

2019

# Global Tank Storage Assets

The Power of Market Intelligence

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Jacob van den Berge  
TANKTERMINALS.COM

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## Chapter 1: In which region is capacity per terminal the highest?

### 1.0 Introduction

All over the world, there are independent tank storage companies that support market players in storing their oil products. They help oil companies that have downstream obligations with storing products or support trading companies seizing (arbitrage) opportunities or governments and oil companies with building their strategic reserves. Tank terminals have an important if not a primary function in the oil and gas value chain.

### 1.1 Terminals per region

At time of writing, the TankTerminals.com database consists of almost 4.900 tank terminals per geographical region. This number is not evenly spread over these regions. The applicable regions are Africa, Asia, Europe, Middle East, Oceania, North America, Central America and South America. In table 1, you can see the number of terminals per region.

TABLE 1: TERMINALS PER REGION

| Geographical region | # of terminals (1) | # of tanks | Market share (1) |
|---------------------|--------------------|------------|------------------|
| Africa              | 203                | 2,946      | 4%               |
| Asia                | 1,057              | 27,111     | 22%              |
| Europa              | 1,122              | 29,634     | 23%              |
| Middle East         | 138                | 2,842      | 3%               |
| Oceania             | 71                 | 1,480      | 1%               |
| North America       | 1,581              | 25,219     | 33%              |
| Central America     | 211                | 3,999      | 4%               |
| South America       | 458                | 8,709      | 9%               |

From this table can be derived that most terminals are located in the US (1.581) followed by Europe (1.122) and Asia (1.057). Smaller regions with respect to terminals are South America (458), Central America (211), Africa (203), Middle East (138) and Oceania (71).

When analyzing tank storage capacity per region and per terminal, some clear distinctions can be found as can be seen from table 2.

TABLE 2: CAPACITY PER REGION AND PER TERMINAL

| Geographical region | Capacity (kcbm) | Market share | # tanks / terminal | Av. Cap. (kcbm) |
|---------------------|-----------------|--------------|--------------------|-----------------|
| Africa              | 46,725          | 5%           | 15                 | 230             |
| Asia                | 372,774         | 37%          | 26                 | 353             |
| Europa              | 240,975         | 24%          | 26                 | 215             |
| Middle East         | 70,323          | 7%           | 21                 | 510             |
| Oceania             | 4,463           | 0.4%         | 21                 | 63              |
| North America       | 201,267         | 20%          | 16                 | 127             |
| Central America     | 40,129          | 4%           | 19                 | 190             |
| South America       | 35,516          | 4%           | 19                 | 78              |

### 1.2 Tanks per terminal and average capacity

In table 2 can be seen that most storage capacity is currently in Asia (372,774kcbm, 37%), followed by Europe (240,975kcbm, 24%) and North America (201,267kcbm, 20%). From this perspective the top 3 have reshuffled and Asia is ranked number one, the region with most tank storage capacity.

When combining table 1 and table 2 the following charts can be derived: Chart 1 tanks per terminal per region and Chart 2 Average capacity per region.

CHART 1 TANKS PER TERMINAL

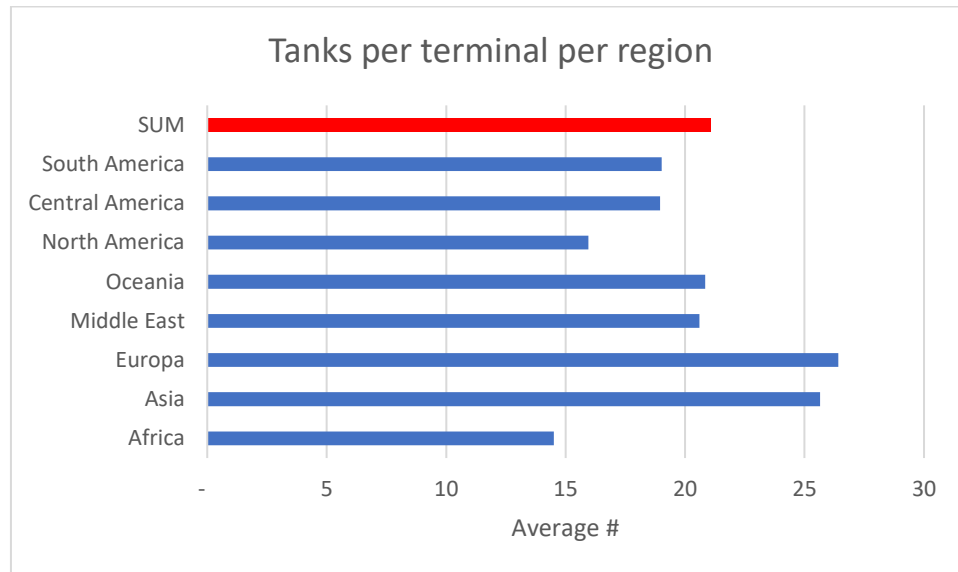
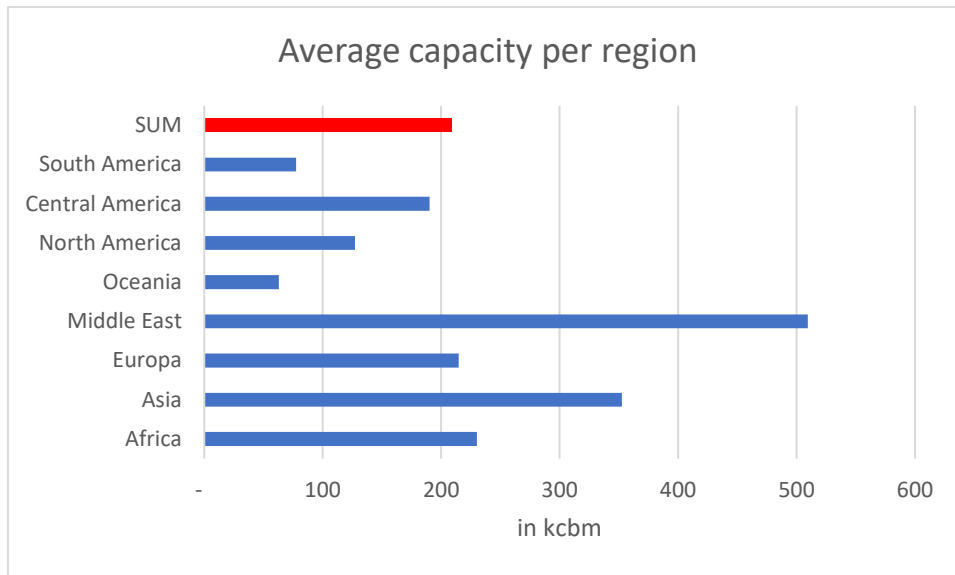


Chart 1 shows that Asia and Europe have the most tanks per terminal. Both regions have 26 tanks per terminal which is above the average tanks per site of 21 tanks. Middle East and Oceania follow by 21 tanks per terminal and around average tank site size. Smaller terminal sites (below average) are located in the Americas and Africa.

CHART 2 AVERAGE CAPACITY PER REGION



In chart 2 can be seen that the Middle East holds the most capacity per terminal, far above the average capacity of 209kcbm. In the case of this region the average capacity per terminal is 510kcbm. A good second place has been taken in by Asia with 353kcbm. The third place is for Africa with 230kcbm. The average capacity per terminal in Europe (215kcbm), around global averages while Central America (190kcbm), North America (127kcbm), South America (78kcbm) and Oceania (63kcbm) are below average.

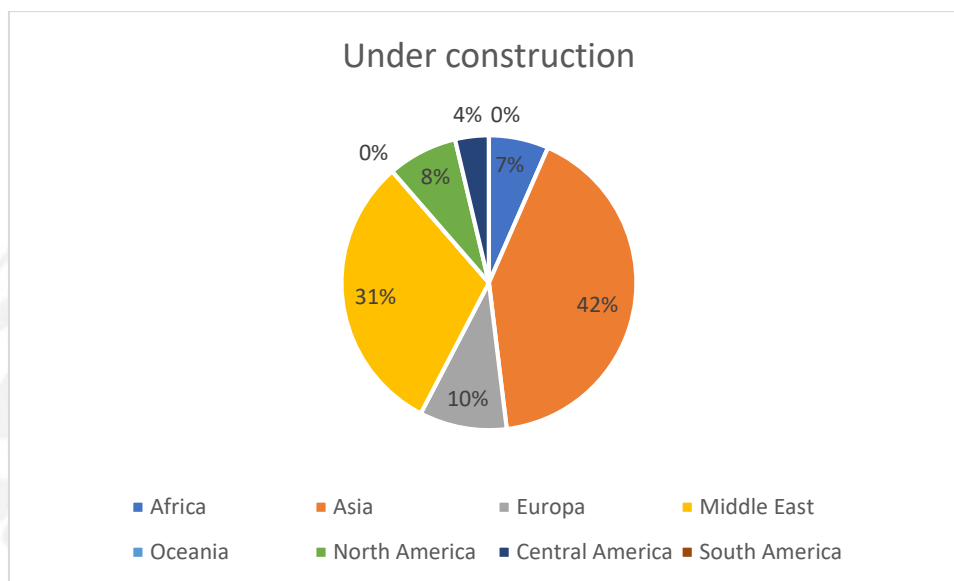
The reason behind this ranking, although not part of this analysis, is that tank terminals in the Middle Eastern Asian region are new compared to more matured tank terminal regions such as Europe and North America. Furthermore, especially in the case of the Middle East national governments have a stake in these assets. Both arguments led to the development of assets with a larger average capacity.

## Chapter 2: In which region is the most capacity under construction and expansion

### 2.0 Under construction

In chart 3 can be seen that on a global scale there is 24.178kcbm under construction. This could either be greenfields or brownfields but construction is under way. The most tank storage capacity is constructed in Asia. This is around 10.036kcbm or 42% of the total capacity. The Asian region is followed by the Middle East (7.488kcbm or 31%) and Europe (2.317kcbm or 10%). Other regions such as the Americas, Oceania and Africa have less capacity under construction. This ranges between 0% and 7%. North America and Oceania have a more mature tank storage industry which does not drive investments while regions such as Africa and Central America have a complex investment environment.

CHART 3 UNDER CONSTRUCTION

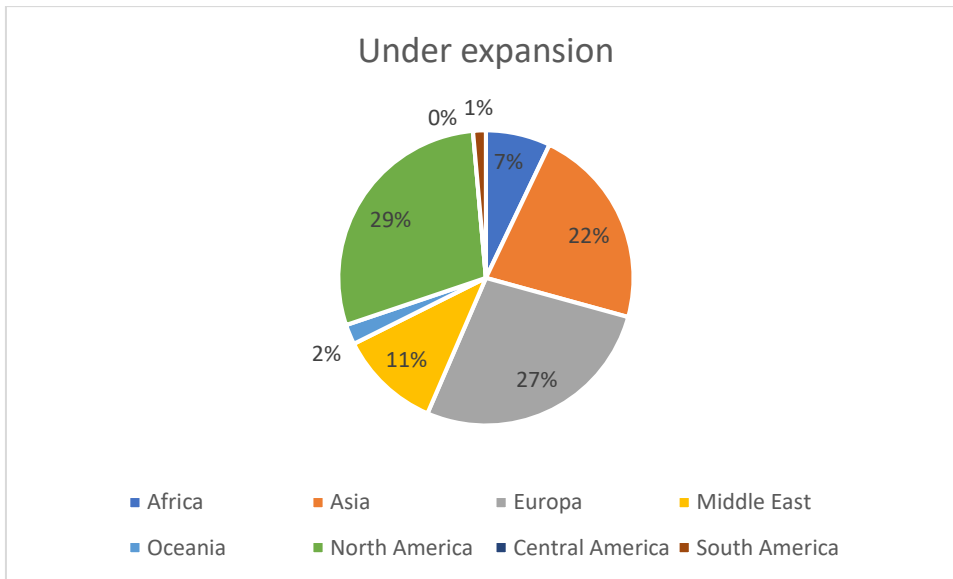


Some examples of major projects in Asia are from Brightoil in China. According to the latest news, in Dalian the capacity that is under construction is 4.800kcbm. It remains unclear when this terminal becomes operational. Another major project in ASIA, is the construction of the Korea Oil Terminal in Ulsan with a capacity of 3.836kcbm which is expected to become operational in 2026. With respect to major projects in the Middle East worth mentioning we have Adnoc's 6.678kcbm underground storage in Fujairah (UAE) and Earth Wealth Energy's 550kcbm project, also in Furjairah.

### 2.1 Under expansion

Chart 4 shows that in total there is 9.336kcbm under expansion. In the case of expansions, North America is the region where the most tank storage capacity is under expansion. Around 2.686kcbm or 29% of capacity is under expansion. North America is followed by Europe (2.540kcbm or 27%) and Asia (2.071kcbm or 18%). Other regions have little capacity under expansion which ranges between 1% and 11%.

CHART 4 UNDER EXPANSION



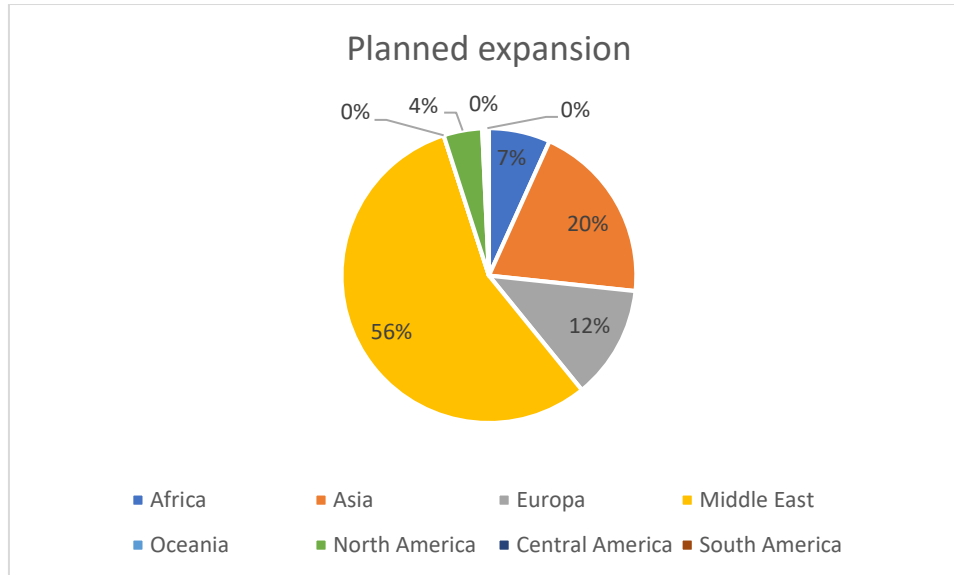
Additions with significant impact is Magellan’s 635kcbm additions in Corpus Christi (Texas) which is planned to become operational in December 2019. P66 in Beaumont (Texas) is adding another 349kcbm, with an unknown construction end date.

## Chapter 3: Where are the most storage investments planned?

### 3.0 Planned expansion

In chart 5 can be seen that most of the expansions are planned in the Middle East with 50% of the planned expansion allocated in this region. This region is followed by Asia with more than 20% of the planned expansions and Europe with more than 12% of the planned expansions. North America, Central America and Africa are other regions have less planned investmentu.

CHART 5 PLANNED EXPANSION



In terms of capacity were are talking about 36.211kcbm in the Middle East. Asia follows with more than 12.000kcbm and Europe with around 8.000kcbm. The other regions have all less than 4.500kcbm expansions planned.

### 3.1 Conclusion

When we sum all capacity projects that are under construction, under expansion or planned the main growth area is the Middle East that will practically double in capacity. Other relatively fast growing tank storage areas are Africa and Asia. In absolute terms, capacity growth in these regions are relatively small.



## Chapter 4: About us

### 4.0 Insights Global

Insights Global is an independent market research company specialized in global petroleum, chemical and renewables industries. We enable intelligent decisions by supplying our clients with relevant and accurate market data, market analysis reports, consultancy and training services. We distinguish ourselves by combining practical knowledge, an extensive network and our data driven and quantitative approach. Furthermore we own and operate the largest global online terminal database TankTerminals.com.

Insights Global is the new brand name for the group of companies consisting of PJK International, Downstream and PortStorage Group. PJK was mostly focused on the oil trading and chemicals business, whereas Downstream and PortStorage group were focused on the tank terminal business. Our knowledge and experience is complementary and together we are able to provide broader and better service for you as a client.

### 4.1 TankTerminals.com

TankTerminals.com, one of Insights Global's products, delivers up-to-date global terminal information for a wide range of companies and supports these organizations in:

- I. Gaining insights on the competitive landscape
- II. Identifying sales leads
- III. Segmenting target groups
- IV. Improving optionality
- V. Breaking down the market structure

This market intelligence platform offers terminal factsheets, which include technical parameters, historical development and managerial contact details, all in one place. Combined with the automated vessel clearance guide this is the number one platform for terminal information and help terminals and its customers to work more efficiently.

## 4.2 Contact us for more information

### **Patrick Kulsen**

Managing Director

**T** +31 (0)850 66 25 02

**M** +31 (0)6 14440590

**E** [pkulsen@insights-global.com](mailto:pkulsen@insights-global.com)

### **Jacob van den Berge**

Marketing & Sales Manager

**T** +31 (0)850 66 25 05

**M** +31 (0) 6 28 34 87 48

**E** [jvdberge@insights-global.com](mailto:jvdberge@insights-global.com)

**Skype** pjk\_jacob.vd.berge

### **Ricardo Perez**

Online Marketer

**T** +34 (0)931 481 356

**E** [rperez@insights-global.com](mailto:rperez@insights-global.com)

**Skype** ricardo.perez.fdz.castro

### **Greta Talmaci**

Sales Executive

**T** +31 (0)850 66 25 21

**E** [greta.talmaci@tankterminals.com](mailto:greta.talmaci@tankterminals.com)

**Skype** greta.talmaci