



Energy Cost Monitoring (ECM)

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1 Recent Estimates

1.1 Growth Rates

	Quarter-over-quarter growth rate			Month-over-month growth rate		
	2022Q4	2023Q1	2023Q2	June, 2023	July, 2023	August, 2023
a. RUEC (Real Unit Energy Cost) (=b-c=e-d)	1.9%	-5.5%	-11.2%	-3.1%	-0.6%	-2.5%
b. Real Energy Price (=b1-b2)	3.6%	-3.8%	-8.1%	-2.1%	-2.1%	-1.5%
b1. Energy Price	4.8%	-2.5%	-6.7%	-1.7%	-1.8%	-1.2%
b2. GDP Price	1.2%	1.4%	1.6%	0.4%	0.2%	0.4%
c. Energy Productivity (=c1-c2)	1.6%	1.8%	3.4%	1.0%	-1.5%	1.0%
c1. Real GDP	0.1%	0.8%	1.2%	-0.4%	0.0%	0.0%
c2. Energy Consumption	-1.6%	-1.0%	-2.2%	-1.4%	1.6%	-1.0%
d. Nominal GDP (=b2+c1)	1.2%	2.2%	2.7%	0.0%	0.2%	0.3%
e. Energy Cost (=b1+c2)	3.2%	-3.5%	-8.7%	-3.1%	-0.3%	-2.2%

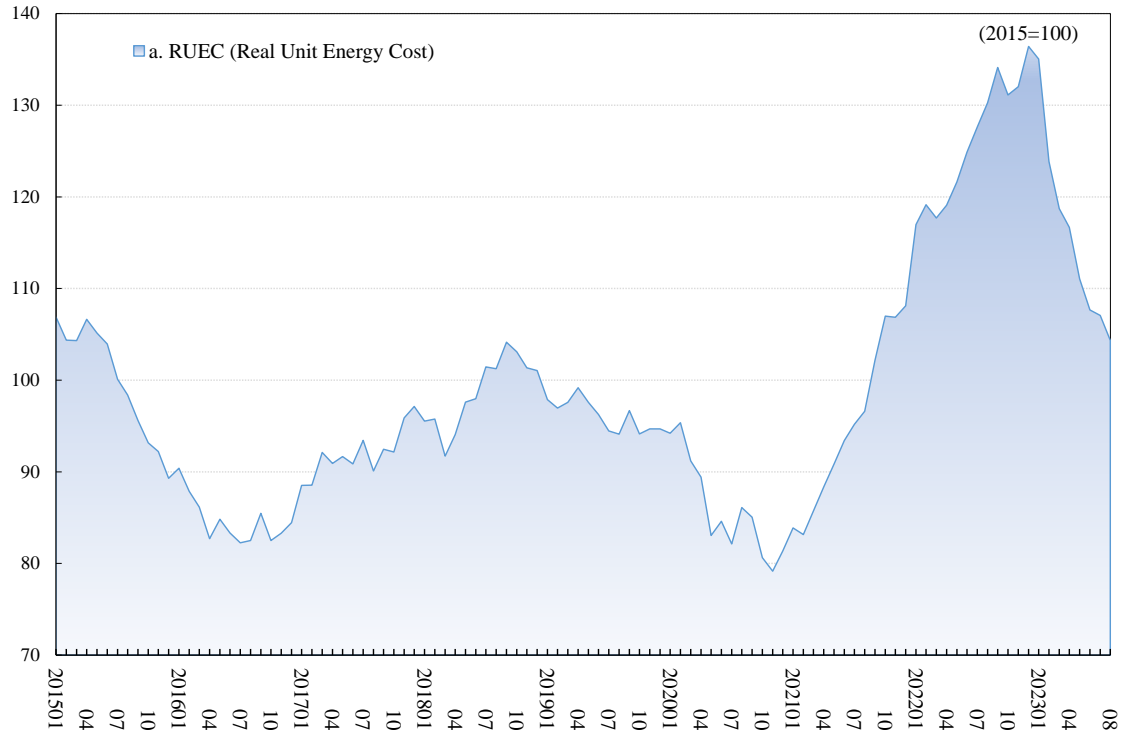
Unit: %. Notes: The most recent month is the forecasts, the previous month is the preliminary estimates, and the last two months or earlier are the final estimates. The aggregate volume indices of real GDP and energy consumption are measured using the translog index, based on the prices and volumes measured at 36 industries and 21 types of energy, respectively. The aggregate price indices of real GDP and energy consumption are defined implicitly.

1.2 Indices

	Quarterly index			Monthly index		
	2022Q4	2023Q1	2023Q2	June, 2023	July, 2023	August, 2023
a. RUEC (Real Unit Energy Cost) (=b/c=e/d)	133.2	125.8	111.8	107.7	107.1	104.3
b. Real Energy Price (=b1/b2)	146.0	140.4	129.0	124.8	122.2	120.4
b1. Energy Price	149.7	145.9	136.1	132.1	129.7	128.1
b2. GDP Price	102.5	103.9	105.5	105.8	106.1	106.4
c. Energy Productivity (=c1/c2)	109.5	111.5	115.3	115.9	114.1	115.3
c1. Real GDP	101.8	102.6	103.8	103.6	103.7	103.6
c2. Energy Consumption	92.9	92.0	90.0	89.4	90.8	89.9
d. Nominal GDP (=b2*c1)	104.3	106.6	109.6	109.7	109.9	110.3
e. Energy Cost (=b1*c2)	139.0	134.2	122.5	118.1	117.7	115.1

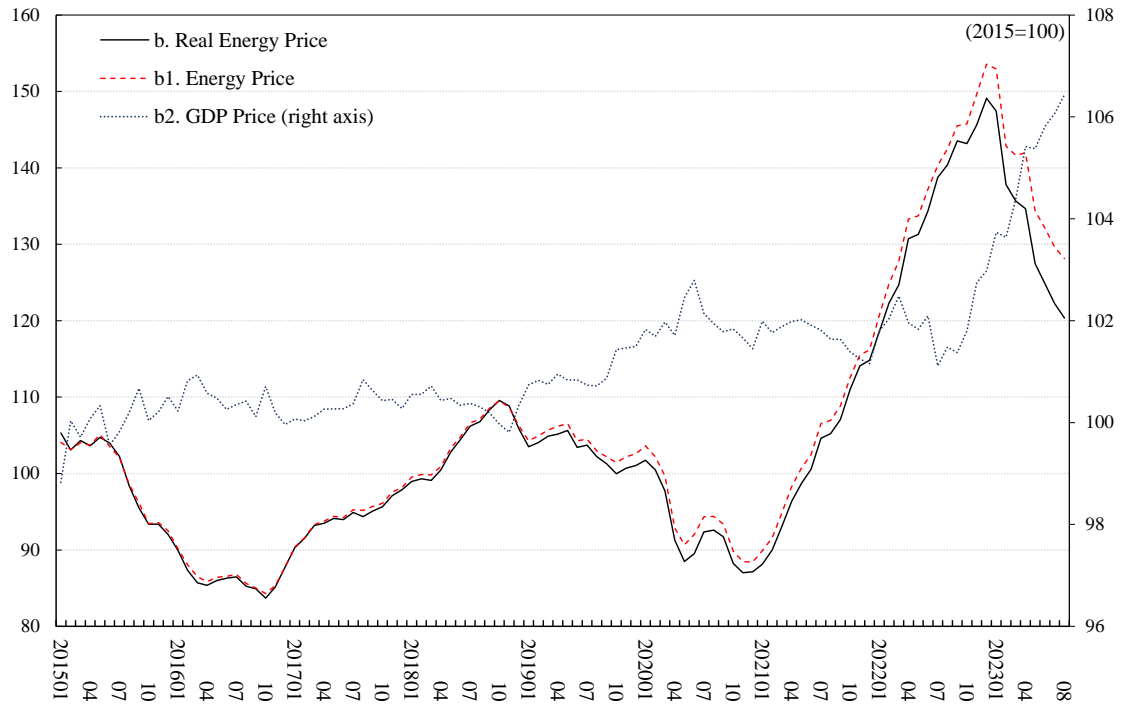
Unit: 2015 average=100.

2 Monthly RUEC (Real Unit Energy Cost)



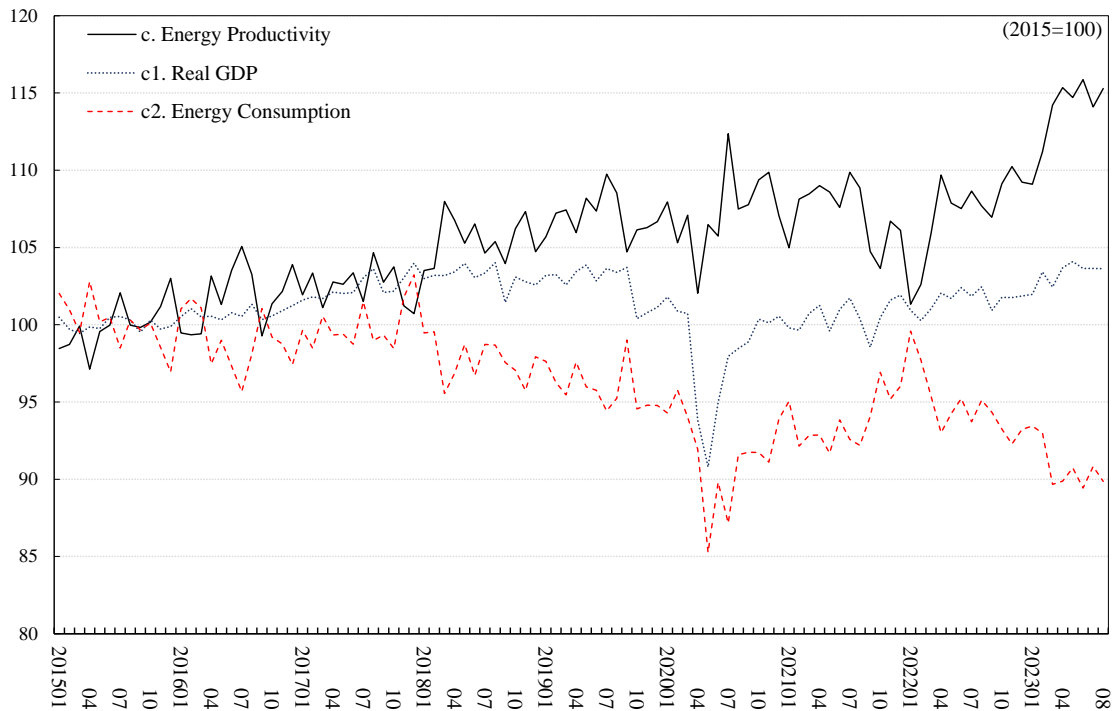
Unit: 2015 average=100. Note: Observation period is from January 2015 to August 2023.

3 Monthly Real Energy Price



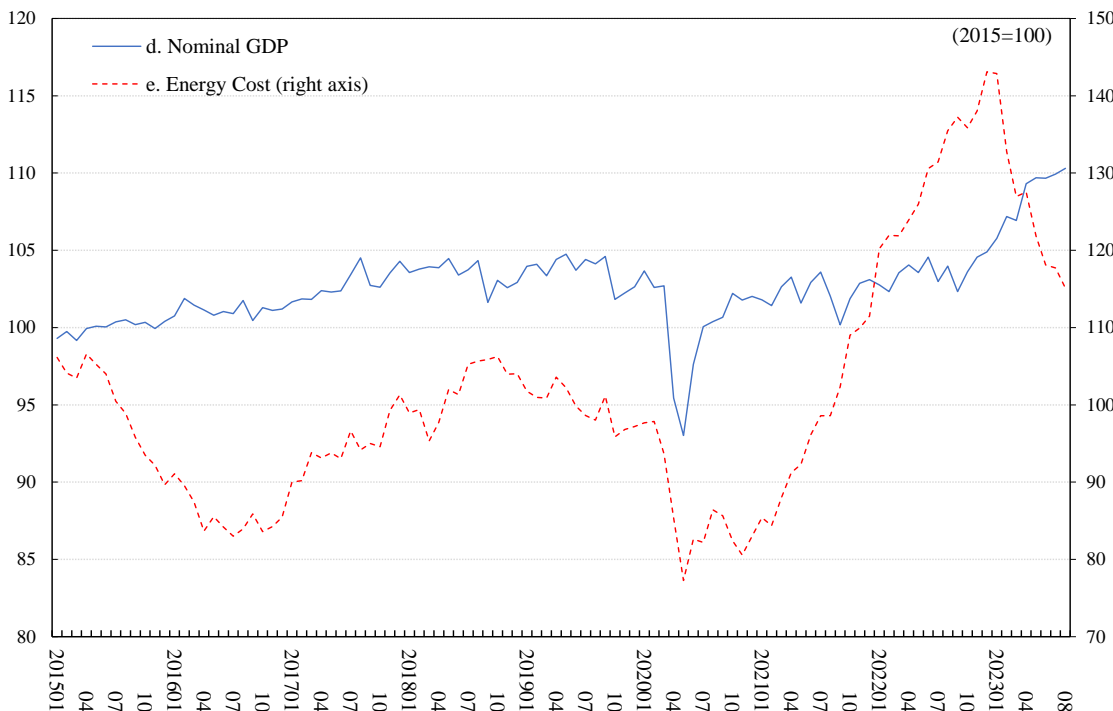
Unit: 2015 average=100. Note: Observation period is from January 2015 to August 2023.

4 Monthly Real GDP and Energy Productivity



Unit: 2015 average=100. Note: Observation period is from January 2015 to August 2023.

5 Monthly Nominal GDP and Energy Cost



Unit: 2015 average=100. Note: Observation period is from January 2015 to August 2023.

6 Data Table

	a. RUEC (Real Unit Energy Cost)							d. Nominal GDP	e. Energy Cost
	b. Real Energy Price			c. Energy Productivity					
		b1. Energy Price	b2. GDP Price		c1. Real GDP	c2. Energy Consumption			
2015	100.0 (.074)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
2016	84.7 (.063)	86.1	86.5	100.4	101.8	100.7	99.0	81.7	
2017	92.0 (.068)	94.3	94.6	100.3	102.5	102.4	100.0	94.6	
2018	98.7 (.073)	104.2	104.5	100.3	105.5	103.1	97.7	102.1	
2019	96.2 (.071)	102.9	103.9	101.0	107.0	102.7	96.0	99.7	
2020	86.1 (.064)	92.4	94.2	101.9	107.4	98.3	91.5	86.2	
2021	95.1 (.070)	102.0	103.7	101.7	107.2	100.6	93.8	97.3	
2022	125.9 (.093)	135.0	137.7	102.0	107.2	101.6	94.8	130.5	
2020 Q1	93.6 (.069)	100.0	101.8	101.8	106.8	101.1	94.7	96.4	
2020 Q2	85.7 (.063)	89.8	91.9	102.3	104.7	93.2	89.0	81.7	
2020 Q3	84.4 (.063)	92.2	94.1	102.0	109.2	98.4	90.1	84.7	
2020 Q4	80.4 (.060)	87.5	88.9	101.7	108.8	100.3	92.3	82.0	
2021 Q1	84.3 (.062)	90.4	92.1	101.9	107.2	100.1	93.3	85.9	
2021 Q2	90.9 (.067)	98.5	100.5	102.0	108.4	100.6	92.8	93.2	
2021 Q3	97.9 (.073)	105.7	107.5	101.7	107.8	100.2	93.0	99.8	
2021 Q4	107.3 (.079)	113.3	114.7	101.3	105.5	101.3	96.1	110.1	
2022 Q1	117.9 (.087)	121.8	124.4	102.1	103.3	100.7	97.6	121.3	
2022 Q2	121.9 (.090)	132.1	134.8	102.0	108.4	102.0	94.2	126.8	
2022 Q3	130.7 (.097)	140.9	142.8	101.3	107.8	101.7	94.4	134.7	
2022 Q4	133.2 (.099)	146.0	149.7	102.5	109.5	101.8	92.9	139.0	
2023 Q1	125.8 (.093)	140.4	145.9	103.9	111.5	102.6	92.0	134.2	
2023 Q2	111.8 (.083)	129.0	136.1	105.5	115.3	103.8	90.0	122.5	
2018 01	95.5 (.071)	99.0	99.5	100.6	103.5	103.0	99.5	99.0	
2018 02	95.8 (.071)	99.3	99.9	100.6	103.7	103.2	99.5	99.4	
2018 03	91.7 (.068)	99.1	99.8	100.7	108.0	103.2	95.5	95.3	
2018 04	94.1 (.070)	100.5	100.9	100.4	106.8	103.4	96.9	97.7	
2018 05	97.6 (.072)	102.8	103.3	100.5	105.3	104.0	98.7	102.0	
2018 06	98.0 (.073)	104.4	104.8	100.3	106.5	103.1	96.7	101.3	
2018 07	101.4 (.075)	106.2	106.6	100.4	104.6	103.3	98.7	105.2	
2018 08	101.3 (.075)	106.8	107.1	100.3	105.4	104.0	98.7	105.7	
2018 09	104.2 (.077)	108.4	108.6	100.2	104.0	101.4	97.6	105.9	
2018 10	103.1 (.076)	109.6	109.5	100.0	106.2	103.1	97.0	106.3	
2018 11	101.3 (.075)	108.8	108.7	99.8	107.3	102.8	95.7	104.0	
2018 12	101.6 (.075)	105.9	106.3	100.3	104.7	102.6	97.9	104.0	
2019 01	97.9 (.072)	103.5	104.3	100.7	105.7	103.2	97.6	101.8	
2019 02	97.0 (.072)	104.0	104.9	100.8	107.2	103.2	96.3	101.0	
2019 03	97.6 (.072)	104.9	105.7	100.7	107.4	102.6	95.5	100.9	
2019 04	99.2 (.073)	105.2	106.2	101.0	106.0	103.4	97.6	103.6	
2019 05	97.6 (.072)	105.6	106.5	100.8	108.2	103.9	96.0	102.2	
2019 06	96.3 (.071)	103.4	104.3	100.8	107.4	102.8	95.8	99.8	
2019 07	94.4 (.070)	103.7	104.5	100.7	109.8	103.6	94.4	98.6	
2019 08	94.1 (.070)	102.2	103.0	100.7	108.5	103.4	95.2	98.0	
2019 09	96.7 (.072)	101.3	102.2	100.9	104.7	103.7	99.0	101.1	
2019 10	94.1 (.070)	100.0	101.4	101.4	106.1	100.4	94.6	95.9	
2019 11	94.7 (.070)	100.7	102.2	101.5	106.3	100.8	94.8	96.8	
2019 12	94.7 (.070)	101.1	102.6	101.5	106.7	101.1	94.8	97.2	
2020 01	94.2 (.070)	101.8	103.6	101.8	108.0	101.8	94.3	97.7	
2020 02	95.3 (.071)	100.5	102.2	101.7	105.3	100.9	95.8	97.8	
2020 03	91.2 (.068)	97.7	99.7	102.0	107.1	100.7	94.0	93.7	
2020 04	89.4 (.066)	91.3	92.9	101.7	102.0	93.8	91.9	85.3	
2020 05	83.1 (.062)	88.5	90.7	102.5	106.5	90.8	85.3	77.3	
2020 06	84.6 (.063)	89.5	92.0	102.8	105.7	95.0	89.8	82.6	
2020 07	82.1 (.061)	92.4	94.3	102.1	112.4	98.0	87.2	82.2	
2020 08	86.1 (.064)	92.6	94.4	101.9	107.5	98.5	91.6	86.4	
2020 09	85.1 (.063)	91.7	93.4	101.8	107.8	98.9	91.7	85.6	
2020 10	80.6 (.060)	88.2	89.9	101.8	109.4	100.4	91.7	82.4	
2020 11	79.2 (.059)	87.0	88.5	101.7	109.9	100.1	91.1	80.6	
2020 12	81.4 (.060)	87.1	88.4	101.5	107.1	100.5	93.9	83.0	
2021 01	83.9 (.062)	88.1	89.9	102.0	105.0	99.8	95.0	85.4	
2021 02	83.2 (.062)	90.0	91.6	101.8	108.1	99.7	92.1	84.3	
2021 03	85.7 (.063)	93.0	94.8	101.9	108.5	100.7	92.9	88.0	
2021 04	88.3 (.065)	96.4	98.3	102.0	109.0	101.2	92.9	91.2	
2021 05	90.8 (.067)	98.7	100.7	102.0	108.6	99.6	91.7	92.3	
2021 06	93.4 (.069)	100.6	102.5	101.9	107.6	101.0	93.8	96.1	
2021 07	95.2 (.070)	104.6	106.5	101.8	109.9	101.7	92.6	98.6	
2021 08	96.6 (.072)	105.2	107.0	101.6	108.9	100.4	92.2	98.6	
2021 09	102.2 (.076)	107.1	108.8	101.6	104.8	98.6	94.1	102.3	
2021 10	107.0 (.079)	111.0	112.5	101.4	103.6	100.5	96.9	109.0	
2021 11	106.9 (.079)	114.1	115.5	101.2	106.7	101.6	95.2	109.9	
2021 12	108.1 (.080)	114.8	116.1	101.2	106.1	101.9	96.0	111.5	
2022 01	117.0 (.087)	118.6	120.8	101.8	101.3	100.9	99.6	120.2	
2022 02	119.1 (.088)	122.3	124.8	102.0	102.6	100.3	97.7	121.9	
2022 03	117.7 (.087)	124.7	127.8	102.5	105.9	101.0	95.4	121.9	
2022 04	119.1 (.088)	130.7	133.3	102.0	109.7	102.0	93.0	123.9	
2022 05	121.6 (.090)	131.3	133.7	101.8	107.9	101.7	94.2	126.0	
2022 06	124.9 (.092)	134.4	137.2	102.1	107.5	102.4	95.2	130.6	
2022 07	127.6 (.095)	138.8	140.3	101.1	108.7	101.9	93.7	131.5	
2022 08	130.3 (.096)	140.4	142.5	101.5	107.7	102.5	95.1	135.5	
2022 09	134.1 (.099)	143.5	145.5	101.4	107.0	100.9	94.4	137.2	
2022 10	131.1 (.097)	143.2	145.8	101.8	109.1	101.8	93.2	135.9	
2022 11	132.0 (.098)	145.6	149.6	102.7	110.2	101.8	92.3	138.0	
2022 12	136.4 (.101)	149.1	153.6	103.0	109.2	101.9	93.2	143.1	
2023 01	135.0 (.100)	147.4	153.0	103.7	109.1	102.0	93.4	142.9	
2023 02	123.9 (.092)	137.8	142.8	103.6	111.2	103.4	93.0	132.8	
2023 03	118.7 (.088)	135.7	141.6	104.4	114.2	102.4	89.7	127.0	
2023 04	116.7 (.086)	134.7	142.0	105.4	115.4	103.7	89.9	127.6	
2023 05	111.1 (.082)	127.5	134.4	105.4	114.7	104.1	90.7	121.8	
2023 06	107.7 (.080)	124.8	132.1	105.8	115.9	103.6	89.4	118.1	
2023 07	107.1 (.079)	122.2	129.7	106.1	114.1	103.7	90.8	117.7	
2023 08	104.3 (.077)	120.4	128.1	106.4	115.3	103.6	89.9	115.1	

Unit: 2015 average=100. Note: The numbers in parentheses are the ratio of final energy consumption cost to GDP at current prices.