



**THE REPUBLIC OF CROATIA**  
**CROATIAN ENERGY**  
**REGULATORY AGENCY**  
**Ulica grada Vukovara 14**  
**10000 Zagreb**

**Class:**

**Number:**

**Zagreb, 15 December 2017**

The Croatian Energy Regulatory Agency, pursuant to Article 11 Paragraph 1 Item 10 of the Act on the Regulation of Energy Activity (Official Gazette No. 120/12) and Article 29 of the Energy Act (Official Gazette Nos. 120/12, 14/4 and 102/15), in the administrative procedure of determining the indicative amounts of tariff items for receiving and delivering liquefied natural gas according to the Methodology for the determination of tariff items for the receiving and delivering of liquefied natural gas (Official Gazette No. 110/17), initiated at the request of the energy entity LNG Hrvatska d.o.o., Radnička cesta 80, Zagreb, at the 30<sup>th</sup> session of the Board of Commissioners of the Croatian Energy Regulatory Agency held on 15 December 2017, hereby adopts the following

**DECISION**

1. The indicative amounts of tariff items for receiving and delivering liquefied natural gas for the energy entity LNG Hrvatska d.o.o., Radnička cesta 80, Zagreb, set out in the request for establishing the indicative amounts of tariff items for receiving and delivering liquefied natural gas according to the Methodology for the determination of tariff items for the receiving and delivering of liquefied natural gas filed by the energy entity LNG Hrvatska d.o.o., Radnička cesta 80, Zagreb, on 16 October 2017, are determined as stated in Table 1.

Table 1. The indicative amounts of tariff items for receiving and delivering liquefied natural gas for the period 2020–2039 based on the planned scenarios for receiving and delivering liquefied natural gas for the energy entity LNG Hrvatska d.o.o., Radnička cesta 80, Zagreb

<i>Scenario for receiving and delivering LNG</i>	<i>Unit (@NCV)</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>2029</i>
S1 OS	EUR/MWh	2.30	2.28	2.26	2.29	2.32	2.35	2.38	2.42	2.55	2.69
S1 300	EUR/MWh	1.58	1.56	1.55	1.53	1.52	1.51	1.50	1.48	1.47	1.46
S2 400	EUR/MWh	1.58	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10
S3 600	EUR/MWh	1.58	1.18	1.17	1.02	0.90	0.79	0.69	0.75	0.75	0.74
<i>Scenario for receiving and delivering LNG</i>	<i>Unit (@NCV)</i>	<i>2030</i>	<i>2031</i>	<i>2032</i>	<i>2033</i>	<i>2034</i>	<i>2035</i>	<i>2036</i>	<i>2037</i>	<i>2038</i>	<i>2039</i>
S1 OS	EUR/MWh	2.83	2.98	3.22	3.19	3.16	3.13	3.11	3.08	3.06	3.03
S1 300	EUR/MWh	1.45	1.43	1.42	1.41	1.40	1.39	1.38	1.36	1.35	1.34
S2 400	EUR/MWh	1.09	1.08	1.07	1.06	1.06	1.05	1.04	1.03	1.02	1.01
S3 600	EUR/MWh	0.74	0.73	0.72	0.72	0.71	0.71	0.70	0.70	0.69	0.69

2. The indicative amounts of tariff items for receiving and delivering liquefied natural gas for the energy entity referred to in item 1 of this Decision shall be adopted by the Croatian Energy Regulatory Agency in a separate decision, to be published in the Official Gazette.
3. This Decision shall be delivered to the energy entity LNG Hrvatska d.o.o., Radnička cesta 80, Zagreb.
4. This Decision shall be published on the website of the Croatian Energy Regulatory Agency.

### Statement of grounds

On 16 October 2017, pursuant to Article 29 Paragraph 7 of the Energy Act, the energy entity LNG Hrvatska d.o.o., Radnička cesta 80, Zagreb (hereinafter: LNG d.o.o.), submitted a request to the Croatian Energy Regulatory Agency for establishing the indicative amounts of tariff items for receiving and delivering liquefied natural gas, class: 310-34/17-03/03, file no.: 372-17-15, of 16 October 2017 (hereinafter: the request) according to Article 49 of the Methodology for the determination of tariff items for the receiving and delivering of liquefied natural gas, requesting the Agency to determine the indicative amounts of tariff items for receiving and delivering liquefied natural gas for the period 2020–2039. The energy entity LNG d.o.o. submitted a supplement to the request, class: 310-34/17-03/03, file no.: 372-17-36, to HERA on 11 December 2017.

Further, in accordance with Article 14 Paragraph 7 of the Methodology, the energy entity LNG d.o.o. also submitted a request for an additional risk premium for investments in the energy activity of managing the terminal for receiving and delivering liquefied natural gas, class: 310-34/17-03/03, file no.: 372-17-39, of 14 December 2017, to HERA on 14 December 2017,

according to the Methodology and criteria for an appraisal of investments in infrastructural projects in the field of electricity and gas.

Having examined and analysed the documents that the energy entity LNG d.o.o. submitted with the request, HERA found that the request contained all information set out in Article 38 of the Methodology.

### ***Introductory remarks***

In accordance with the provisions of Article 38 of the Methodology, LNG d.o.o. delivered to HERA data and documents for the calculation of the indicative amounts of tariff items for the period 2020–2039, as follows:

- a transparent and detailed calculation of projected allowed revenue and adjusted allowed revenue for all years in the regulatory period,
- a completed Table 1 Total operating expenses, Table 2 OPEX, Table 3 Regulated assets, Table 4 Depreciation on regulated assets, Table 5 Elements for determining WACC, and Table 6 Allowed revenue from Annex 1 of the Methodology,
- a transparent and detailed calculation of the indicative amounts of tariff items for receiving and delivering liquefied natural gas (LNG),
- a completed Table 1 Tariff items for receiving and delivering LNG and Table 2 Planned agreed services of the LNG terminal at annual level from Annex 2 of the Methodology,
- a financial statement for 2016, legalised by the authorised auditor,
- a plan of operations and a plan of investments that include all years in the regulatory period,
- a plan for developing the LNG terminal with natural and financial indicators that encompasses all years in the regulatory period and includes:
  - a plan of investments in the construction of the LNG terminal, including a plan of putting the facilities of the LNG terminal to use,
  - a justifiability study for the planned investments,
  - sources of financing for the planned investments, and
  - a ten-year projection for the development of the LNG terminal.

In the request, the energy entity LNG d.o.o. calculated the indicative amounts of tariff items for several LNG terminal capacity lease scenarios in the period 2020–2039. The LNG terminal capacity lease scenarios correspond to certain gas transmission system capacity lease scenarios for the transmission of gas from the LNG terminal, as elaborated in detail further down in this Decision.

## ***1. ALLOWED REVENUE***

### ***1.1. PROJECTED ALLOWED REVENUE***

The Methodology prescribes that projected allowed revenue should cover justified operating expenses incurred in the performance of the energy activity of LGN terminal management and ensure a yield on regulated assets.

The calculation of projected allowed revenue is carried out on the basis of projected operating expenses (OPEX), depreciation, and yield on regulated assets, minus revenue projected from non-standard services and other projected operating revenue (generated by using funds intended for the performance of the energy activity of LNG terminal management, but which do not relate to the core business of the operator).

HERA adjusted certain items in projected allowed revenue in the period 2020–2039 from the request as stated further down in this Decision.

#### ***a) Operating expenses (OPEX)***

HERA adjusted the projected amounts of OPEX from the request in line with the latest available projections of the consumer price index growth rate for the period 2018–2020, published by the Ministry of Finance of the Republic of Croatia in the document “Guidelines for the Economic and Fiscal Policy for the Period 2018–2021, July 2017”. Further to the foregoing, HERA adjusted the projected consumer price index for the period 2020–2039 to 1.40%.

#### ***b) Regulated assets and depreciation***

HERA adjusted the value of regulated assets in a way to exclude the item “Costs of interest incurred during construction” considering that interest as a cost of financing regulated assets is recognised through the nominal value of the weighted average cost of capital before taxation (WACC) in the part of the rate of return on debt. Further, the foreseen additional risk premium for investing in the energy activity of LNG terminal management includes additional risks connected with the construction of the LNG terminal.

In addition to the foregoing, HERA adjusted the depreciation rate for items Ship, Coordination and project management, Expenses of LNG Hrvatska during construction, Expenses of handover activities, and Preparatory activities, from 5% to 3.25%, where the presumed share of construction objects for the said items is 70% and the depreciation rate is 2.50%.

#### ***c) Nominal value of the weighted average cost of capital before taxation (WACC)***

The projected WACC for the period 2020–2039 that the energy entity LNG d.o.o submitted in the request is 8.76% and, according to HERA’s adjustment, it is 6.94%. Namely, the Methodology sets out that the risk-free rate of return is determined on the basis of the average nominal interest rate in the last three emissions of bonds issued by the Republic of Croatia with maturity of ten years or more. On the basis of the latest available data of the Ministry of Finance of the Republic of Croatia, the latest domestic or international bond with the term of maturity of ten years or more was issued on 27 November 2017, with maturity on 27 January 2030, designation: Euro-EUR bonds / XII, listing: Luxembourg, nominal interest rate 2.75%, which is why the risk-free rate of return was adjusted from 3.25% to 3%.

Further, HERA adjusted the market risk premium from 8.57% to 4.80% in view of the trends and prognosis of macroeconomic indicators in the years to come. Namely, in view of the relatively low liquidity of the capital market in the Republic of Croatia, HERA used international publicly available databases and data of the Agency for the Cooperation of Energy Regulators (ACER) on

market risk premiums applied to the calculation of risk-free rate of return in EU Member States in order to make an assessment of the market risk premium. Notably, the market risk premium was not further adjusted for the state risk premium for the Republic of Croatia because the said premium is included in the calculation of the risk-free interest rate.

Further, the energy entity LNG d.o.o. submitted a request for an additional risk premium of investing in the energy activity of managing the terminal for receiving and delivering liquefied natural gas to HERA. Namely, the energy entity LNG d.o.o. identified and assessed risks in accordance with the Methodology and criteria for the appraisal of investments in infrastructural projects in the field of electricity and gas, which sets out the method for appraising investments in infrastructural projects in the field of electricity and gas of common interest in the European Union, the criteria and the procedure of risk appraisal for projects of common interest, and measures to mitigate or eliminate the risks, on the basis of which the additional risk premium of investment of 2% was proposed. For the purposes of determining the indicative amount of tariff items for receiving and delivering liquefied natural gas, HERA conducted an additional analysis further to the request and documents submitted and it finds that the amount of the proposed additional risk premium of investment of 2% is acceptable.

HERA holds that the other elements for determining the projected WACC are justified. The elements used for determination and the projected WACC for the period 2020–2039, further to the request and HERA’s adjustment, are shown in Table 2.

*Table 2. Elements for determining WACC as in the request and HERA’s adjustment for the period 2020–2039*

<i>Elements of WACC</i>	<i>In the request</i>	<i>HERA’s adjustment</i>
Rate of return on equity – $r_e$ (%)	11.50%	8.50%
Risk-free rate of return – $r_f$ (%)	3.25%	3.00%
Variability coefficient of yield on operator’s shares in relation to average variability of yield on market portfolio – $\beta$	0.73	0.73
Market risk premium - $r_m - r_f$ (%)	8.57%	4.80%
Additional risk premium of investing in the energy activity of LNG terminal management – $r_{upp}$ (%)	2.00%	2.00%
Share of equity in total capital structure (%) – $E/(E+D)$ (%)	50%	50%
Rate of return on debt – $r_d$ (%)	3.50%	3.50%
Share of debt in total capital structure (%) – $D/(E+D)$ (%)	50%	50%
Rate of return on profit - P (%)	18%	18%
<b>Projected WACC for the regulatory period - <math>WACC^P</math> (%)</b>	<b>8.76%</b>	<b>6.94%</b>

## 1.2. ADJUSTED ALLOWED REVENUE

Adjusted allowed revenue for the years in the regulatory period is calculated in a way that net present value of adjusted allowed revenue for the years in the regulatory period is equal to the net present value of projected allowed revenue in the same period, where during the first year of the regulatory period adjusted allowed revenue is equal to projected allowed revenue, and the adjustment coefficient is used, as determined in the iterative procedure ( $\alpha$ ), in order to determine adjusted allowed revenue in the ensuing years. Adjusted allowed revenue is used to diminish large oscillations in allowed revenue and the resulting amounts of tariff items. The adjustment of allowed revenue was conducted for each regulatory period separately. The amounts of adjusted allowed revenue according to HERA's adjustment are shown in Table 3.

Table 3. Adjusted allowed revenue according to HERA's adjustment for the period 2020–2039.

<i>Year of regulatory account</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>
Adjusted allowed revenue (in millions EUR)	39.70	39.20	38.87	39.37	39.88	36.04	36.51	37.19
<i>Year of regulatory account</i>	<i>2028</i>	<i>2029</i>	<i>2030</i>	<i>2031</i>	<i>2032</i>	<i>2033</i>	<i>2034</i>	<i>2035</i>
Adjusted allowed revenue (in millions EUR)	39.17	41.26	31.24	32.90	35.53	35.22	34.92	34.62
<i>Year of regulatory account</i>	<i>2036</i>	<i>2037</i>	<i>2038</i>	<i>2039</i>				
Adjusted allowed revenue (in millions EUR)	34.33	34.04	33.75	33.46				

## 2. INDICATIVE TARIFF ITEMS

### a) Planned agreed capacities of the liquefied natural gas terminal user

The following scenarios are defined for the calculation of the indicative amounts of tariff items for receiving and delivering liquefied natural gas:

- S1 OS – quantity of gas based on the results of the non-binding phase of the Open Season procedure,
- S1 300 – quantity of gas of 2.63 billion m<sup>3</sup>/year (25.23 TWh),
- S2 400 – quantity of gas of 2.63 billion m<sup>3</sup>/year (25.23 TWh) in 2020 and of 3.50 billion m<sup>3</sup>/year (33.64 TWh) in the period 2021-2039,
- S3 600 – quantity of gas of 2.63 billion m<sup>3</sup>/year (25.23 TWh) in 2020, of 3.50 billion m<sup>3</sup>/year (33.64 TWh) in the period 2021–2023, and of 5.26 billion m<sup>3</sup>/year (50.46 TWh) in the period 2024–2039.

HERA adjusted the planned agreed LNG terminal capacities from the request in the scenario S2 400 and the scenario S3 600 for 2021 considering that in that year it is planned to put new infrastructure of the gas transmission system to use. The adjusted planned agreed capacities of the LNG terminal are shown in Table 4.

Table 4. Planned agreed capacities for the period 2020–2039 according to the LNG terminal capacity lease scenarios

<i>Scenario for receiving and delivering LNG</i>	<i>Unit (@NCV)</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>2029</i>
S1 OS	TWh	17.22	17.22	17.22	17.22	17.22	15.37	15.37	15.37	15.37	15.37
S1 300	TWh	25.23	25.23	25.23	25.23	25.23	25.23	25.23	25.23	25.23	25.23
S2 400	TWh	25.23	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64
S3 600	TWh	25.23	33.64	33.64	33.64	50.46	50.46	50.46	50.46	50.46	50.46
<i>Scenario for receiving and delivering LNG</i>	<i>Unit (@NCV)</i>	<i>2030</i>	<i>2031</i>	<i>2032</i>	<i>2033</i>	<i>2034</i>	<i>2035</i>	<i>2036</i>	<i>2037</i>	<i>2038</i>	<i>2039</i>
S1 OS	TWh	11.05	11.05	11.05	11.05	11.05	11.05	11.05	11.05	11.05	11.05
S1 300	TWh	25.23	25.23	25.23	25.23	25.23	25.23	25.23	25.23	25.23	25.23
S2 400	TWh	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64	33.64
S3 600	TWh	50.46	50.46	50.46	50.46	50.46	50.46	50.46	50.46	50.46	50.46

#### **b) Indicative amounts of tariff items for receiving and delivering liquefied natural gas**

In line with the Methodology, the indicative amounts of tariff items for each year in the period 2020–2039 are calculated as a ratio of adjusted allowed revenue and the planned total delivery of liquefied natural gas from the LNG terminal.

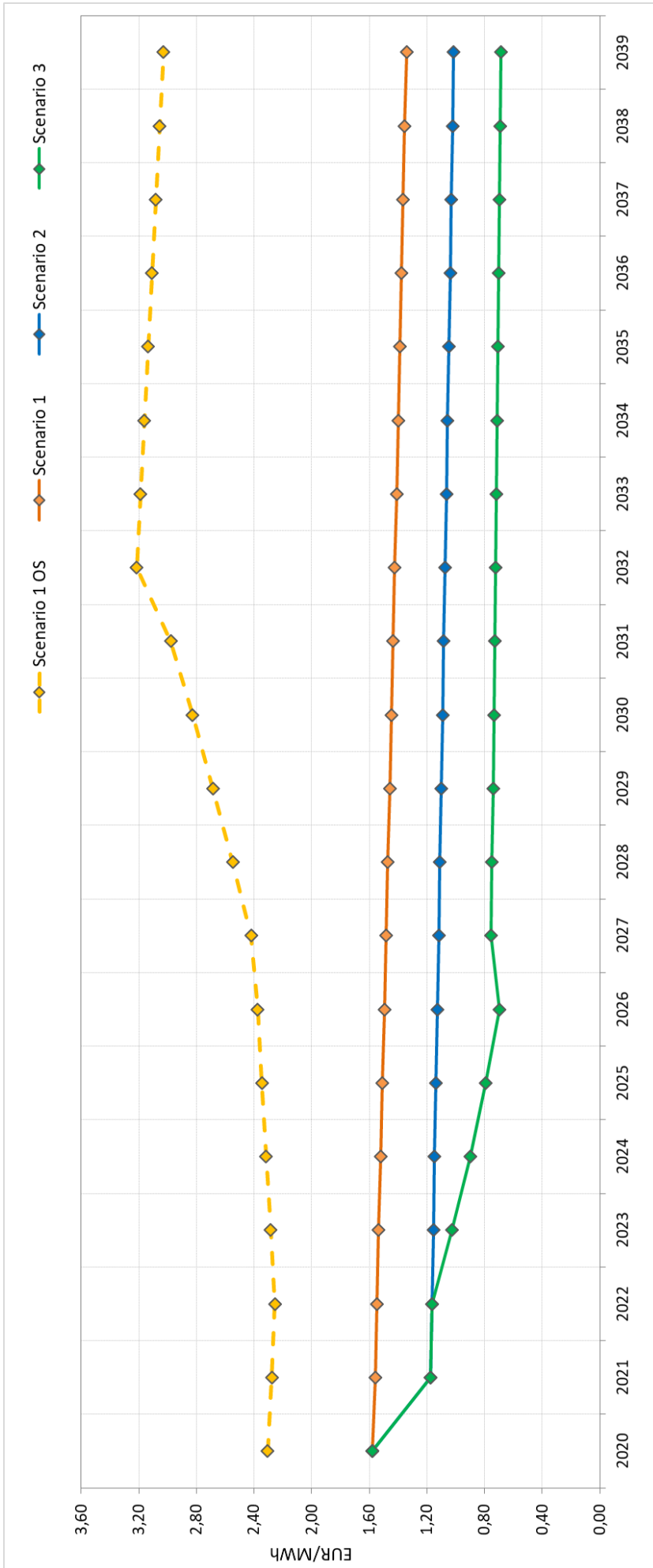
The indicative amounts of tariff items are calculated for the four previously mentioned LNG terminal capacity lease scenarios for the period 2020–2039 and they are shown in Table 5 in line with HERA’s adjustment. Further, the amounts are shown graphically in Figure 1.

Table 5. Indicative amounts of tariff items according to HERA's adjustment for the planned scenarios of LNG terminal capacity lease

Scenario	Unit	Calorific value	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	
S1 0S	EUR/MWh	@ NCV	2.30	2.28	2.26	2.29	2.32	2.35	2.38	2.42	2.55	2.69	2.83	2.98	3.22	3.19	3.16	3.13	3.11	3.08	3.06	3.03	
		@ GCV	2.07	2.05	2.03	2.06	2.08	2.11	2.14	2.18	2.29	2.42	2.55	2.68	2.89	2.87	2.85	2.82	2.80	2.77	2.75	2.73	
S1 300	EUR/MWh	@ NCV	1.58	1.56	1.55	1.53	1.52	1.51	1.50	1.48	1.47	1.46	1.45	1.43	1.42	1.41	1.40	1.39	1.38	1.36	1.35	1.34	
		@ GCV	1.42	1.40	1.39	1.38	1.37	1.36	1.35	1.34	1.32	1.31	1.30	1.29	1.28	1.27	1.26	1.25	1.24	1.23	1.22	1.21	
S2 400	EUR/MWh	@ NCV	1.58	1.18	1.17	1.16	1.15	1.14	1.13	1.12	1.11	1.10	1.09	1.08	1.07	1.06	1.06	1.05	1.04	1.03	1.02	1.01	
		@ GCV	1.42	1.06	1.05	1.04	1.03	1.02	1.02	1.01	1.01	1.00	0.99	0.98	0.97	0.97	0.96	0.95	0.94	0.93	0.93	0.92	0.91
S3 600	EUR/MWh	@ NCV	1.58	1.18	1.17	1.02	0.90	0.79	0.69	0.75	0.75	0.74	0.74	0.74	0.73	0.72	0.72	0.71	0.71	0.70	0.70	0.69	0.69
		@ GCV	1.42	1.06	1.05	0.92	0.81	0.71	0.63	0.68	0.67	0.67	0.67	0.66	0.66	0.65	0.65	0.64	0.64	0.63	0.63	0.62	0.62



Figure 1. Indicative amounts of tariff items according to HERA's adjustment for the planned scenarios of LNG terminal capacity lease (@NCV)



### 3. CONCLUSION

Further to the explanations provided in this Decision, HERA holds that the request of the energy entity LNG d.o.o. is not fully justified. On the basis of the foregoing, it is justifiable to approve the indicative amounts of tariff items for receiving and delivering LNG for the energy entity LNG d.o.o. as shown in Table 6.

*Table 6. Indicative amounts of tariff items for receiving and delivering liquefied natural gas for the period 2020–2039 according to the planned scenarios for receiving and delivering LNG*

<i>Scenario for receiving and delivering LNG</i>	<i>Unit (@NCV)</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>2023</i>	<i>2024</i>	<i>2025</i>	<i>2026</i>	<i>2027</i>	<i>2028</i>	<i>2029</i>
S1 OS	EUR/MWh	2,30	2,28	2,26	2,29	2,32	2,35	2,38	2,42	2,55	2,69
S1 300	EUR/MWh	1,58	1,56	1,55	1,53	1,52	1,51	1,50	1,48	1,47	1,46
S2 400	EUR/MWh	1,58	1,18	1,17	1,16	1,15	1,14	1,13	1,12	1,11	1,10
S3 600	EUR/MWh	1,58	1,18	1,17	1,02	0,90	0,79	0,69	0,75	0,75	0,74
<i>Scenario for receiving and delivering LNG</i>	<i>Unit (@NCV)</i>	<i>2030</i>	<i>2031</i>	<i>2032</i>	<i>2033</i>	<i>2034</i>	<i>2035</i>	<i>2036</i>	<i>2037</i>	<i>2038</i>	<i>2039</i>
S1 OS	EUR/MWh	2.83	2.98	3.22	3.19	3.16	3.13	3.11	3.08	3.06	3.03
S1 300	EUR/MWh	1.45	1.43	1.42	1.41	1.40	1.39	1.38	1.36	1.35	1.34
S2 400	EUR/MWh	1.09	1.08	1.07	1.06	1.06	1.05	1.04	1.03	1.02	1.01
S3 600	EUR/MWh	0.74	0.73	0.72	0.72	0.71	0.71	0.70	0.70	0.69	0.69

Further to the foregoing, it has been decided as set out in item 1 of the operative part of this Decision.

Pursuant to Article 29 Paragraphs 10 and 11 of the Energy Act, HERA will adopt the indicative amounts of tariff items in a separate decision to be published in the Official Gazette, and therefore, it has been decided as in item 2 of the operative part of this Decision.

Pursuant to Article 29 Paragraph 8 of the Energy Act, HERA is obliged to deliver to the energy entity the decision on approval or rejection of the request for determining or changing the amount of tariff items, and therefore, it has been decided as in item 3 of the operative part of this Decision.

Article 27 Paragraph 9 of Act on the Regulation of Energy Activity stipulates that individual decisions taken by the Board of Commissioners of HERA in exercising public authorities are announced on the HERA website, and therefore, it has been decided as in item 4 of the operative part of this Decision.

**President of the Board of Commissioners**

**Tomislav Jureković, M. Eng.**

**Right to appeal:**

This Decision is enforceable.

This Decision shall not be subject to an appeal, however, it is possible to initiate an administrative action through a lawsuit with the Administrative Court in Zagreb, within 30 days from the day of delivery of this Decision.

To be submitted to:

1. LNG d.o.o., Radnička cesta 80, Zagreb
2. Files of sessions of the Board of Commissioners
3. Records, here