



## **Circular: discharge volume and hire cost for \$/MMBtu calculations updated**

**Date: 27th August 2024**

The below details relate to \$/MMBtu conversions, and are not applicable to the Spark \$/day benchmark 174 2 stroke rates.

This circular details the introduction of an updated calculation for Spark \$/MMBtu conversions by addressing the following areas:

1. Update discharge volume calculation with variable heel for \$/mmbtu conversion.
2. Update hire cost to account for voyage duration greater than 30 days in \$/mmbtu conversion.

The implementation date is 27/08/2024 for both updates.

### **1. Updated discharge volume calculation for \$/mmbtu conversion with variable heel.**

The proposed update will improve the \$/MMBtu conversions for Routes with a variable heel based on ballast voyage distance for a full round-trip voyage to reflect better cargo discharge volumes for LNG vessel voyages.

The existing discharge volume in \$/MMBtu conversions is calculated as follows:

- *Discharge volume: 98.5% of Vessel Capacity minus boil-off for laden leg minus a heel of 3,000 m<sup>3</sup>*

The updated discharge volume, with new laden leg and heel definitions in \$/MMBtu conversions will be:

- *Discharge volume: 98.5% of Vessel Capacity minus boil-off for laden leg minus heel*
- *Laden leg: duration in days rounded up to 0.5 days for voyage distance at 17 knots plus 2 port days plus flex days, laden canal day (if applicable) and laden congestion days (if applicable)*
- *Heel: boil-off for ballast leg plus 1,000 m<sup>3</sup>*
- *Ballast leg: duration in days rounded up to 0.5 days for voyage distance at 17 knots plus ballast canal day (if applicable) and ballast congestion days (if applicable)*

Example:

Sabine - Futtsu via Panama (0 days congestion) - 54 day voyage

- Existing discharge volume:
  - $(174,000 \text{ cbm} * 98.5\% - 3,000 \text{ cbm}) * 23 - (174,000 \text{ cbm} * 98.5\% * 0.085\%) * 23 * (54 \text{ days} / 2) = 3,782,502 \text{ MMBtu}$
- Updated discharge volume:
  - $(174,000 \text{ cbm} * 98.5\%) * 23 - (174,000 \text{ cbm} * 98.5\% * 0.085\%) * 23 * 29.5 \text{ days} - 4,569 \text{ cbm} * 23 = 3,738,033 \text{ MMBtu}$ 
    - $\text{Heel: } (174,000 \text{ cbm} * 98.5\% * 0.085\%) * 23 * (24.5 \text{ days}) + 1,000 \text{ cbm} = 4,569 \text{ cbm}$



- Laden leg:  $(9,452/17/24) + 2$  port days + 3 flex days + 1 canal day = 29.5 days (rounded up)
- Ballast leg:  $(9,452/17/24) + 1$  canal day = 24.5 days (rounded up)

## 2. Updated hire cost to account for voyage duration in \$/mmbtu conversion.

The proposed update will improve the \$/MMBtu conversions for Routes by accounting for voyages of variable durations longer than 30 days by using the structure of the forward SparkFFA curves to better reflect how LNG vessel fixtures account for voyage duration.

- Existing hire cost in Routes:
  - *Hire Cost (\$): Duration \* \$/day Freight Rate (for initial fixing month)*
- Updated hire cost in Routes:
  - *Voyage length adjusted freight rate (\$/day): (Duration (up to 30 days round trip voyage) \* \$/day Freight Rate (initial fixing month) + Duration (up to next 30 days of roundtrip voyage) \* \$/day Freight Rate (month after initial fixing month) + Duration (up to next 30 days of roundtrip voyage) \* \$/day Freight Rate (2 months after initial fixing month)) / Round Trip Voyage Duration*  
Final rate rounded to the nearest \$250
  - *Hire Cost (\$): Duration \* \$/day Voyage length adjusted freight rate*

Example:

Sabine - Futtsu via Panama (0 days congestion): 54 day voyage September 2024 as on 23/07/2024

- Existing Hire Cost (\$):
  - 54 days \* \$101,000/day = \$5,454,000
- Proposed Hire Cost (\$):
  - Voyage length adjusted freight rate (\$/day): 30 days \* \$101,000/day + 24 days \* \$113,500/day / 54 days = \$106,500 (rounded to the nearest \$250)
  - Hire Cost (\$): 54 days \* \$106,500/day = \$5,751,000

Further details on the vessel Unit Freight Cost \$/MMBtu calculation can be found in the [Routes](#) methodology.