06	0.2%	\$29.79	\$30.57	\$0.79	2.6%	
APS	\$34.45	\$34.49	\$0.03	0.1%	\$30.79	\$31.68	\$0.88	2.9%	
ATSI	\$32.88	\$32.94	\$0.07	0.2%	\$29.75	\$30.55	\$0.79	2.7%	
BGE	\$38.71	\$38.76	\$0.05	0.1%	\$32.64	\$33.51	\$0.87	2.7%	
COMED	\$28.82	\$28.88	\$0.06	0.2%	\$27.02	\$27.74	\$0.72	2.7%	
DAY	\$34.05	\$34.11	\$0.06	0.2%	\$30.92	\$31.73	\$0.81	2.6%	
DUKE	\$32.99	\$33.05	\$0.06	0.2%	\$29.95	\$30.74	\$0.79	2.6%	
DOM	\$36.44	\$36.48	\$0.04	0.1%	\$32.29	\$33.15	\$0.87	2.7%	
DPL	\$31.51	\$31.63	\$0.13	0.4%	\$29.76	\$31.13	\$1.37	4.6%	
DUQ	\$32.22	\$32.28	\$0.07	0.2%	\$29.55	\$30.33	\$0.78	2.7%	
EKPC	\$32.61	\$32.67	\$0.06	0.2%	\$29.78	\$30.57	\$0.78	2.6%	
JCPLC	\$30.36	\$30.38	\$0.03	0.1%	\$27.42	\$28.06	\$0.64	2.3%	
MEC	\$33.70	\$33.74	\$0.04	0.1%	\$29.77	\$30.70	\$0.93	3.1%	
OVEC	\$32.10	\$32.16	\$0.06	0.2%	\$29.43	\$30.20	\$0.77	2.6%	
PECO	\$28.78	\$28.81	\$0.03	0.1%	\$26.32	\$26.92	\$0.59	2.3%	
PE	\$34.23	\$34.17	(\$0.06)	(0.2%)	\$29.69	\$30.51	\$0.83	2.8%	
PEPCO	\$37.70	\$37.74	\$0.04	0.1%	\$32.15	\$33.03	\$0.88	2.7%	
PPL	\$30.76	\$30.80	\$0.04	0.1%	\$27.54	\$28.18	\$0.64	2.3%	
PSEG	\$31.29	\$31.31	\$0.03	0.1%	\$27.77	\$28.42	\$0.65	2.3%	
REC	\$33.74	\$33.77	\$0.03	0.1%	\$29.55	\$30.24	\$0.69	2.3%	

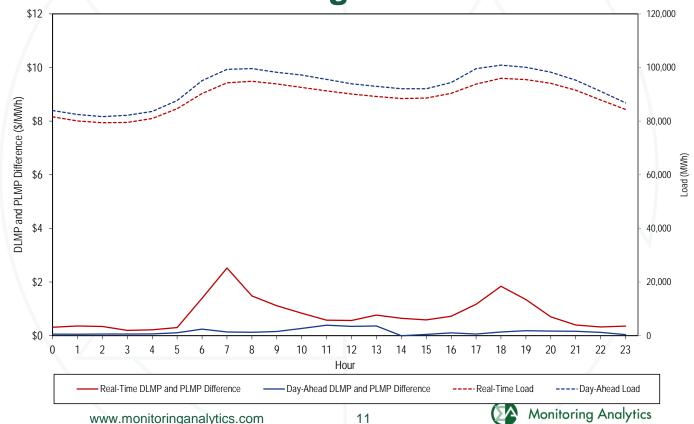
Fast Start Impacts: Hub Average Differences

				2022 10	n Cob			
				2023 Jai	n - reb			
		Day-A	head			Real-	Гime	
	Average	Average		Percent	Average	Average		Percent
Hub	DLMP	PLMP	Difference	Difference	DLMP	PLMP	Difference	Difference
AEP GEN HUB	\$31.84	\$31.90	\$0.06	0.2%	\$29.15	\$29.92	\$0.77	2.6%
AEP-DAYTON HUB	\$32.17	\$32.23	\$0.06	0.2%	\$29.47	\$30.25	\$0.78	2.6%
ATSI GEN HUB	\$32.04	\$32.11	\$0.07	0.2%	\$28.94	\$29.73	\$0.78	2.7%
CHICAGO GEN HUB	\$28.48	\$28.54	\$0.06	0.2%	\$26.64	\$27.35	\$0.71	2.7%
CHICAGO HUB	\$28.91	\$28.96	\$0.06	0.2%	\$27.11	\$27.84	\$0.73	2.7%
DOMINION HUB	\$35.42	\$35.47	\$0.05	0.1%	\$31.34	\$32.19	\$0.84	2.7%
EASTERN HUB	\$31.85	\$31.95	\$0.11	0.3%	\$29.59	\$30.91	\$1.32	4.5%
N ILLINOIS HUB	\$28.74	\$28.79	\$0.06	0.2%	\$26.94	\$27.66	\$0.72	2.7%
NEW JERSEY HUB	\$30.74	\$30.77	\$0.03	0.1%	\$27.53	\$28.17	\$0.64	2.3%
OHIO HUB	\$32.02	\$32.08	\$0.06	0.2%	\$29.36	\$30.13	\$0.77	2.6%
WEST INT HUB	\$33.49	\$33.55	\$0.06	0.2%	\$30.03	\$30.84	\$0.80	2.7%
WESTERN HUB	\$35.23	\$35.22	(\$0.02)	(0.0%)	\$30.39	\$31.19	\$0.80	2.6%

Zonal PLMP-DLMP Difference Frequency

					2023 Jan - Feb					
Zone	< (\$50)	(\$50) to (\$10)	(\$10) to \$0	\$0	\$0 to \$10	\$10 to \$20	\$20 to \$50	\$50 to \$100	\$100 to \$200	>= \$200
PJM-RTO	0.0%	0.0%	0.4%	56.0%	42.3%	1.0%	0.3%	0.0%	0.0%	0.0%
ACEC	0.0%	0.0%	5.3%	56.4%	37.0%	0.9%	0.2%	0.0%	0.0%	0.0%
AEP	0.0%	0.0%	0.7%	56.5%	41.5%	1.0%	0.3%	0.0%	0.0%	0.0%
APS	0.0%	0.0%	0.7%	56.3%	41.5%	1.1%	0.3%	0.0%	0.0%	0.0%
ATSI	0.0%	0.0%	0.6%	56.1%	42.0%	1.0%	0.3%	0.0%	0.0%	0.0%
BGE	0.0%	0.0%	4.3%	56.0%	38.1%	1.1%	0.4%	0.1%	0.0%	0.0%
COMED	0.0%	0.0%	1.1%	56.6%	41.1%	0.8%	0.3%	0.0%	0.0%	0.0%
DAY	0.0%	0.0%	0.6%	56.3%	41.7%	1.0%	0.3%	0.0%	0.0%	0.0%
DUKE	0.0%	0.0%	0.7%	56.5%	41.5%	0.9%	0.3%	0.0%	0.0%	0.0%
DOM	0.0%	0.0%	2.0%	56.3%	40.1%	1.1%	0.3%	0.1%	0.0%	0.0%
DPL	0.0%	0.0%	6.9%	56.4%	34.8%	0.9%	0.3%	0.4%	0.4%	0.0%
DUQ	0.0%	0.0%	0.7%	56.1%	41.9%	1.0%	0.3%	0.0%	0.0%	0.0%
EKPC	0.0%	0.0%	0.8%	56.4%	41.5%	0.9%	0.3%	0.0%	0.0%	0.0%
JCPLC	0.0%	0.0%	4.0%	56.4%	38.5%	0.9%	0.2%	0.0%	0.0%	0.0%
MEC	0.0%	0.0%	2.0%	55.9%	40.2%	1.5%	0.4%	0.0%	0.0%	0.0%
OVEC	0.0%	0.0%	0.9%	56.5%	41.3%	0.9%	0.3%	0.0%	0.0%	0.0%
PECO	0.0%	0.0%	6.9%	56.3%	35.6%	0.9%	0.2%	0.0%	0.0%	0.0%
PE	0.0%	0.0%	0.7%	55.9%	42.0%	1.1%	0.3%	0.0%	0.0%	0.0%
PEPCO	0.0%	0.0%	2.5%	56.3%	39.6%	1.1%	0.4%	0.1%	0.0%	0.0%
PPL	0.0%	0.0%	4.3%	56.0%	38.5%	0.8%	0.2%	0.0%	0.0%	0.0%
PSEG	0.0%	0.0%	3.5%	56.3%	39.1%	0.9%	0.2%	0.0%	0.0%	0.0%
REC	0.0%	0.0%	3.3%	56.1%	39.4%	0.9%	0.3%	0.0%	0.0%	0.0%

Hourly Average Load and LMP Difference: Jan through Feb 2023



©2023

Real-Time Load-Weighted Average LMP

		202	2			202	3	
				Percent				Percent
	Off Peak	On Peak	Difference	Difference	Off Peak	On Peak	Difference	Difference
Jan	\$74.99	\$62.54	(\$12.46)	(16.6%)	\$33.20	\$38.53	\$5.32	16.0%
Feb	\$45.70	\$47.86	\$2.16	4.7%	\$23.45	\$28.67	\$5.22	22.3%
Mar	\$41.58	\$45.41	\$3.83	9.2%				
Apr	\$55.93	\$71.89	\$15.96	28.5%				
May	\$66.12	\$100.85	\$34.73	52.5%				
Jun	\$61.63	\$126.83	\$65.20	105.8%				
Jul	\$71.83	\$114.14	\$42.31	58.9%				
Aug	\$85.89	\$136.31	\$50.42	58.7%				
Sep	\$66.36	\$89.76	\$23.40	35.3%				
Oct	\$47.61	\$64.50	\$16.90	35.5%				
Nov	\$45.48	\$60.50	\$15.01	33.0%				
Dec	\$153.54	\$129.51	(\$24.03)	(15.7%)				

RTO Reserve MW

Real-time market clearing

		Synchronized	Nonsynchronized	Total Primary	Secondary	Total Thirty-Minute
Year	Month	Reserve MW	Reserve MW	Reserve MW	Reserve MW	Reserve MW
2022	Oct	1,832	955	2,787	1,843	4,630
2022	Nov	1,822	1,012	2,834	1,331	4,165
2022	Dec	1,900	965	2,865	1,131	3,996
2023	Jan	1,935	861	2,796	1,100	3,895
2023	Feb	1,975	718	2,693	2,295	4,988

Day-ahead market clearing

		Synchronized	Nonsynchronized	Total Primary	Secondary	Total Thirty-Minute
Year	Month	Reserve MW	Reserve MW	Reserve MW	Reserve MW	Reserve MW
2022	Oct	2,078	1,650	3,728	8,264	11,992
2022	Nov	2,128	1,080	3,207	8,867	12,075
2022	Dec	1,993	1,324	3,317	10,425	13,742
2023	Jan	1,904	1,404	3,309	11,941	15,249
2023	Feb	1,889	1,311	3,200	16,793	19,993

MAD Reserve MW

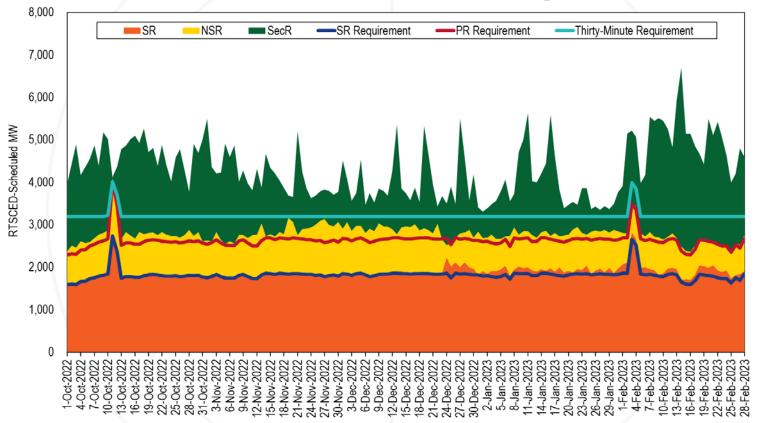
Real-time market clearing

		Synchronized	Nonsynchronized	Total Primary	Secondary	Total Thirty-Minute
Year	Month	Reserve MW	Reserve MW	Reserve MW	Reserve MW	Reserve MW
2022	Oct	1,831	810	2,641	NA	NA
2022	Nov	1,820	857	2,677	NA	NA
2022	Dec	1,896	823	2,719	NA	NA
2023	Jan	1,933	792	2,725	NA	NA
2023	Feb	1,955	673	2,628	NA	NA

Day-ahead market clearing

		Synchronized	Nonsynchronized	Total Primary	Secondary	Total Thirty-Minute
Year	Month	Reserve MW	Reserve MW	Reserve MW	Reserve MW	Reserve MW
2022	Oct	1,926	815	2,740	NA	NA
2022	Nov	1,994	930	2,924	NA	NA
2022	Dec	1,941	1,062	3,004	NA	NA
2023	Jan	1,891	1,119	3,009	NA	NA
2023	Feb	1.874	992	2.866	NA	NA

Real-Time Reserves and Requirements



Reserve Settlements by Month

			Total Day-Ahead	Total Balancing	Total LOC	Total Shortfall	Total
Product	Year	Month	Credits	MCP Credits	Credits	Charge	Credits
	2022	Oct	676,211	(67,992)	1,708,506	19,273	2,297,451
Synchronized	2022	Nov	2,275,752	(121,388)	1,353,121	14,882	3,492,603
Synchronized	2022	Dec	4,874,437	(13,021,113)	12,502,914	13,897,137	(9,540,899)
Reserve	2023	Jan	505,419	(114,061)	983,619	335,995	1,038,982
	2023	Feb	735,351	99,577	495,474	0	1,330,401
	2022	Oct	137,051	(13,639)	1,051	NA	124,464
Noncynobropized	2022	Nov	395,965	1,731	0	NA	397,696
Nonsynchronized	2022	Dec	292,838	(24,666,147)	604,197	NA	(23,769,112)
Reserve	2023	Jan	73,610	(155,466)	4,850	NA	(77,007)
	2023	Feb	72,133	(113,200)	31,094	NA	(9,973)
	2022	Oct	0	0	61,173	0	61,173
Cocondon	2022	Nov	0	0	10,667	0	10,667
Secondary Reserve	2022	Dec	0	(3,780,478)	4,451,194	41,440	670,716
	2023	Jan	0	0	5,150	0	5,150
	2023	Feb	0	0	34,129	0	34,129

- For secondary reserve, the shortfall charge is part of the balancing MCP credit. For synchronized reserve, it is separate.
- The SecR effective shortfall charge for December was previously reported as \$0. This changed with the February billing cycle.

Monitoring Analytics, LLC
2621 Van Buren Avenue
Suite 160
Eagleville, PA
19403
(610) 271-8050

MA@monitoringanalytics.com www.MonitoringAnalytics.com

©2023