



# 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		
	2023Q2	2023Q3	2023Q4	October, 2023	November, 2023	December, 2023
a. RUEC (Real Unit Energy Cost) (=b-c=e-d)	-11.0%	-3.3%	-3.4%	-4.9%	0.4%	0.9%
b. Real Energy Price (=b1-b2)	-8.3%	-7.0%	-0.5%	0.6%	0.7%	0.9%
b1. Energy Price	-6.7%	-6.3%	-0.1%	1.0%	0.8%	1.0%
b2. GDP Price	1.7%	0.7%	0.4%	0.4%	0.1%	0.0%
c. Energy Productivity (=c1-c2)	3.1%	-3.8%	3.0%	5.8%	0.3%	0.1%
c1. Real GDP	0.9%	-0.7%	-0.3%	-0.1%	-0.5%	0.3%
c2. Energy Consumption	-2.1%	3.1%	-3.2%	-5.6%	-0.8%	0.2%
d. Nominal GDP (=b2*c1)	2.6%	0.0%	0.1%	0.3%	-0.4%	0.3%
e. Energy Cost (=b1+c2)	-8.7%	-3.3%	-3.3%	-4.6%	0.0%	1.2%

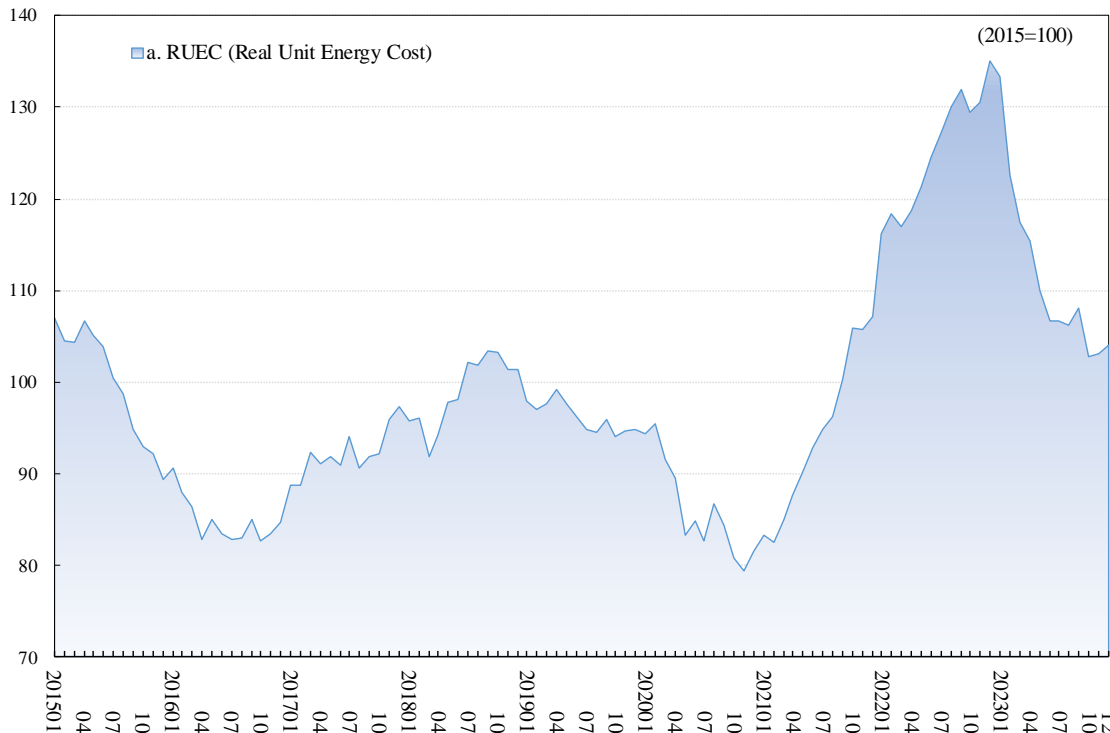
Unit: %. Notes: The most recent month is the forecasts, the previous month is the preliminary estimates, and the last two months or earlier are the final estimates. The aggregate volume indices of real GDP and energy consumption are measured using the translog index, based on the prices and volumes measured 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		
	2023Q2	2023Q3	2023Q4	October, 2023	November, 2023	December, 2023
a. RUEC (Real Unit Energy Cost) (=b/c=e/d)	110.7	107.0	103.3	102.7	103.1	104.1
b. Real Energy Price (=b1/b2)	128.9	119.9	119.3	118.4	119.2	120.4
b1. Energy Price	136.4	127.8	127.8	126.7	127.7	128.9
b2. GDP Price	105.8	106.6	107.0	106.9	107.1	107.1
c. Energy Productivity (=c1/c2)	116.4	112.0	115.4	115.2	115.5	115.6
c1. Real GDP	104.5	103.7	103.5	103.7	103.2	103.5
c2. Energy Consumption	89.8	92.6	89.6	90.1	89.3	89.5
d. Nominal GDP (=b2*c1)	110.6	110.6	110.8	110.9	110.5	110.8
e. Energy Cost (=b1*c2)	122.4	118.3	114.4	114.0	114.0	115.3

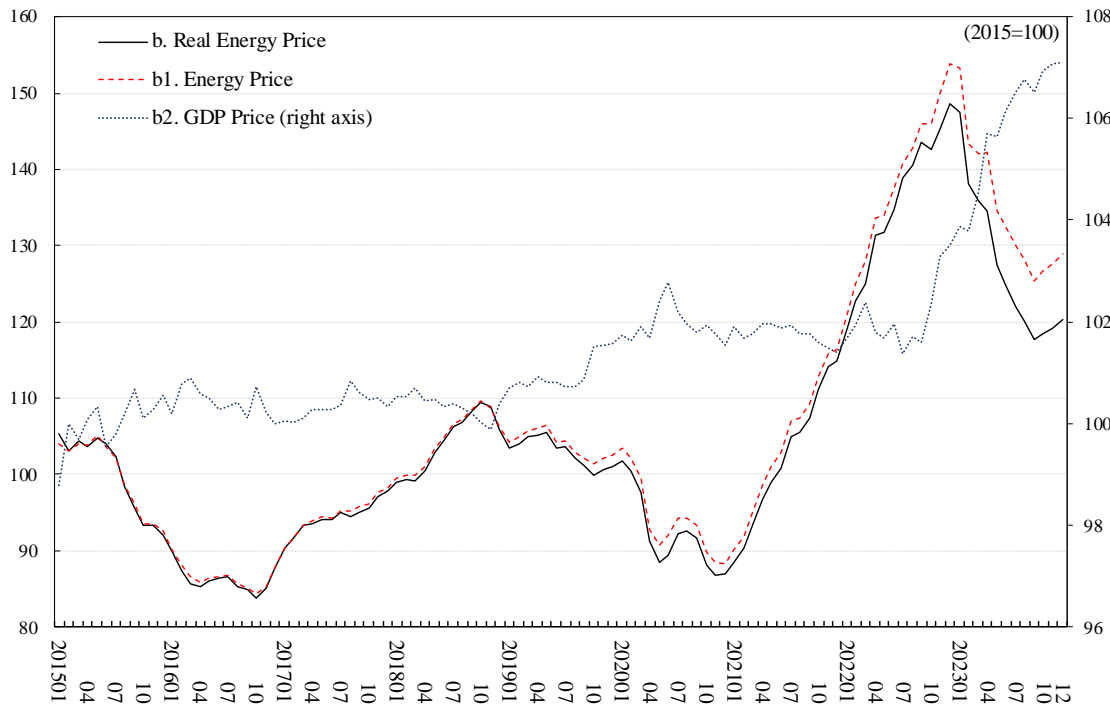
Unit: 2015 average=100.

2 Monthly RUEC (Real Unit Energy Cost)



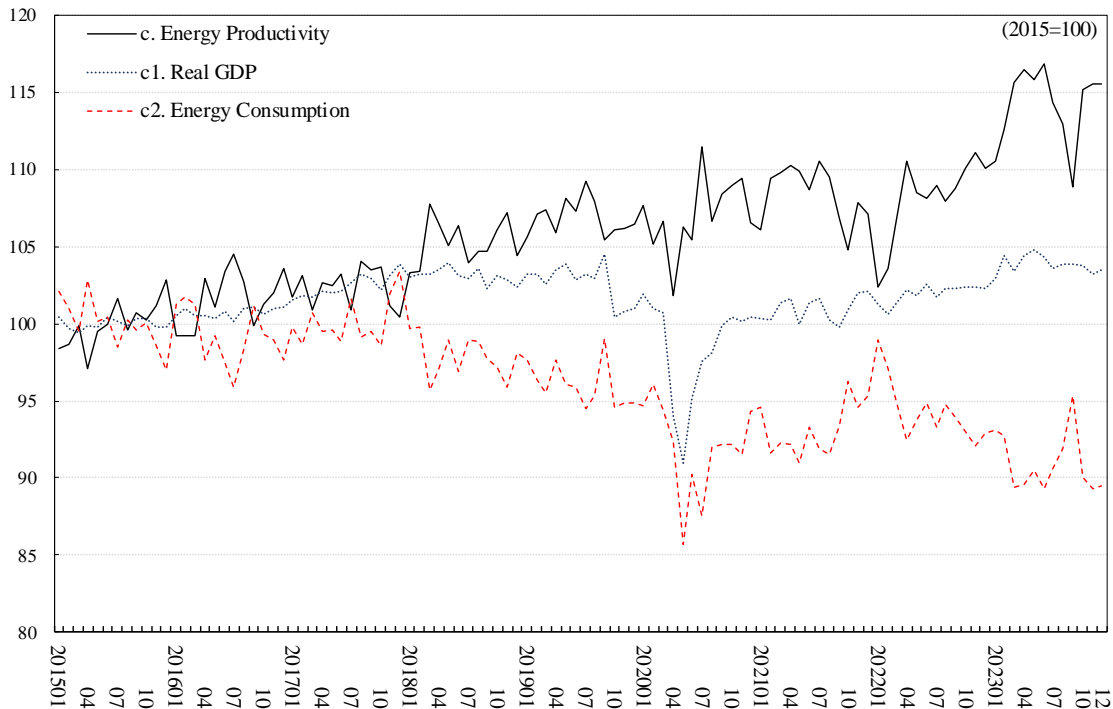
Unit: 2015 average=100. Note: Observation period is from January 2015 to December 2023.

3 Monthly Real Energy Price



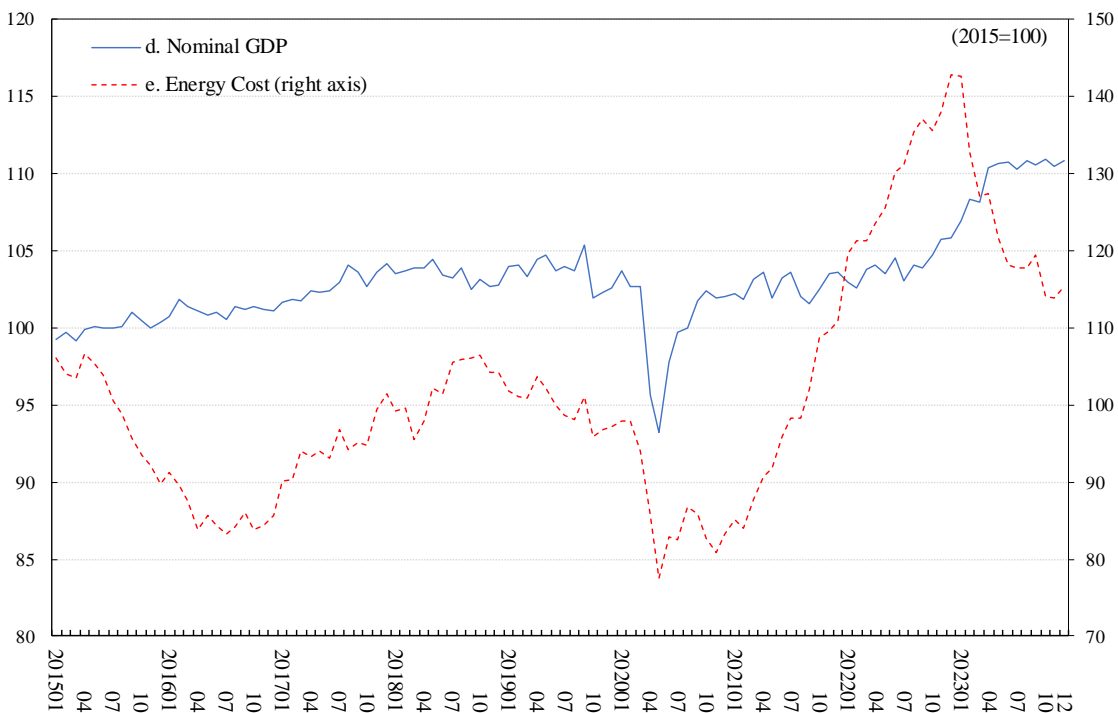
Unit: 2015 average=100. Note: Observation period is from January 2015 to December 2023.

4 Monthly Real GDP and Energy Productivity



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

5 Monthly Nominal GDP and Energy Cost



Unit: 2015 average=100. Note: Observation period is from January 2015 to December 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	84.8 (.063)	86.2	86.5	100.4	101.6	100.7	99.2	101.1	
2017	92.2 (.068)	94.3	94.6	100.3	102.3	102.4	100.1	102.8	
2018	99.0 (.073)	104.2	104.6	100.3	105.3	103.1	97.9	103.4	
2019	96.2 (.071)	102.9	103.9	101.0	106.9	102.7	96.0	103.7	
2020	86.2 (.064)	92.3	94.1	101.9	107.1	98.4	91.9	100.3	
2021	94.3 (.070)	102.2	104.0	101.8	108.4	101.0	93.2	102.7	
2022	125.1 (.093)	135.2	138.0	102.1	108.1	101.9	94.3	104.1	
2023	111.3 (.082)	127.1	134.5	105.9	114.2	103.8	90.9	109.9	
2020 Q1	93.8 (.069)	99.9	101.7	101.8	106.5	101.2	95.0	103.0	
2020 Q2	85.9 (.064)	89.8	91.9	102.3	104.5	93.4	89.4	95.5	
2020 Q3	84.6 (.063)	92.1	94.0	102.0	108.8	98.5	90.5	100.5	
2020 Q4	80.6 (.060)	87.3	88.8	101.7	108.3	100.4	92.6	102.1	
2021 Q1	83.6 (.062)	90.6	92.3	101.8	108.4	100.6	92.8	102.4	
2021 Q2	90.1 (.067)	98.9	100.8	101.9	109.6	101.0	92.1	103.0	
2021 Q3	97.1 (.072)	105.9	107.8	101.8	109.0	100.6	92.3	102.4	
2021 Q4	106.3 (.079)	113.3	115.1	101.5	106.6	101.7	95.4	103.2	
2022 Q1	117.1 (.087)	122.2	124.7	102.0	104.3	101.1	97.0	103.1	
2022 Q2	121.5 (.090)	132.6	135.1	101.8	109.1	102.2	93.7	104.0	
2022 Q3	129.8 (.096)	141.0	143.2	101.6	108.6	102.1	94.0	103.7	
2022 Q4	131.7 (.097)	145.5	150.0	103.1	110.4	102.3	92.7	105.5	
2023 Q1	124.4 (.092)	140.6	146.3	104.1	112.9	103.6	91.7	107.8	
2023 Q2	110.7 (.082)	128.9	136.4	105.8	116.4	104.5	89.8	110.6	
2023 Q3	107.0 (.079)	119.9	127.8	106.6	112.0	103.7	92.6	110.6	
2023 Q4	103.3 (.076)	119.3	127.8	107.0	115.4	103.5	89.6	110.8	
2020 01	94.4 (.070)	101.7	103.5	101.8	107.7	101.9	94.6	103.7	
2020 02	95.5 (.071)	100.4	102.1	101.6	105.1	101.0	96.1	102.7	
2020 03	91.5 (.068)	97.7	99.5	101.9	106.7	100.7	94.4	102.7	
2020 04	89.5 (.066)	91.2	92.8	101.7	101.8	94.0	92.3	95.6	
2020 05	83.2 (.062)	88.5	90.6	102.4	106.2	91.0	85.6	93.2	
2020 06	84.8 (.063)	89.5	92.0	102.8	105.4	95.2	90.2	97.8	
2020 07	82.7 (.061)	92.2	94.3	102.2	111.5	97.6	87.5	99.7	
2020 08	86.7 (.064)	92.5	94.3	102.0	106.6	98.1	92.0	100.0	
2020 09	84.4 (.063)	91.6	93.3	101.8	108.4	99.9	92.1	101.7	
2020 10	80.8 (.060)	88.1	89.8	101.9	109.0	100.4	92.1	102.4	
2020 11	79.3 (.059)	86.8	88.4	101.8	109.4	100.2	91.5	101.9	
2020 12	81.6 (.060)	87.0	88.3	101.5	106.5	100.4	94.3	102.0	
2021 01	83.2 (.062)	88.4	90.1	101.9	106.1	100.4	94.6	102.3	
2021 02	82.4 (.061)	90.2	91.8	101.7	109.4	100.2	91.6	101.9	
2021 03	85.0 (.063)	93.4	95.0	101.8	109.8	101.3	92.3	103.1	
2021 04	87.6 (.065)	96.6	98.5	101.9	110.3	101.6	92.2	103.6	
2021 05	90.1 (.067)	99.0	101.0	102.0	109.9	100.0	91.0	102.0	
2021 06	92.8 (.069)	100.9	102.8	101.9	108.7	101.4	93.2	103.3	
2021 07	94.8 (.070)	104.9	107.0	101.9	110.6	101.6	91.9	103.6	
2021 08	96.2 (.071)	105.5	107.3	101.8	109.5	100.3	91.5	102.0	
2021 09	100.4 (.074)	107.3	109.2	101.8	106.8	99.8	93.4	101.5	
2021 10	105.9 (.078)	111.1	112.9	101.6	104.8	100.9	96.3	102.5	
2021 11	105.8 (.078)	114.2	115.9	101.5	107.8	102.0	94.6	103.5	
2021 12	107.1 (.079)	114.8	116.4	101.4	107.1	102.1	95.3	103.6	
2022 01	116.1 (.086)	119.0	121.0	101.7	102.3	101.3	98.9	103.0	
2022 02	118.3 (.088)	122.7	125.1	101.9	103.6	100.6	97.1	102.6	
2022 03	116.9 (.087)	125.1	128.1	102.4	106.9	101.4	94.8	103.8	
2022 04	118.7 (.088)	131.3	133.7	101.8	110.6	102.2	92.4	104.0	
2022 05	121.3 (.090)	131.8	134.0	101.7	108.5	101.8	93.8	103.5	
2022 06	124.6 (.092)	134.8	137.5	102.0	108.1	102.5	94.8	104.5	
2022 07	127.3 (.094)	138.8	140.7	101.4	109.0	101.7	93.3	103.1	
2022 08	130.1 (.096)	140.5	142.9	101.7	107.9	102.3	94.8	104.0	
2022 09	131.9 (.098)	143.6	145.9	101.6	108.8	102.3	94.0	103.9	
2022 10	129.5 (.096)	142.6	146.0	102.4	110.1	102.4	93.0	104.8	
2022 11	130.5 (.097)	145.2	150.0	103.3	111.2	102.4	92.1	105.7	
2022 12	135.0 (.100)	148.7	153.9	103.5	110.1	102.3	92.9	105.9	
2023 01	133.3 (.099)	147.5	153.3	103.9	110.6	102.9	93.1	106.9	
2023 02	122.6 (.091)	138.1	143.3	103.8	112.6	104.4	92.7	108.4	
2023 03	117.4 (.087)	135.9	142.1	104.5	115.6	103.4	89.4	108.1	
2023 04	115.4 (.085)	134.6	142.3	105.7	116.5	104.4	89.6	110.4	
2023 05	109.9 (.081)	127.4	134.6	105.7	115.8	104.8	90.5	110.7	
2023 06	106.7 (.079)	124.7	132.4	106.1	116.8	104.3	89.3	110.7	
2023 07	106.7 (.079)	122.0	130.0	106.5	114.3	103.6	90.6	110.3	
2023 08	106.3 (.079)	120.1	128.2	106.8	112.9	103.8	91.9	110.9	
2023 09	108.0 (.080)	117.7	125.4	106.5	108.9	103.8	95.4	110.6	
2023 10	102.7 (.076)	118.4	126.7	106.9	115.2	103.7	90.1	110.9	
2023 11	103.1 (.076)	119.2	127.7	107.1	115.5	103.2	89.3	110.5	
2023 12	104.1 (.077)	120.4	128.9	107.1	115.6	103.5	89.5	110.8	

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