



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		
	2022Q3	2022Q4	2023Q1	February, 2023	March, 2023	April, 2023
a. RUEC (Real Unit Energy Cost) (=b-c=e-d)	7.2%	1.4%	-4.1%	-8.9%	-2.7%	-0.1%
b. Real Energy Price (=b1-b2)	6.7%	3.5%	-3.8%	-6.5%	-1.5%	0.3%
b1. Energy Price	6.1%	4.6%	-2.6%	-6.6%	-0.8%	0.8%
b2. GDP Price	-0.5%	1.1%	1.2%	-0.1%	0.7%	0.6%
c. Energy Productivity (=c1-c2)	-0.5%	2.0%	0.3%	2.6%	1.2%	0.4%
c1. Real GDP	-0.3%	0.2%	-0.2%	1.6%	-1.0%	0.0%
c2. Energy Consumption	0.3%	-1.8%	-0.5%	-1.0%	-2.2%	-0.4%
d. Nominal GDP (=b2*c1)	-0.8%	1.3%	1.0%	1.5%	-0.3%	0.5%
e. Energy Cost (=b1*c2)	6.4%	2.7%	-3.1%	-7.5%	-3.0%	0.4%

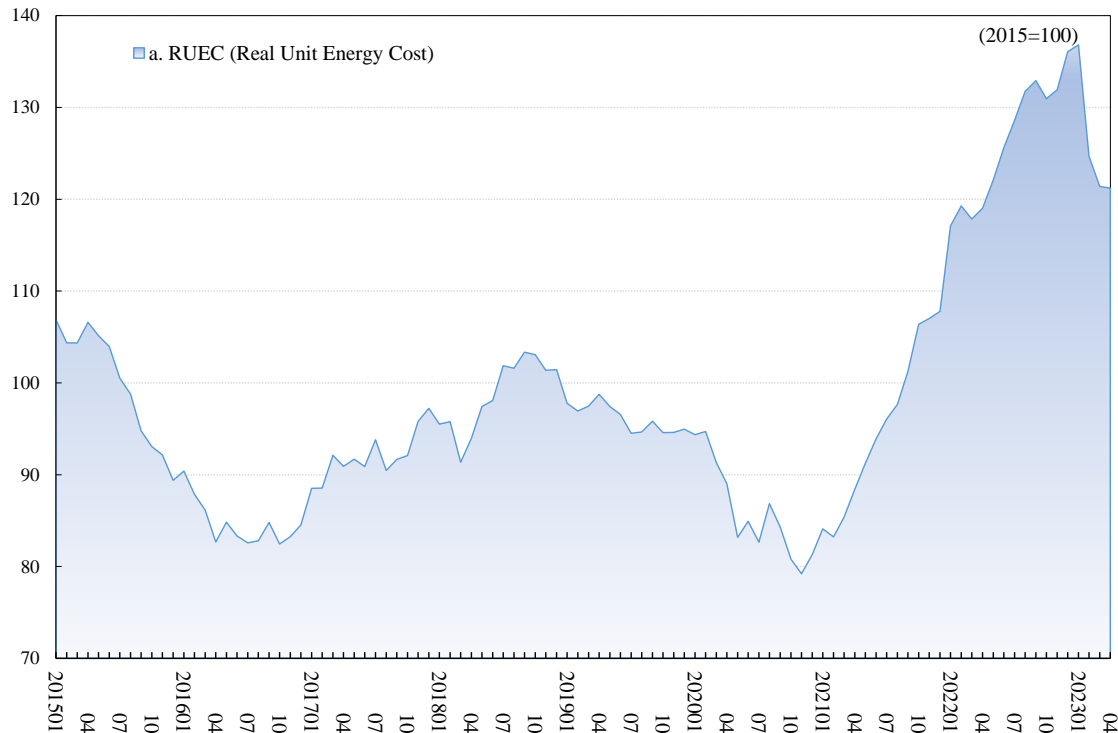
Unit: %. Notes: The most recent month is the forecasts, the previous month is the preliminary estimates, and the last two months or earlier are the final estimates. The aggregate volume indices of real GDP and energy consumption are measured using the translog index, based on the prices and volumes measured 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		
	2022Q3	2022Q4	2023Q1	February, 2023	March, 2023	April, 2023
a. RUEC (Real Unit Energy Cost) (=b/c=e/d)	131.1	133.0	127.6	124.7	121.4	121.2
b. Real Energy Price (=b1/b2)	141.2	146.1	140.6	138.0	135.9	136.3
b1. Energy Price	143.1	149.8	145.9	142.8	141.6	142.8
b2. GDP Price	101.4	102.5	103.8	103.5	104.2	104.8
c. Energy Productivity (=c1/c2)	107.6	109.8	110.1	110.6	111.9	112.3
c1. Real GDP	101.6	101.8	101.5	102.4	101.4	101.3
c2. Energy Consumption	94.4	92.7	92.2	92.6	90.6	90.2
d. Nominal GDP (=b2*c1)	103.0	104.3	105.3	106.0	105.6	106.2
e. Energy Cost (=b1*c2)	135.0	138.8	134.4	132.1	128.2	128.7

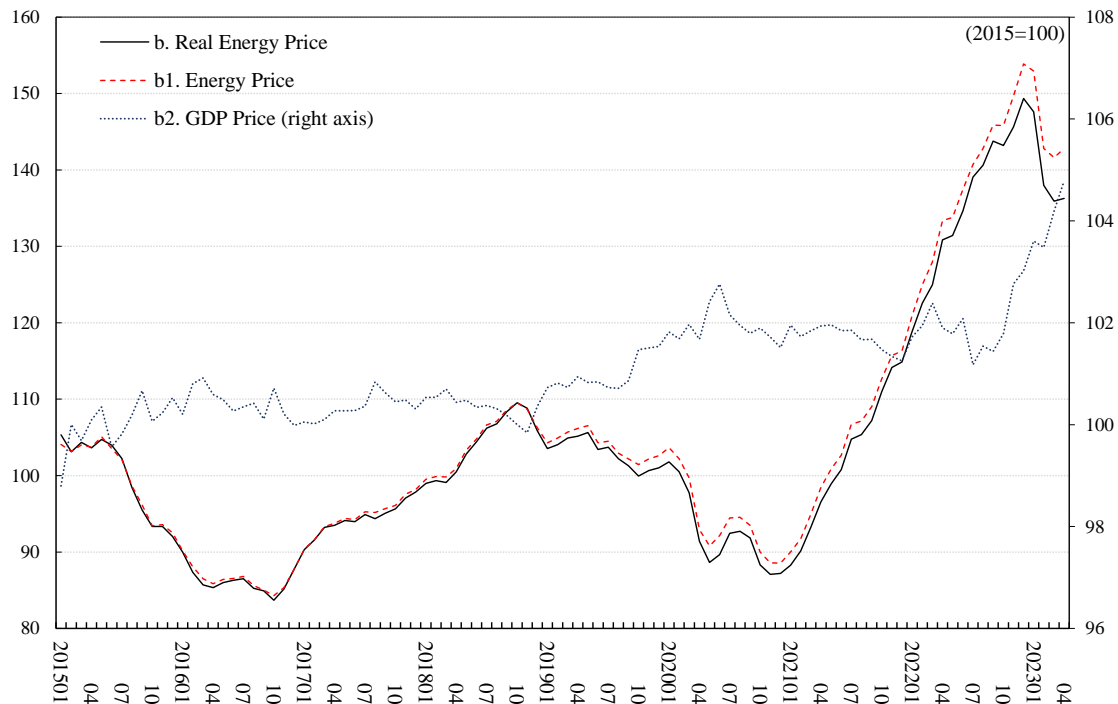
Unit: 2015 average=100.

2 Monthly RUEC (Real Unit Energy Cost)



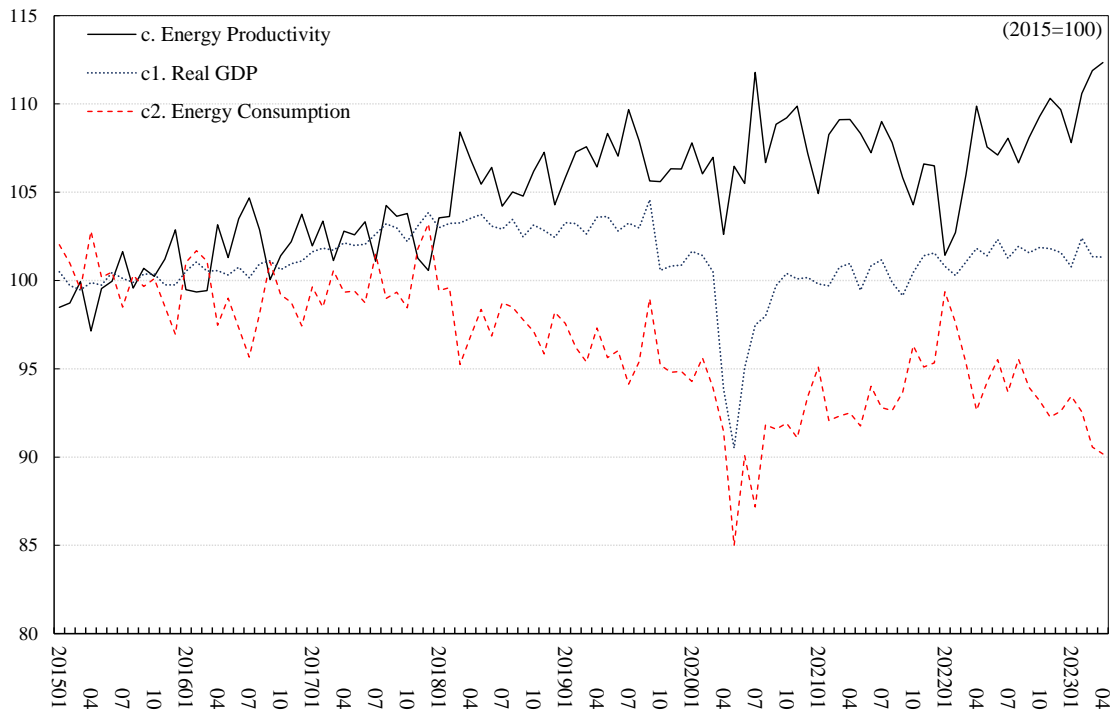
Unit: 2015 average=100. Note: Observation period is from January 2015 to April 2023.

3 Monthly Real Energy Price



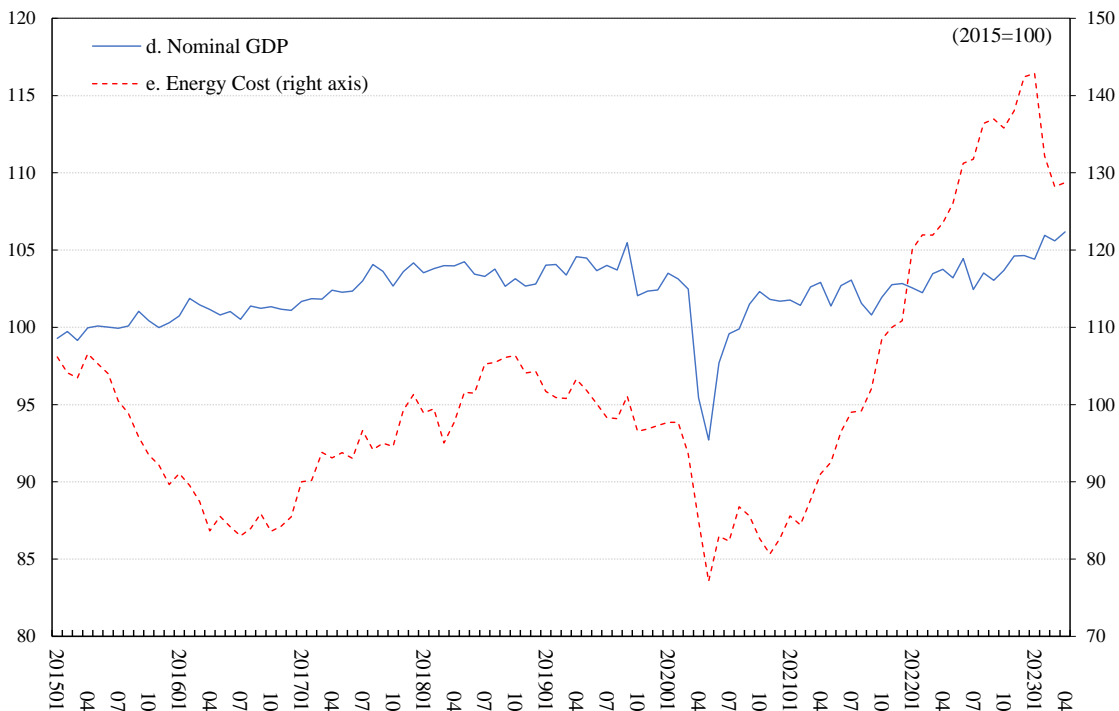
Unit: 2015 average=100. Note: Observation period is from January 2015 to April 2023.

4 Monthly Real GDP and Energy Productivity



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

5 Monthly Nominal GDP and Energy Cost



Unit: 2015 average=100. Note: Observation period is from January 2015 to April 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	101.1
2017		92.0 (.068)	94.3	94.6	100.3	102.5	102.4	100.0	102.8
2018		98.7 (.073)	104.2	104.5	100.3	105.5	103.1	97.7	103.4
2019		96.2 (.071)	102.9	103.9	101.0	107.0	102.7	96.0	103.7
2020		86.1 (.064)	92.5	94.3	101.9	107.4	98.2	91.4	100.1
2021		95.2 (.071)	102.1	103.9	101.7	107.2	100.4	93.6	102.1
2022		126.1 (.093)	135.2	137.9	102.0	107.2	101.5	94.7	103.5
2020	Q1	93.5 (.069)	100.0	101.9	101.8	106.9	101.2	94.6	103.0
	Q2	85.7 (.063)	89.9	92.0	102.3	104.9	93.1	88.8	95.3
	Q3	84.6 (.063)	92.4	94.2	102.0	109.1	98.4	90.2	100.3
	Q4	80.4 (.060)	87.5	89.0	101.7	108.8	100.2	92.1	101.9
2021	Q1	84.2 (.062)	90.5	92.2	101.8	107.4	100.1	93.2	101.9
	Q2	91.2 (.068)	98.8	100.7	101.9	108.2	100.4	92.8	102.3
	Q3	98.3 (.073)	105.8	107.6	101.7	107.5	100.1	93.0	101.8
	Q4	107.1 (.079)	113.3	114.9	101.4	105.8	101.1	95.6	102.5
2022	Q1	118.1 (.087)	122.1	124.6	102.0	103.4	100.7	97.4	102.8
	Q2	122.3 (.091)	132.3	134.9	101.9	108.2	101.8	94.1	103.8
	Q3	131.1 (.097)	141.2	143.1	101.4	107.6	101.6	94.4	103.0
	Q4	133.0 (.099)	146.1	149.8	102.5	109.8	101.8	92.7	104.3
2023	Q1	127.6 (.095)	140.6	145.9	103.8	110.1	101.5	92.2	105.3
2020	01	94.4 (.070)	101.8	103.7	101.8	107.8	101.7	94.3	103.5
	02	94.7 (.070)	100.5	102.2	101.7	106.0	101.4	95.6	103.1
	03	91.3 (.068)	97.7	99.7	102.0	107.0	100.5	93.9	102.5
	04	89.0 (.066)	91.4	92.9	101.7	102.6	93.9	91.5	95.4
	05	83.2 (.062)	88.6	90.8	102.4	106.5	90.5	85.0	92.7
	06	84.9 (.063)	89.7	92.1	102.8	105.5	95.1	90.1	97.7
	07	82.6 (.061)	92.5	94.5	102.2	111.8	97.5	87.2	99.6
	08	86.8 (.064)	92.7	94.5	101.9	106.7	98.0	91.8	99.9
	09	84.3 (.062)	91.8	93.5	101.8	108.9	99.7	91.6	101.5
	10	80.8 (.060)	88.3	90.0	101.9	109.2	100.4	91.9	102.3
	11	79.2 (.059)	87.1	88.6	101.7	109.9	100.1	91.1	101.8
	12	81.3 (.060)	87.2	88.5	101.5	107.2	100.2	93.4	101.7
2021	01	84.1 (.062)	88.3	90.0	102.0	104.9	99.8	95.1	101.8
	02	83.2 (.062)	90.2	91.7	101.7	108.3	99.7	92.1	101.4
	03	85.4 (.063)	93.2	94.9	101.8	109.1	100.8	92.3	102.6
	04	88.4 (.065)	96.6	98.4	101.9	109.1	101.0	92.5	102.9
	05	91.2 (.068)	98.9	100.9	102.0	108.3	99.4	91.8	101.4
	06	93.9 (.070)	100.8	102.7	101.8	107.2	100.8	94.0	102.7
	07	96.1 (.071)	104.8	106.7	101.9	109.0	101.2	92.8	103.0
	08	97.7 (.072)	105.4	107.1	101.7	107.8	99.9	92.6	101.6
	09	101.2 (.075)	107.2	109.0	101.7	105.8	99.1	93.7	100.8
	10	106.4 (.079)	111.0	112.7	101.5	104.3	100.5	96.3	101.9
	11	107.0 (.079)	114.2	115.7	101.3	106.6	101.4	95.1	102.8
	12	107.8 (.080)	114.9	116.3	101.3	106.5	101.6	95.3	102.8
2022	01	117.1 (.087)	118.8	120.9	101.7	101.4	100.8	99.4	102.5
	02	119.3 (.088)	122.6	125.0	101.9	102.7	100.3	97.6	102.2
	03	117.8 (.087)	125.0	128.0	102.4	106.0	101.1	95.3	103.5
	04	119.0 (.088)	130.9	133.4	101.9	109.9	101.8	92.7	103.8
	05	122.1 (.090)	131.4	133.8	101.8	107.6	101.4	94.2	103.2
	06	125.6 (.093)	134.6	137.4	102.1	107.1	102.3	95.5	104.5
	07	128.6 (.095)	139.1	140.7	101.2	108.1	101.3	93.7	102.4
	08	131.8 (.098)	140.6	142.8	101.5	106.7	101.9	95.5	103.5
	09	132.9 (.098)	143.8	145.9	101.4	108.1	101.6	93.9	103.0
	10	131.0 (.097)	143.2	145.8	101.8	109.3	101.9	93.2	103.7
	11	131.9 (.098)	145.6	149.7	102.8	110.3	101.8	92.3	104.6
	12	136.1 (.101)	149.3	153.9	103.0	109.7	101.6	92.6	104.7
2023	01	136.8 (.101)	147.6	153.0	103.6	107.8	100.8	93.5	104.4
	02	124.7 (.092)	138.0	142.8	103.5	110.6	102.4	92.6	106.0
	03	121.4 (.090)	135.9	141.6	104.2	111.9	101.4	90.6	105.6
	04	121.2 (.090)	136.3	142.8	104.8	112.3	101.3	90.2	106.2

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