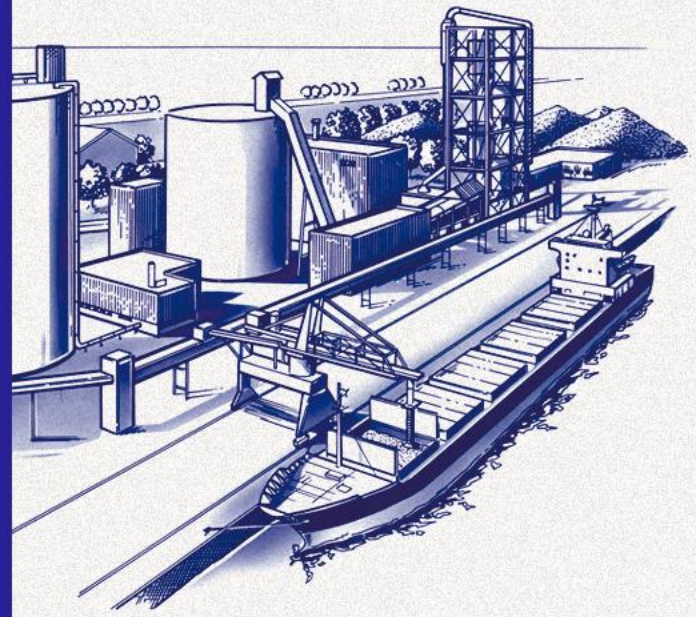

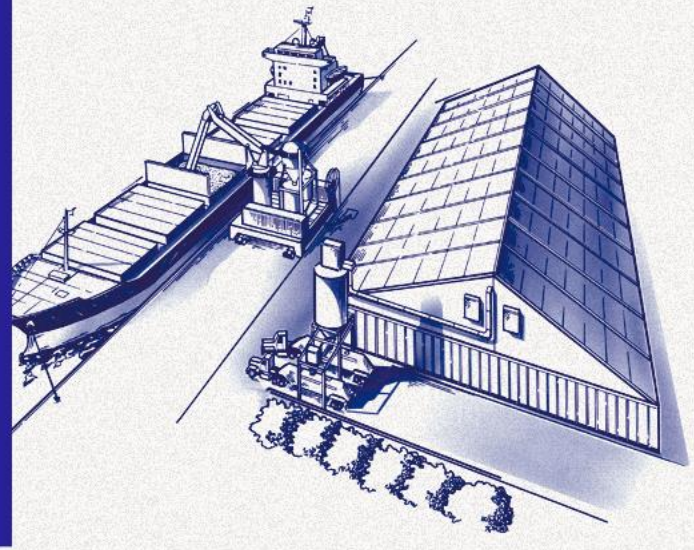

INTERCEM

SHIPPING FORUM

Export markets for European cement

-

A shipping perspective

Ad Ligthart

Athens, 23 January 2018

CEMENT DISTRIBUTION CONSULTANTS

Cement Distribution Consultants
an introduction

Market knowledge	Consulting	Project / interim management

• The global cement industry on Google Earth.
• The most comprehensive global database on waterside cement plants, waterside grinding plants and terminals.
• www.cementdistribution.com (a free and comprehensive website on cement trade and distribution).
• Authors of the Handbook on Global Cement Trade and Distribution.
 	
• 36 Years experience.
	• The ability to advise customers on every aspect of cement and clinker trade and distribution including strategical, economical, logistical, technical and operational aspects as well as sourcing, shipping, facilities, handling systems, etc., etc.
	• A clear vision on port and facility design that can adapt to changing trade and industry conditions.
	• Projects realised on every continent.
	• Currently consultant to the two largest cement terminals in the world.
		• Substantial experience in realising projects and managing complete logistical chains.
		• Examples:
		  • Setting up and managing the cement and fly ash supply to a large construction project including self-discharging cement carriers, floating terminal, etc.
		  • Redevelopment of a large brown field bulk terminal.
		  • Setting up a fly ash import operating
		  • Resolving operational and managerial problems of a grinding facility.

CEMENT DISTRIBUTION CONSULTANTS

Contents of presentation

- Global cement trade developments
- The European cement exporters
- The Americas
- West Africa
- Mediterranean
- Atlantic and Baltic
- Final considerations

CEMENT DISTRIBUTION CONSULTANTS

Global cement trade developments

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Global trade developments

- A glut of exportable clinker and cement volumes is available with a downward pressure on F.O.B prices. This glut will stay for quite some time.
    - Long-term very substantial overcapacity in China
    - Iran, Saudi Arabia, Indonesia (re) enter the market
    - Turkey, Vietnam, Pakistan keep adding capacity larger than their consumption growth
    - Structural cement surpluses in South Europe, UAE, Thailand, etc.
- Shipping prices are slowly but steadily rising but remain low compared to pre-crisis levels
- Trade in cementitious materials is growing and becomes more global

CEMENT DISTRIBUTION CONSULTANTS

Global trade developments

Global seaborne trade in cement and clinker in 2017 reached approx. 121 mt. In addition another 96 mt was distributed by sea domestically.

Especially seaborne clinker trade increased reaching approx. 54 mt. Bulk cement seaborne trade stayed at 52 mt and bagged cement shipments dropped slightly to 15 mt.

Seaborne domestic distribution in 2017 consisted of approx. 10 mt clinker 75 mt bulk cement and 11 mt of bagged cement.

Of all seaborne transport of cement and clinker in 2017 about 83 mt was transported by bulk carriers (Handysize and larger), 35 mt by coastal cargo vessels and about 99 mt by self-discharging cement carriers.

CEMENT DISTRIBUTION CONSULTANTS

Global trade developments

- Key growth markets are cement imports into the US and clinker imports into Africa but regional trade around Europe and within Asia are increasing too.

- The long-term export availability of low priced cement and (especially) clinker, in combination with low shipping prices makes it uneconomical to build integrated cement plants in coastal areas wherever in the world. It is more economical to import. New coastal cement production facilities will be grinding plants (with blending capability).

- The very large difference between the CIF costs of imported cement (or clinker) and domestic cement prices makes importing highly attractive.

CEMENT DISTRIBUTION CONSULTANTS

The European cement exporters

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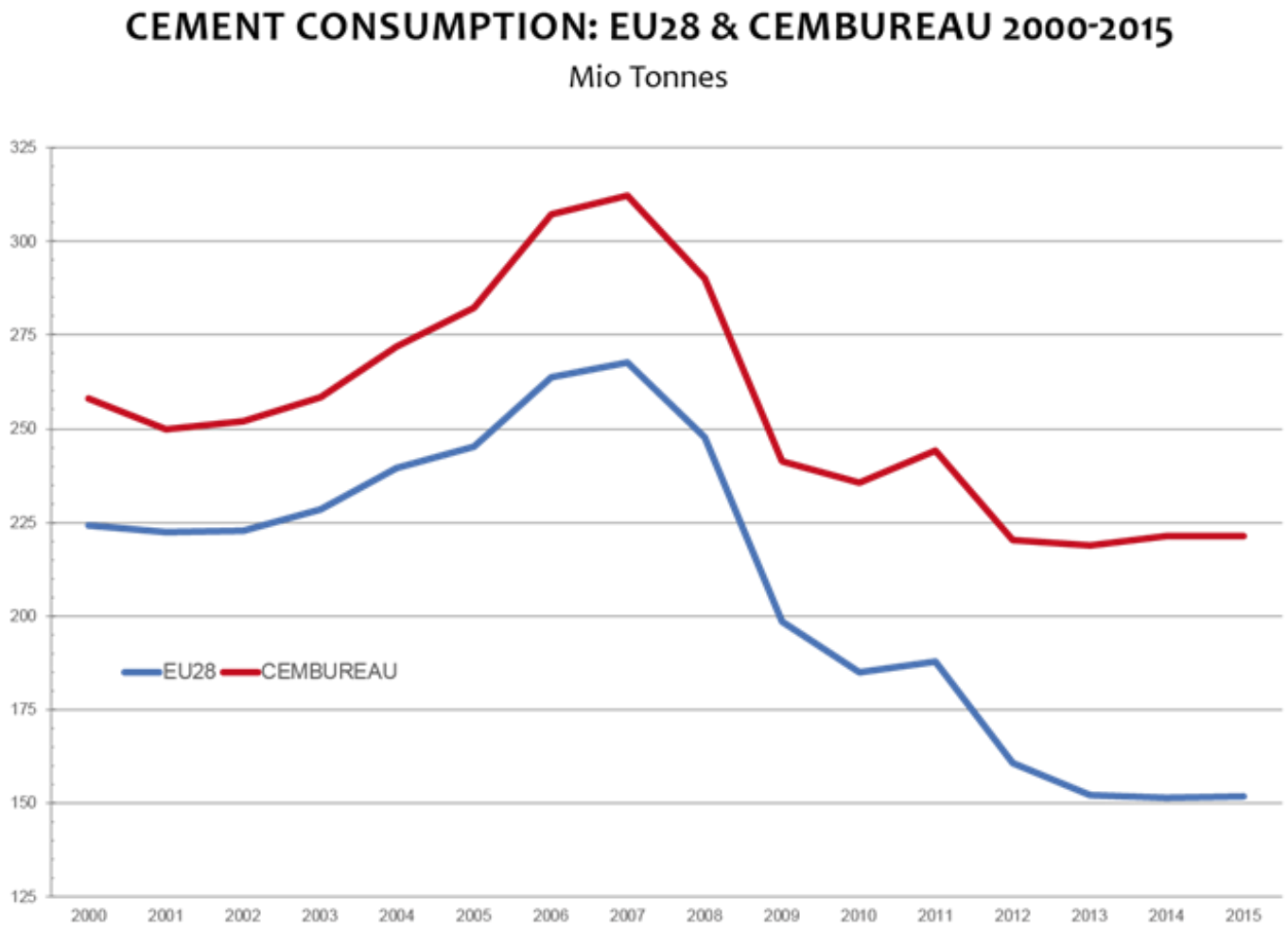
CONSULTANTS

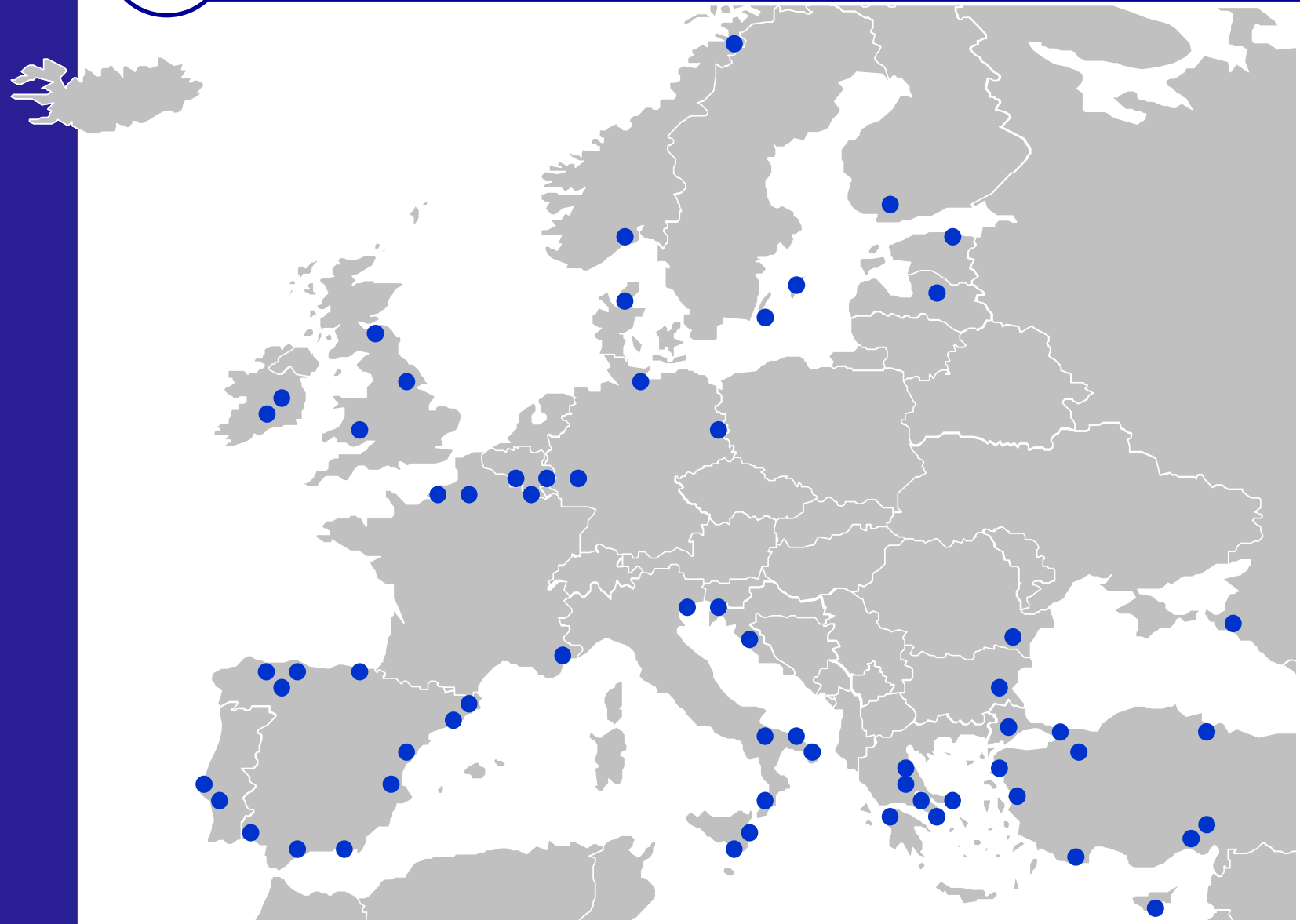
Europe has cement for export!



Source: CEMBUREAU

CEMENT DISTRIBUTION CONSULTANTS

Global trade developments



With the North African import markets disappearing, European cement and clinker exports have to move to West Africa and the Americas. This requires larger vessels, which is becoming a problem for several plants. Exporting via general ports is a possibility but has additional trucking cost and is difficult for bulk cement.

CEMENT DISTRIBUTION CONSULTANTS

The Americas

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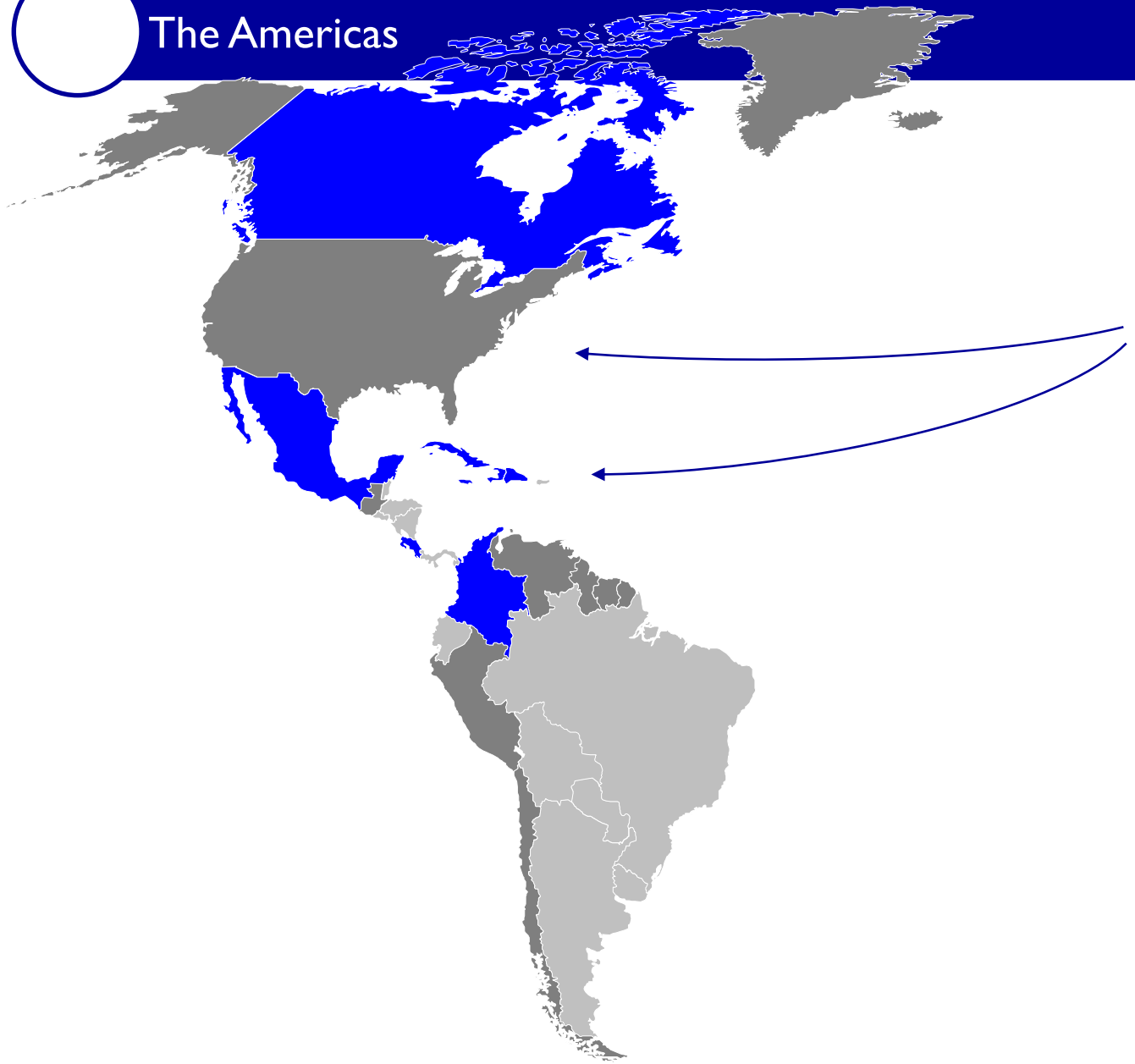
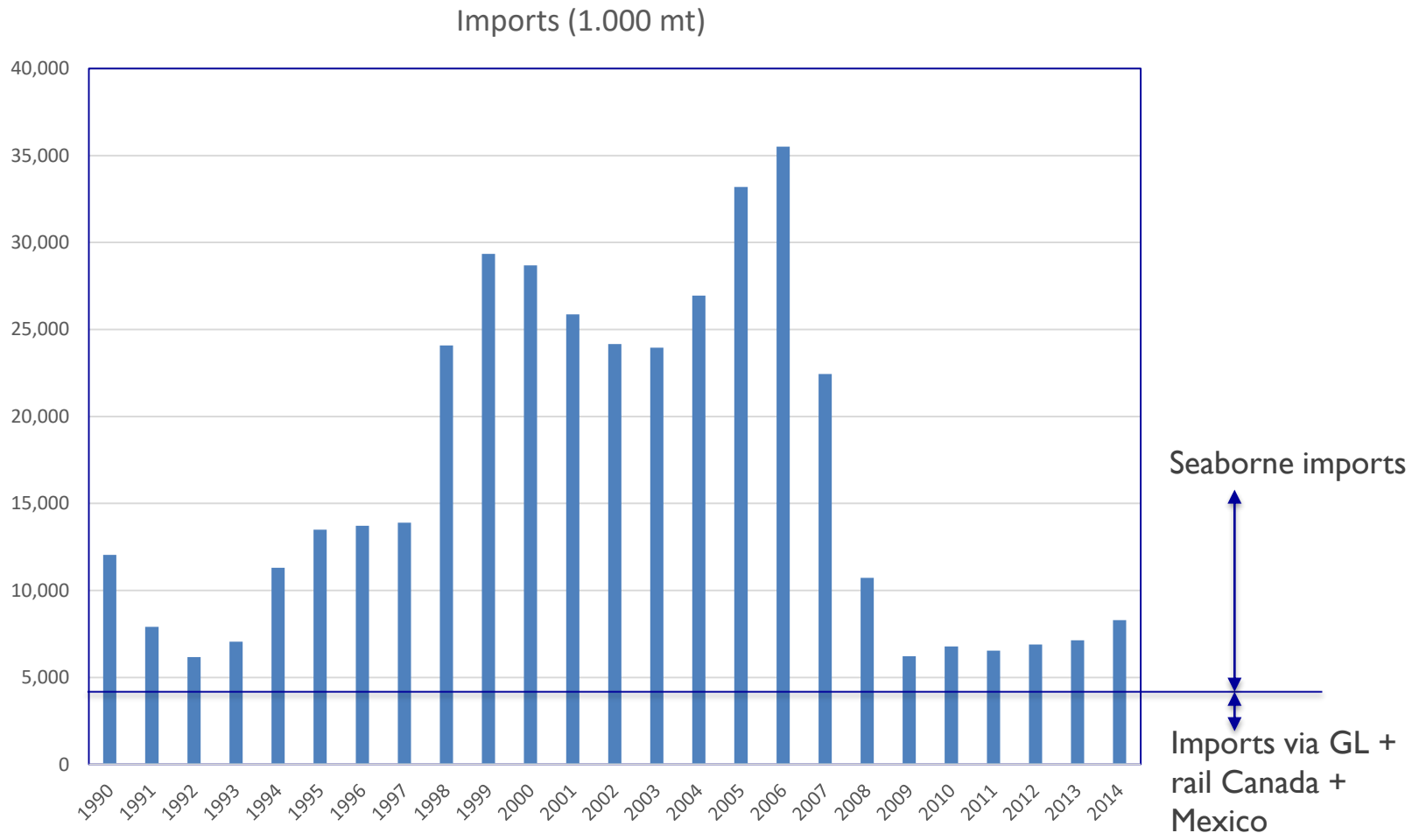
The Americas



The trading markets in the Americas can be subdivided into North America which is almost entirely bulk cement, and the Caribbean (including Colombia), which is a market for clinker and bagged cement (incl. big bags). For the Caribbean Handysize vessels are used. For North America the ship sizes range between Handysize and Supramax.

CEMENT DISTRIBUTION CONSULTANTS

The volatile US import market

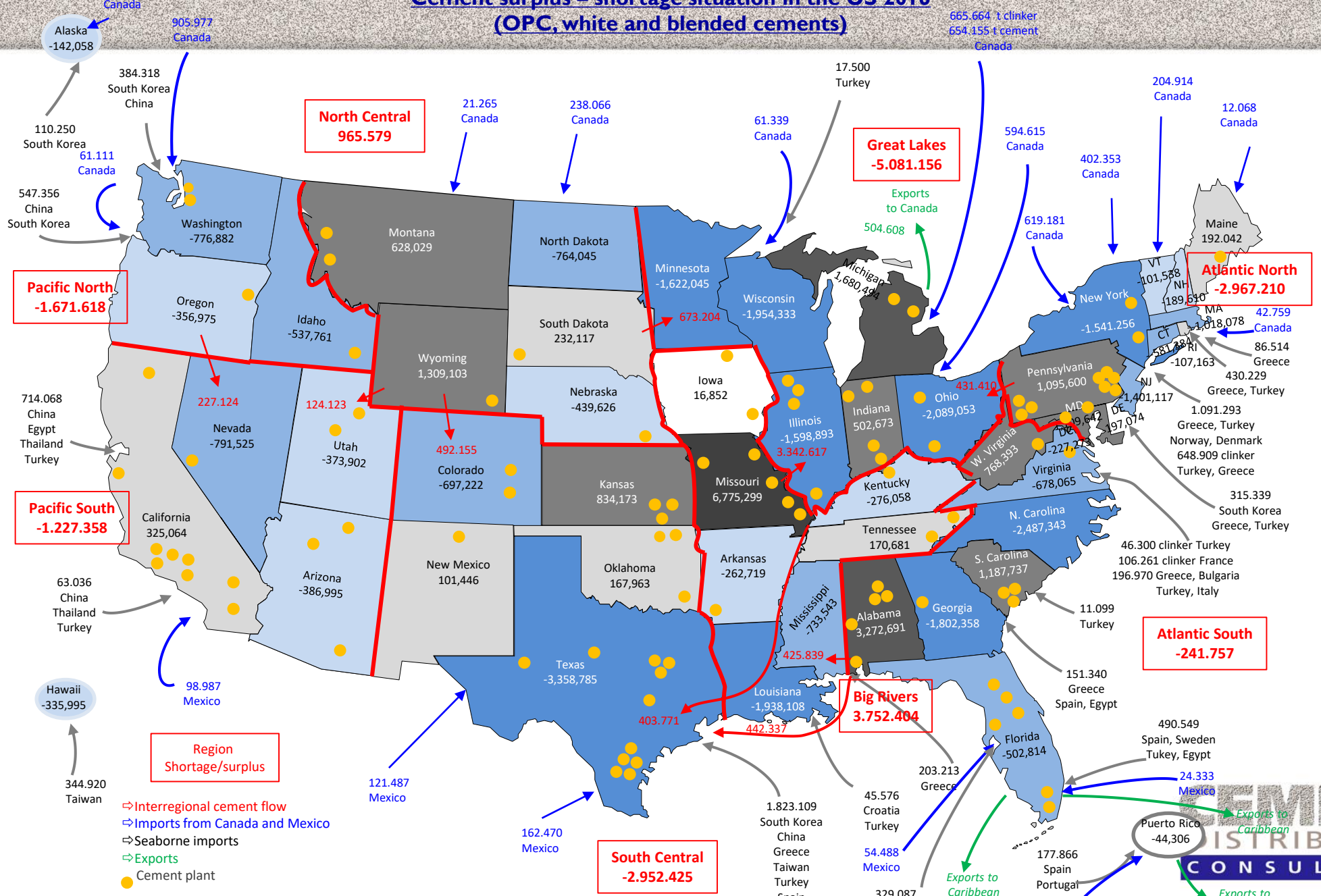


Source: Global Cement Report

CEMENT DISTRIBUTION CONSULTANTS

A bit of history of US cement imports

Cement surplus – shortage situation in the US 2016
(OPC, white and blended cements)



Notes:

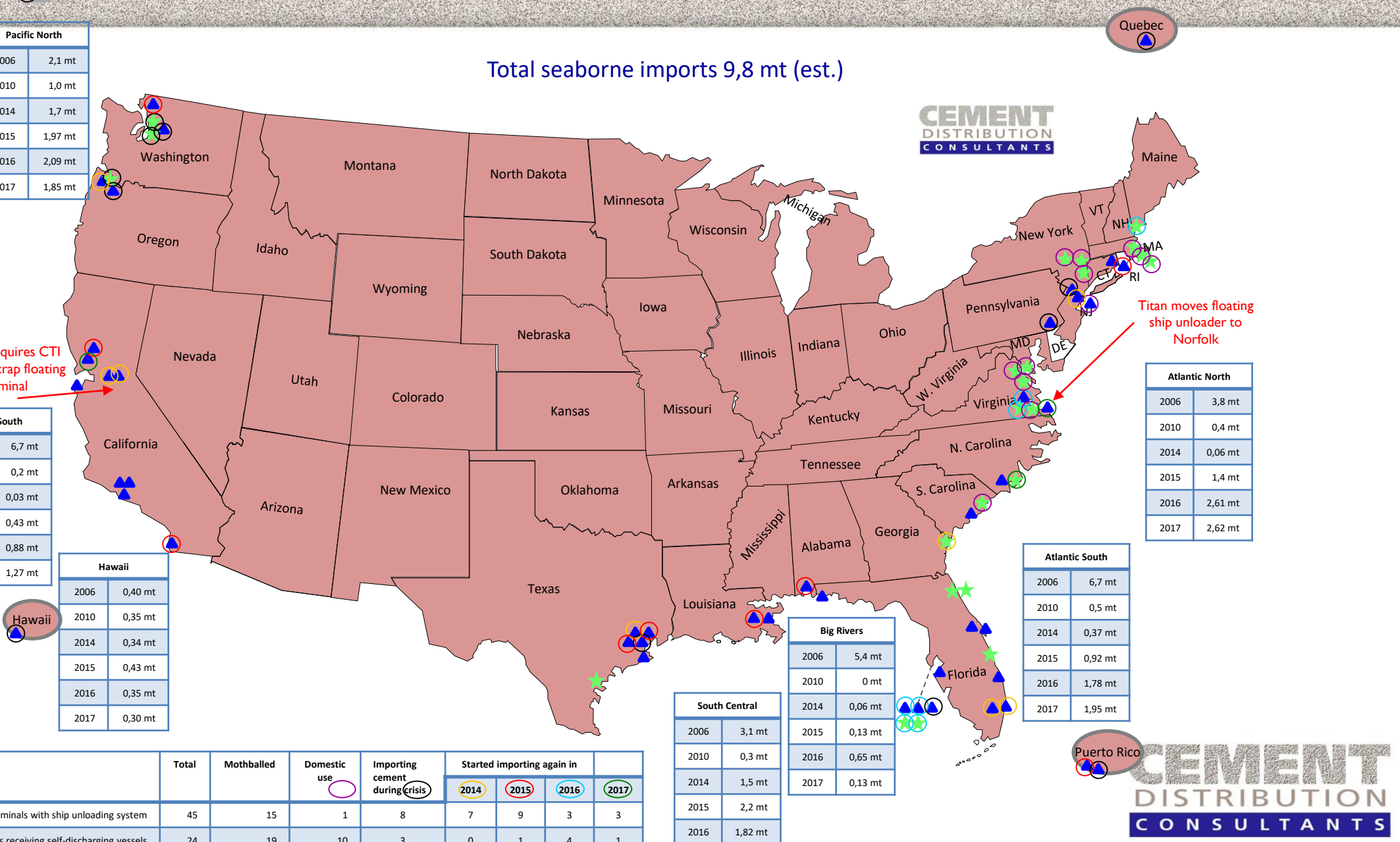
- States with a higher cement production than cement consumption are shown in shades from light grey to black.
- States with a higher cement consumption than cement production are shown in shades from light blue to dark blue.
- Figures are based on USGS consumption and production figures. Where production figures were given per group of sates, the production figure per states has been estimated by Cement Distribution Consultants
- Seaborne import shipments of less than 500 tons have not been taken into account.

Total seaborne imports 8.521.056 tons (excl. Canada & Mexico)
Total seaborne imports 9.719.189 (incl. Canada & Mexico)

CEMENT DISTRIBUTION CONSULTANTS

US cement terminals in 2017

Total seaborne imports 9,8 mt (est.)



Pacific North	
2006	2,1 mt
2010	1,0 mt
2014	1,7 mt
2015	1,97 mt
2016	2,09 mt
2017	1,85 mt

Pacific South	
2006	6,7 mt
2010	0,2 mt
2014	0,03 mt
2015	0,43 mt
2016	0,88 mt
2017	1,27 mt

Hawaii	
2006	0,40 mt
2010	0,35 mt
2014	0,34 mt
2015	0,43 mt
2016	0,35 mt
2017	0,30 mt

Atlantic North	
2006	3,8 mt
2010	0,4 mt
2014	0,06 mt
2015	1,4 mt
2016	2,61 mt
2017	2,62 mt

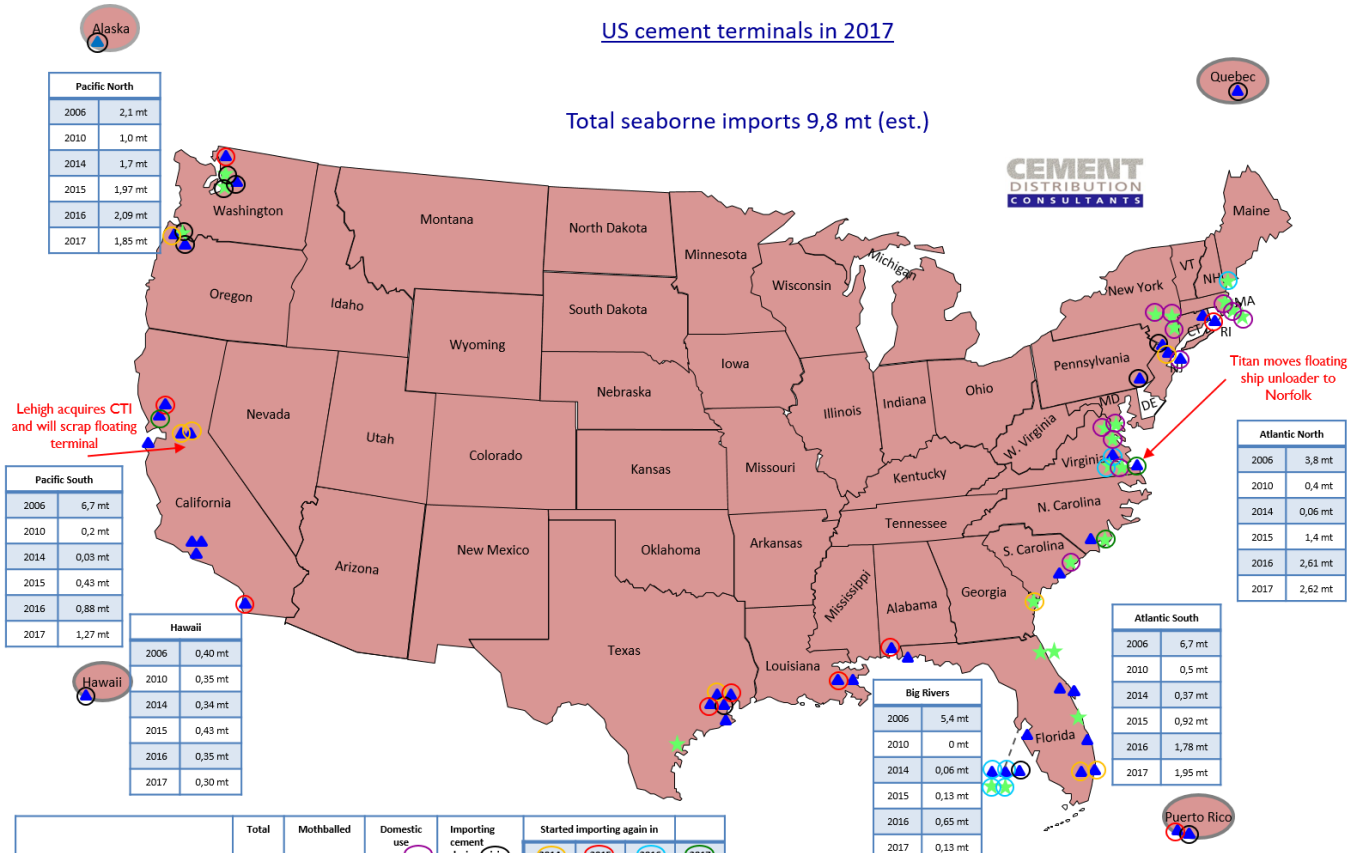
Atlantic South	
2006	6,7 mt
2010	0,5 mt
2014	0,37 mt
2015	0,92 mt
2016	1,78 mt
2017	1,95 mt

Big Rivers	
2006	5,4 mt
2010	0 mt
2014	0,06 mt
2015	0,13 mt
2016	0,65 mt
2017	0,13 mt

South Central	
2006	3,1 mt
2010	0,3 mt
2014	1,5 mt
2015	2,2 mt
2016	1,82 mt
2017	1,96 mt

	Total	Mothballed	Domestic use	Importing cement during crisis	Started importing again in			
					2014	2015	2016	2017
Terminals with ship unloading system	45	15	1	8	7	9	3	3
Terminals receiving self-discharging vessels	24	19	10	3	0	1	4	1
Total	69	34	11	11	7	10	7	3

What is the terminal situation in the US?



Pacific North	
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Hawaii	
2006	0,40 mt
2010	0,35 mt
2014	0,34 mt
2015	0,43 mt
2016	0,35 mt
2017	0,30 mt

Big Rivers	
2006	5,4 mt
2010	0 mt
2014	0,06 mt
2015	0,13 mt
2016	0,65 mt
2017	0,13 mt

Atlantic South	
2006	6,7 mt
2010	0,5 mt
2014	0,37 mt
2015	0,92 mt
2016	1,78 mt
2017	1,95 mt

Atlantic North	
2006	3,8 mt
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	Total	Mothballed	Domestic use	Importing cement during crisis	Started importing again in			
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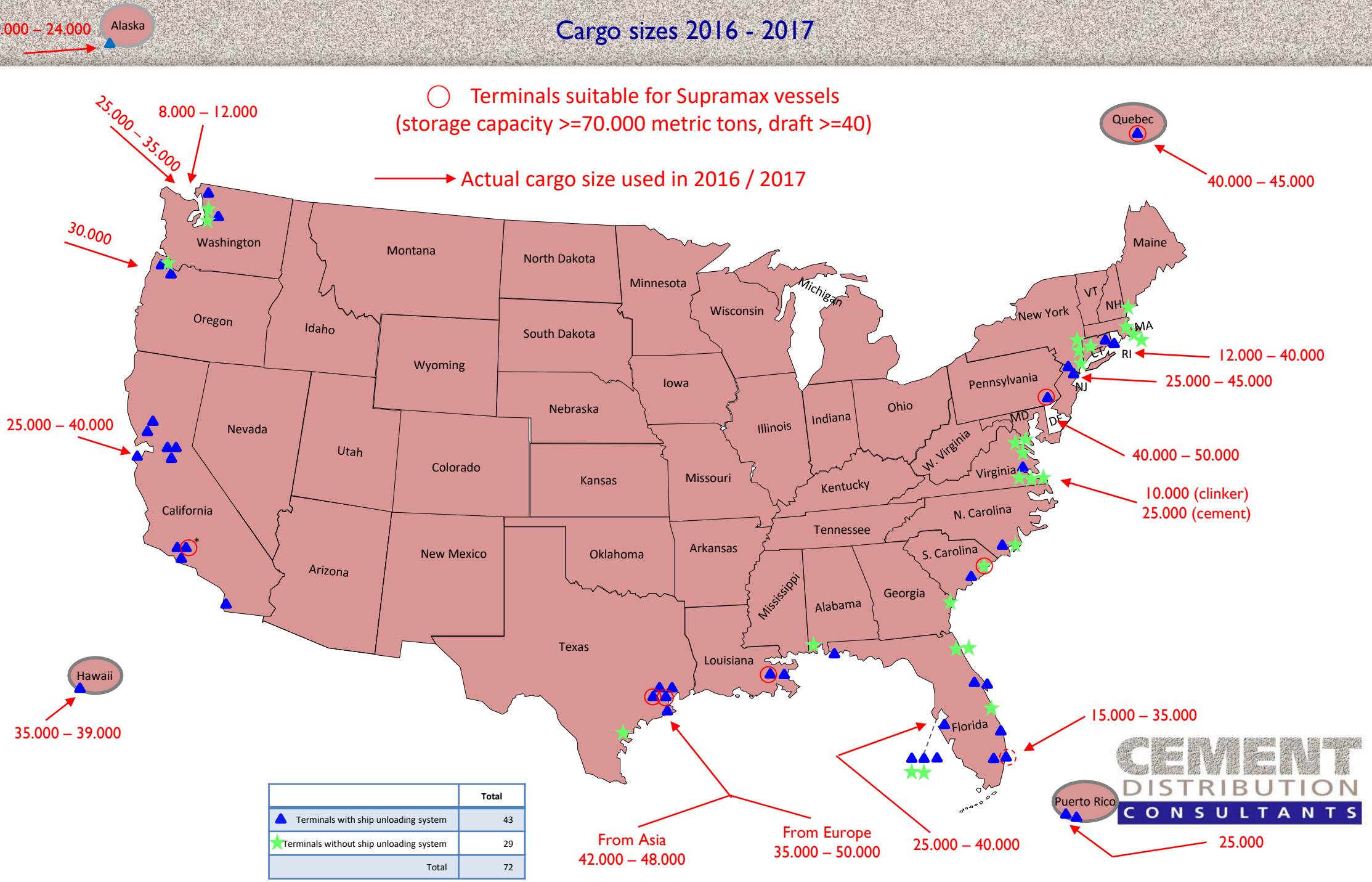
Terminals with ship unloading system	45	15	1	8	7	9	3	3
Terminals receiving self-discharging vessels	24	19	10	3	0	1	4	1
Total	69	341	11	11	7	10	7	3

During the crisis most US cement import terminals where closed and mothballed. Since 2014 terminals have opened again but found a changing industry. The terminal ownership is not in balance with producer market shares. Storage capacity is based on large Handysize vessels instead of the new generation of Supramaxes and Ultramaxes. Many terminals can only handle one type of material. Although terminal capacity is more than large enough, already a large number of upgrade and new building projects are on their way.

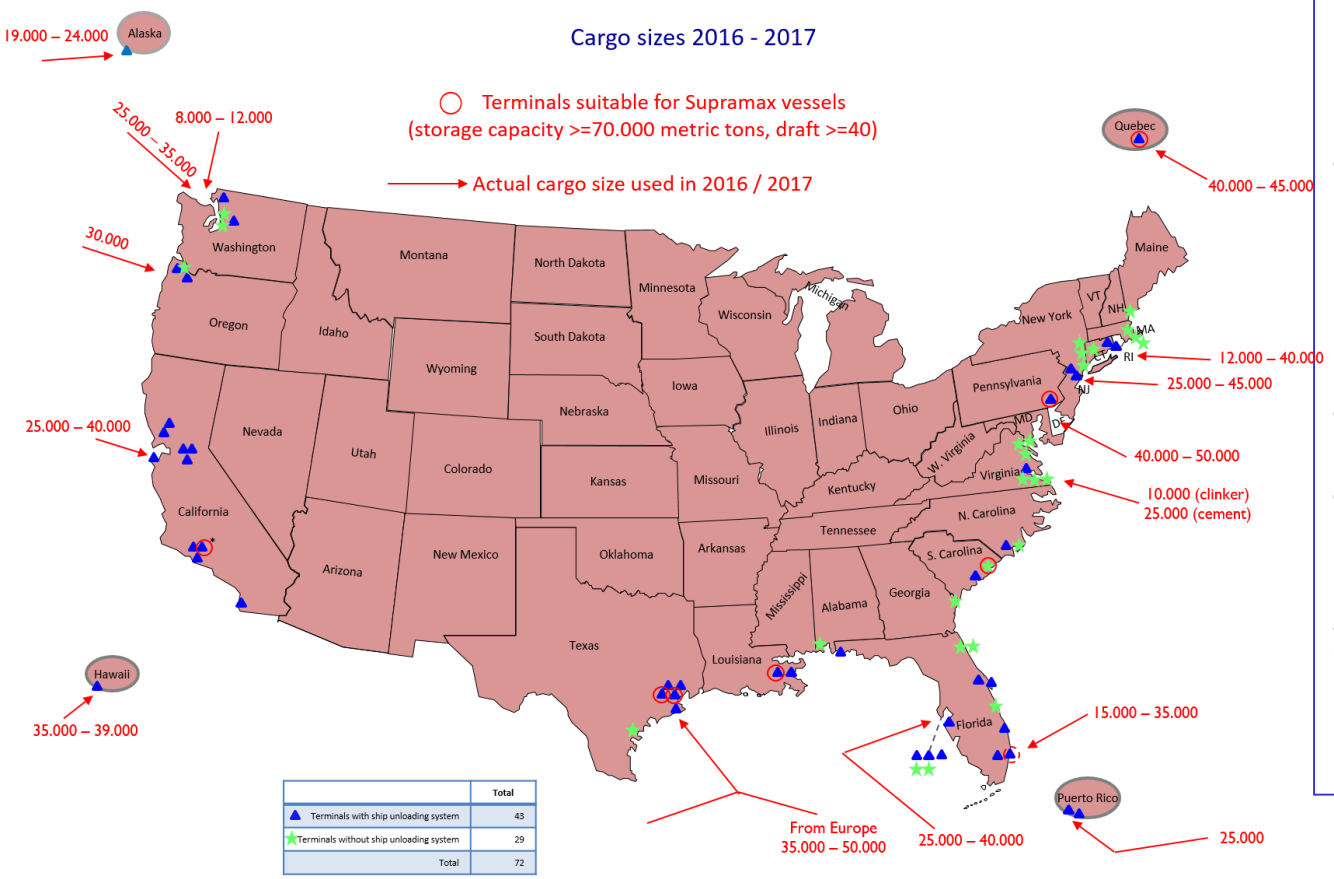
CEMENT DISTRIBUTION CONSULTANTS

Cargo sizes 2016 - 2017



	Total
Terminals with ship unloading system	43
Terminals without ship unloading system	29
Total	72

What is the terminal situation in the US?



	Total
Terminals with ship unloading system	43
Terminals without ship unloading system	29
Total	72

This map clearly shows that the terminals in the US have insufficient storage space. Only a handful terminals have the capability to receive Supramax / Ultramax vessels. Most shipments to the US are still Handysize vessels.

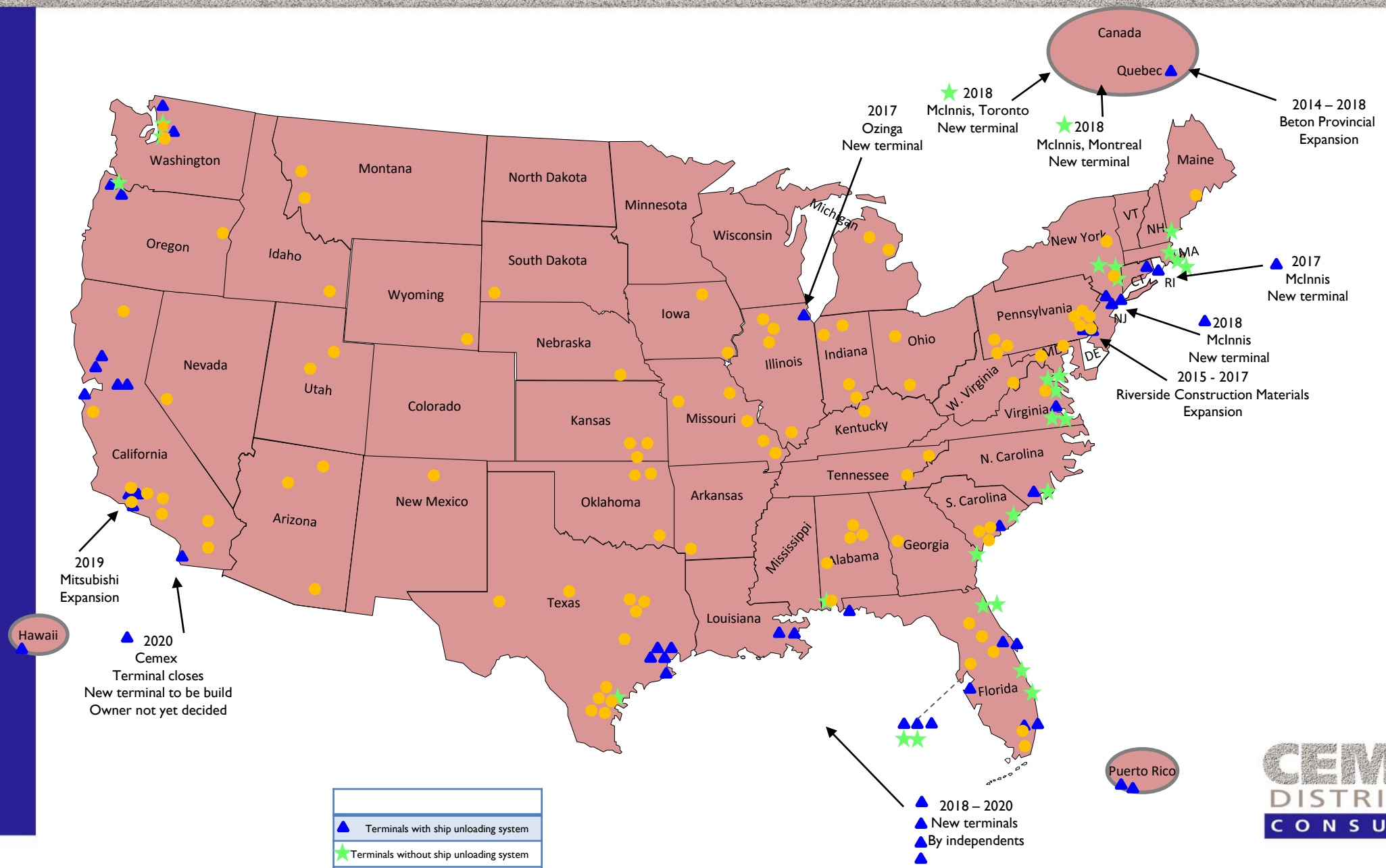
Total seaborne import volume 2016 is 9,7 million tons

Of which 20% in cargo sizes <20.000 tons
45% in cargos size between 20.000 and 40.000 tons
35% in cargo sizes > 40.000 tons
The largest cargo size was 52.000 tons

The current combination of low F.O.B. prices for exported cement and low shipping costs allows for this far from optimal shipping situation. This likely will continue for the next few years. But shipping prices are already improving and there will be times coming that the transport cost difference between Handysize, Handymax, Supramax and Ultramax vessels will be decisive for the viability of US cement imports.

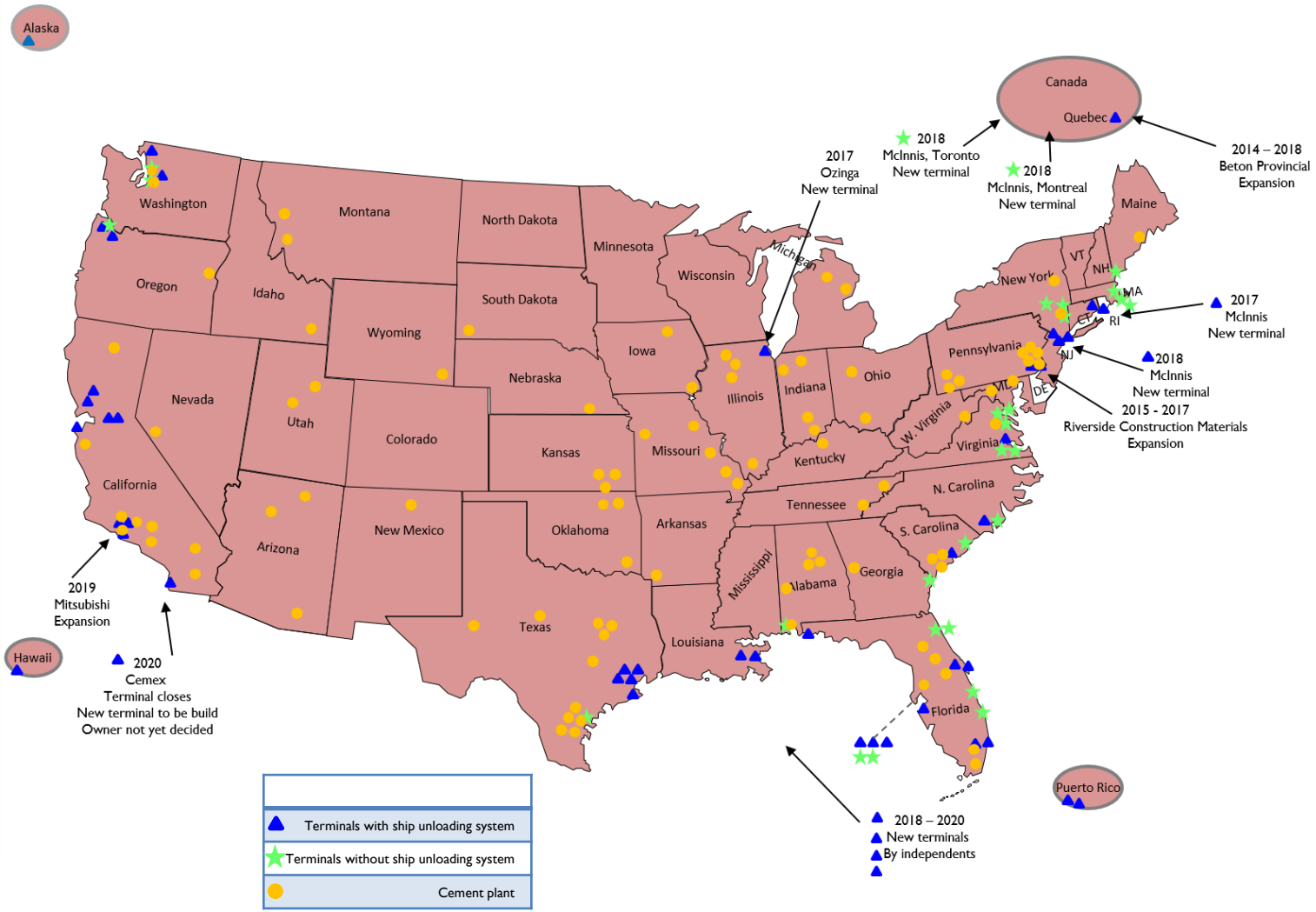
CEMENT DISTRIBUTION CONSULTANTS

New terminal projects since 2015



CEMENT DISTRIBUTION CONSULTANTS

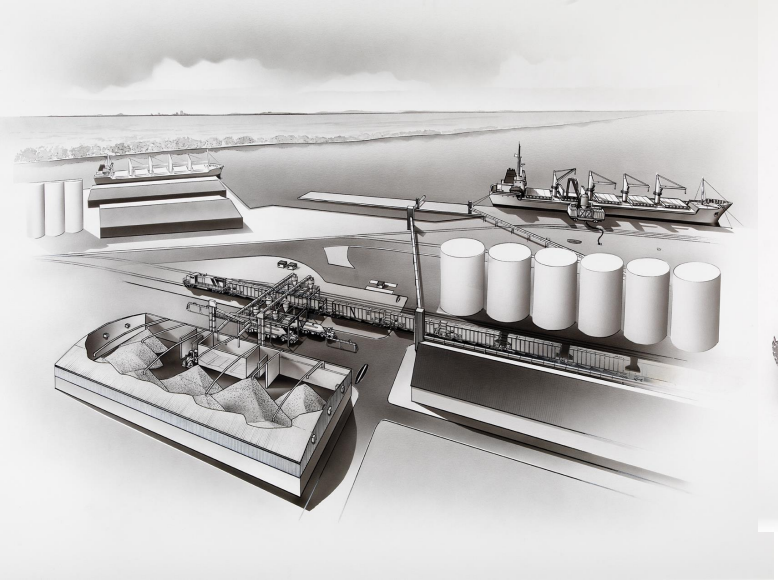
What is the terminal situation in the US?

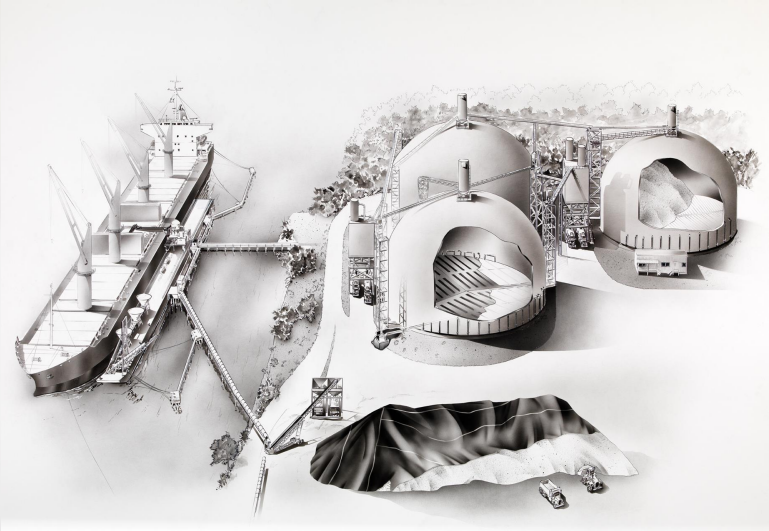


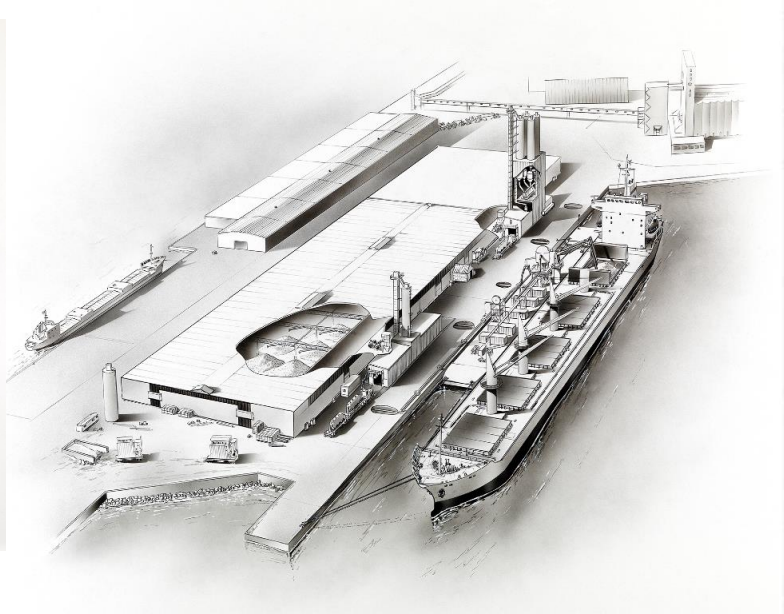
What is remarkable on all upgrade and new terminal projects on the Atlantic and Gulf coasts is that these are all done by newcomers / independents. The US producers that have their own terminals are not modernizing and overtime will be at a disadvantage. The current upgrade and new terminal projects in many cases can be called impressive and innovative.

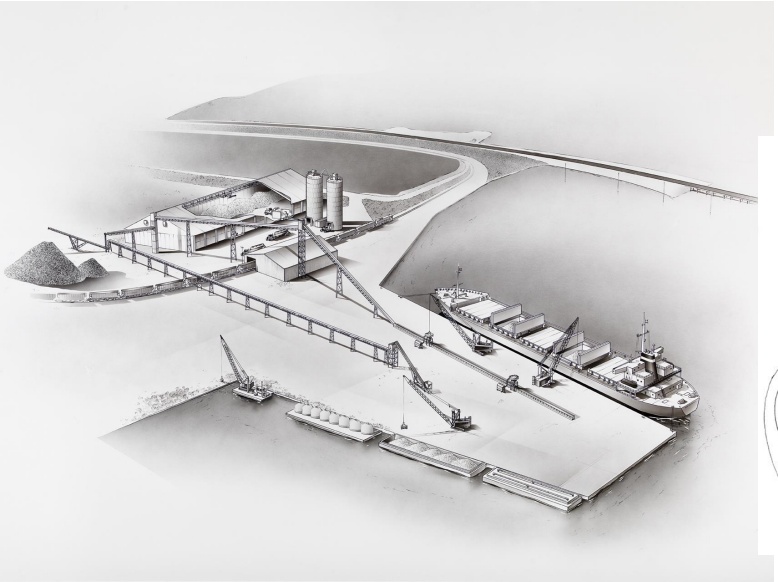
CEMENT DISTRIBUTION CONSULTANTS

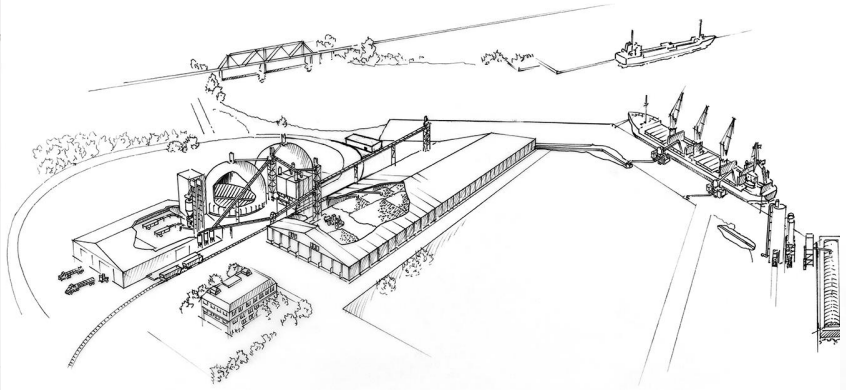
Terminal concepts for the US and Canada

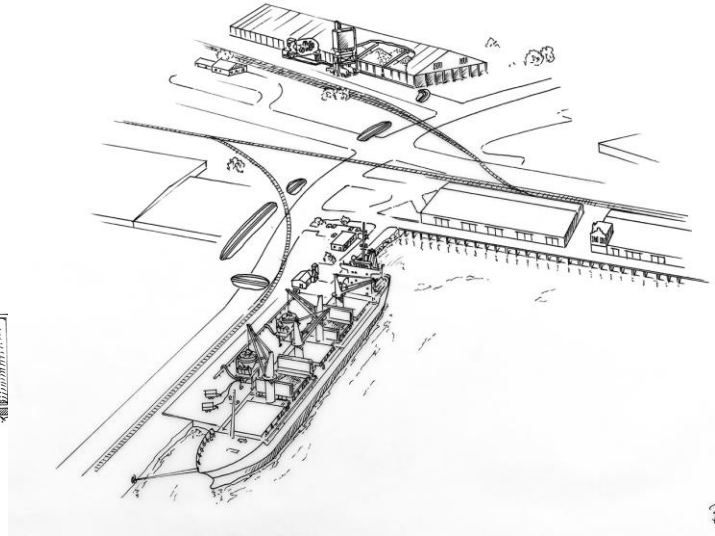




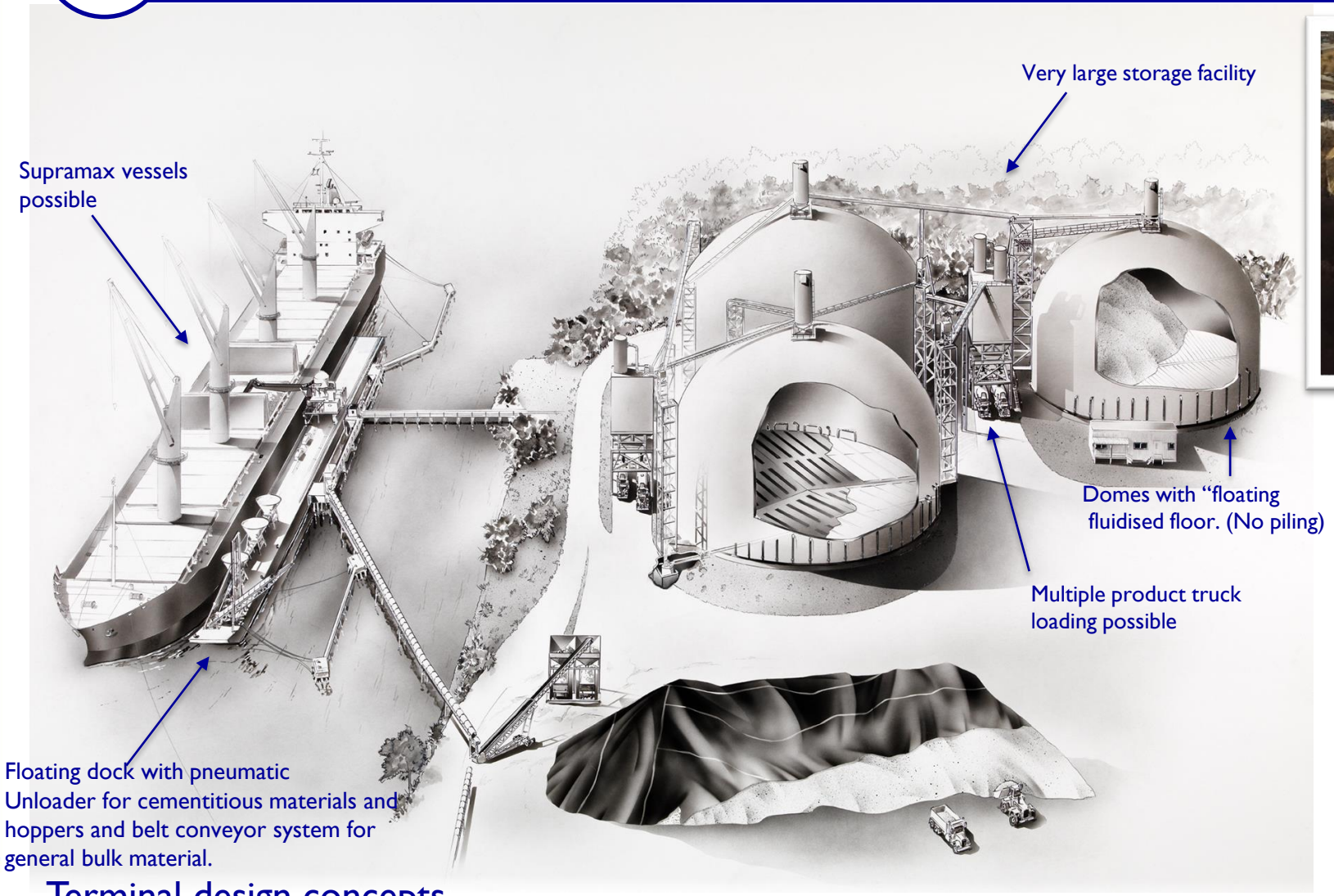








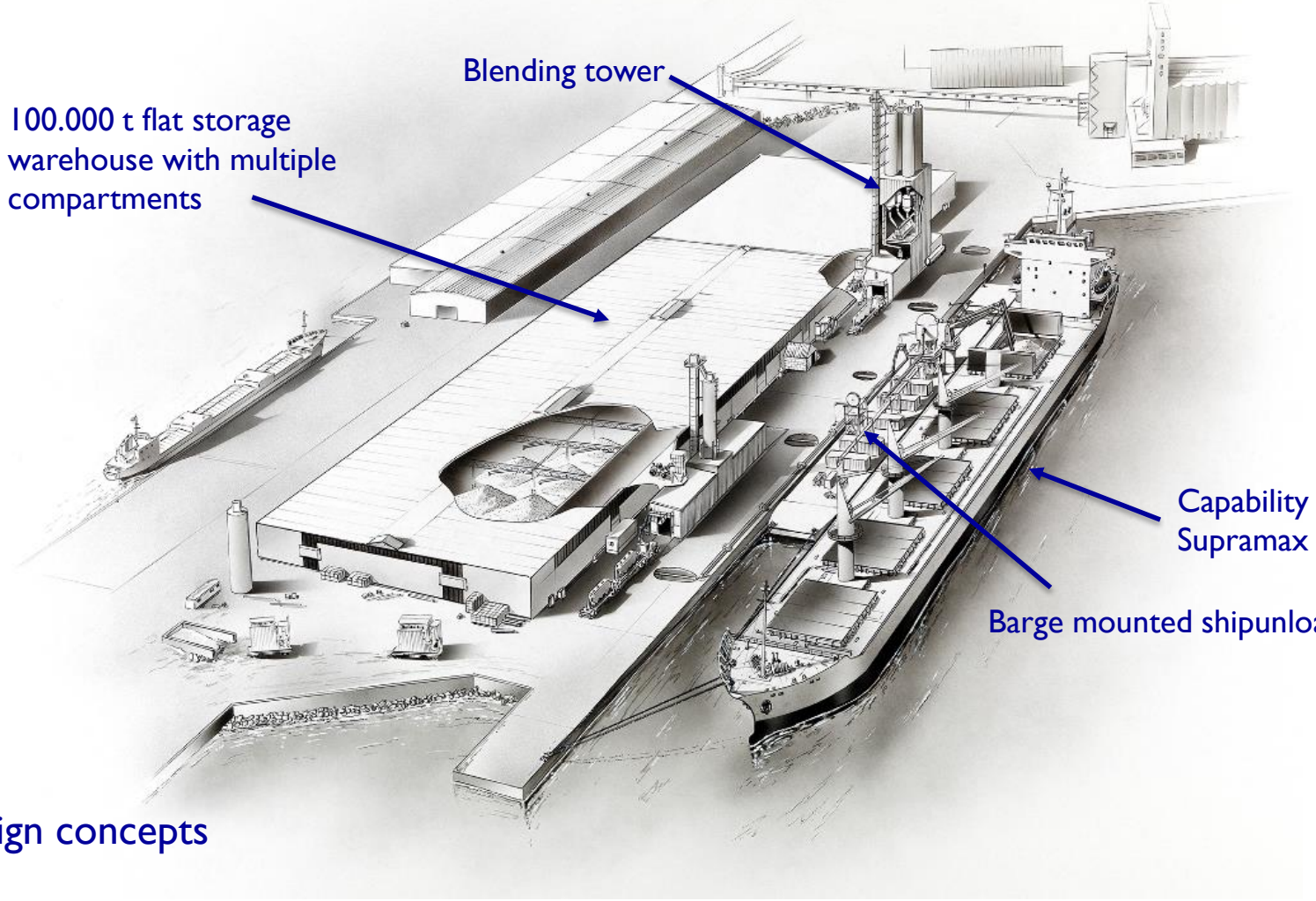
Terminal concepts for the US and Canada



Terminal design concepts

CEMENT DISTRIBUTION CONSULTANTS

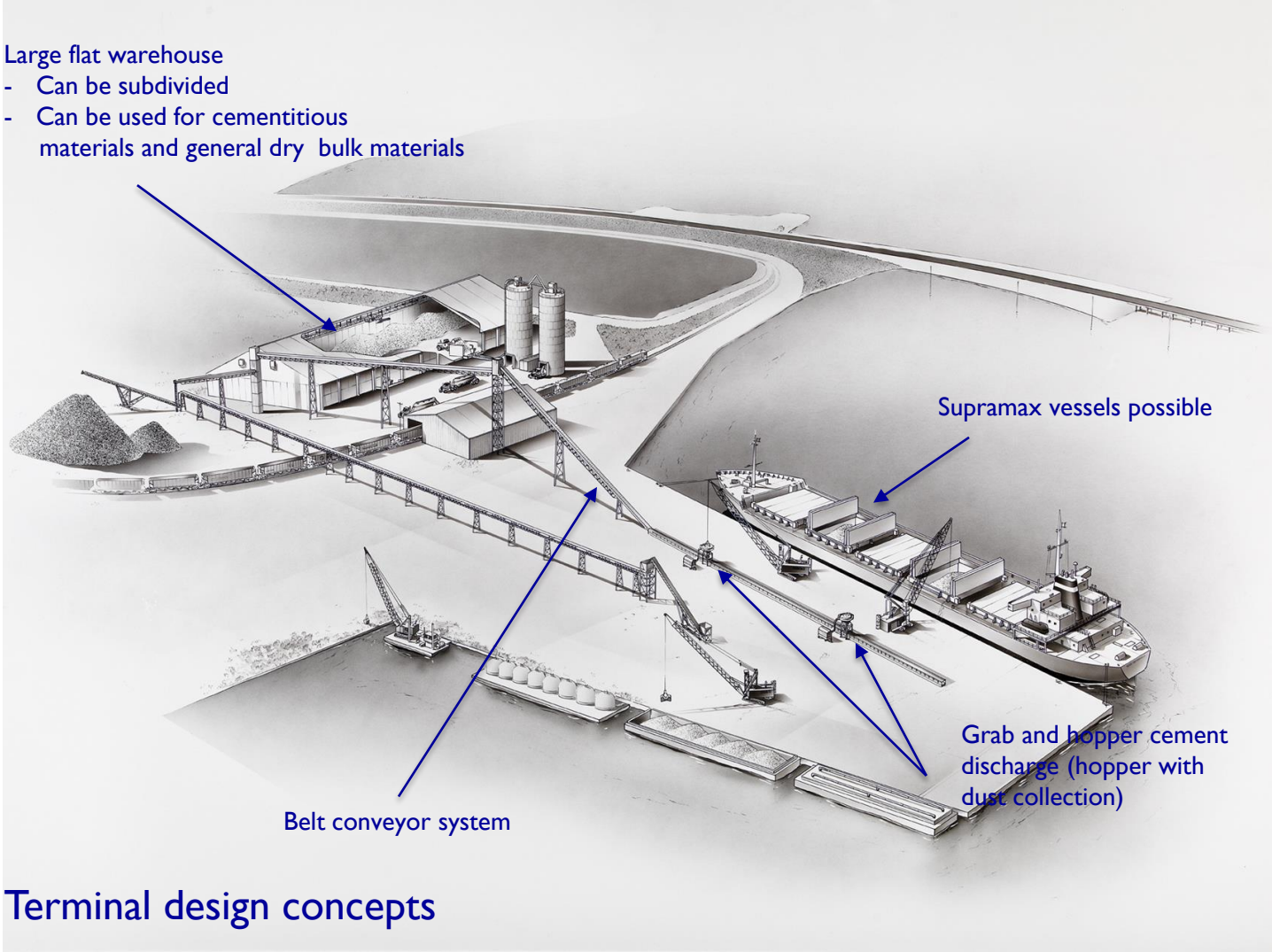
Terminal concepts for the US and Canada



Terminal design concepts

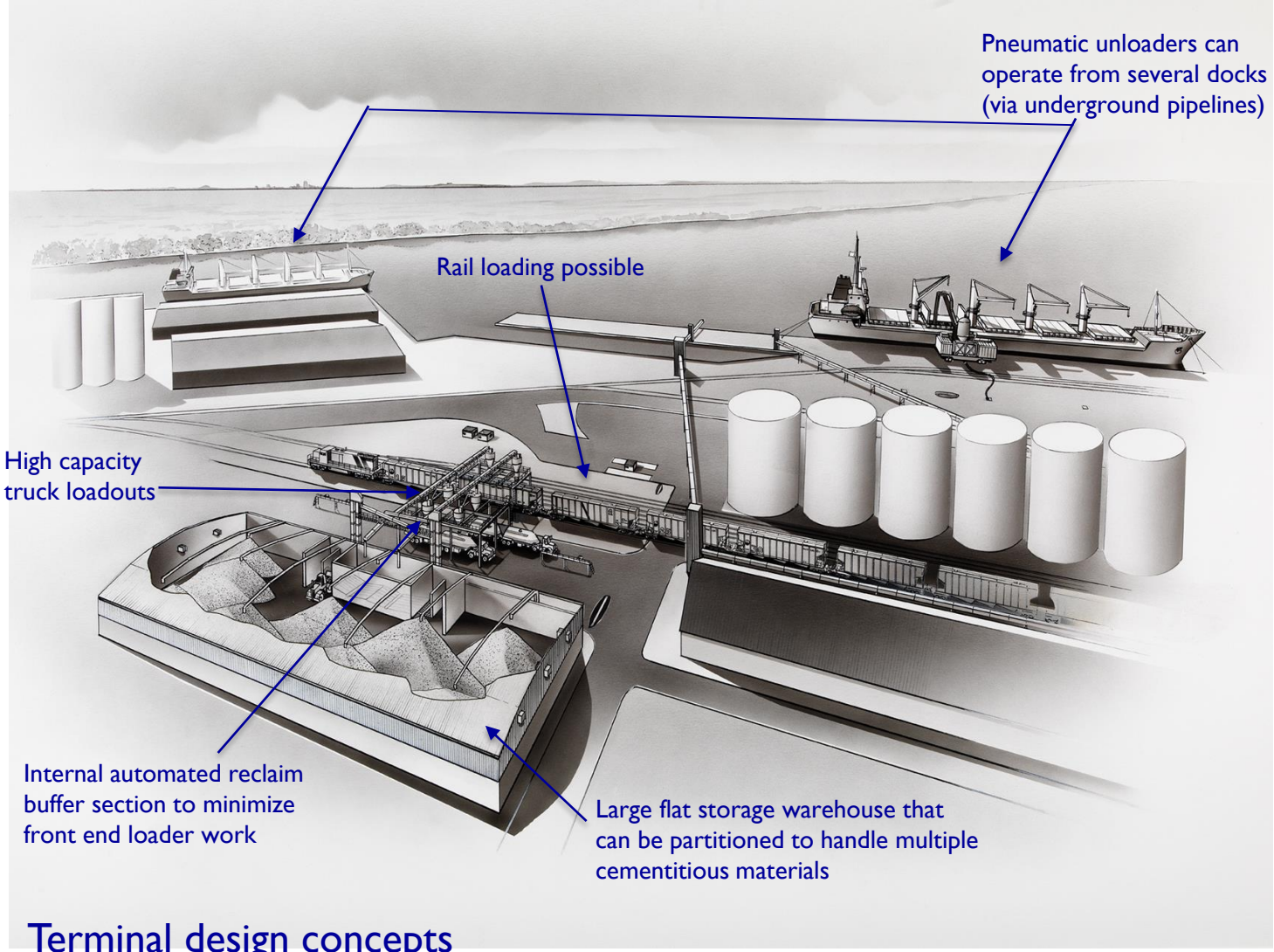
CEMENT DISTRIBUTION CONSULTANTS

Terminal concepts for the US and Canada



CEMENT DISTRIBUTION CONSULTANTS

Terminal concepts for the US and Canada

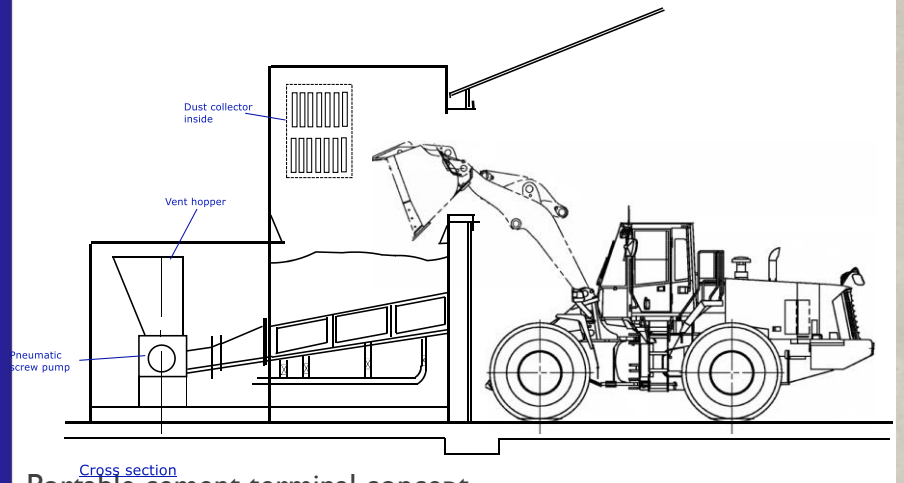


CEMENT DISTRIBUTION CONSULTANTS

Terminal design concepts

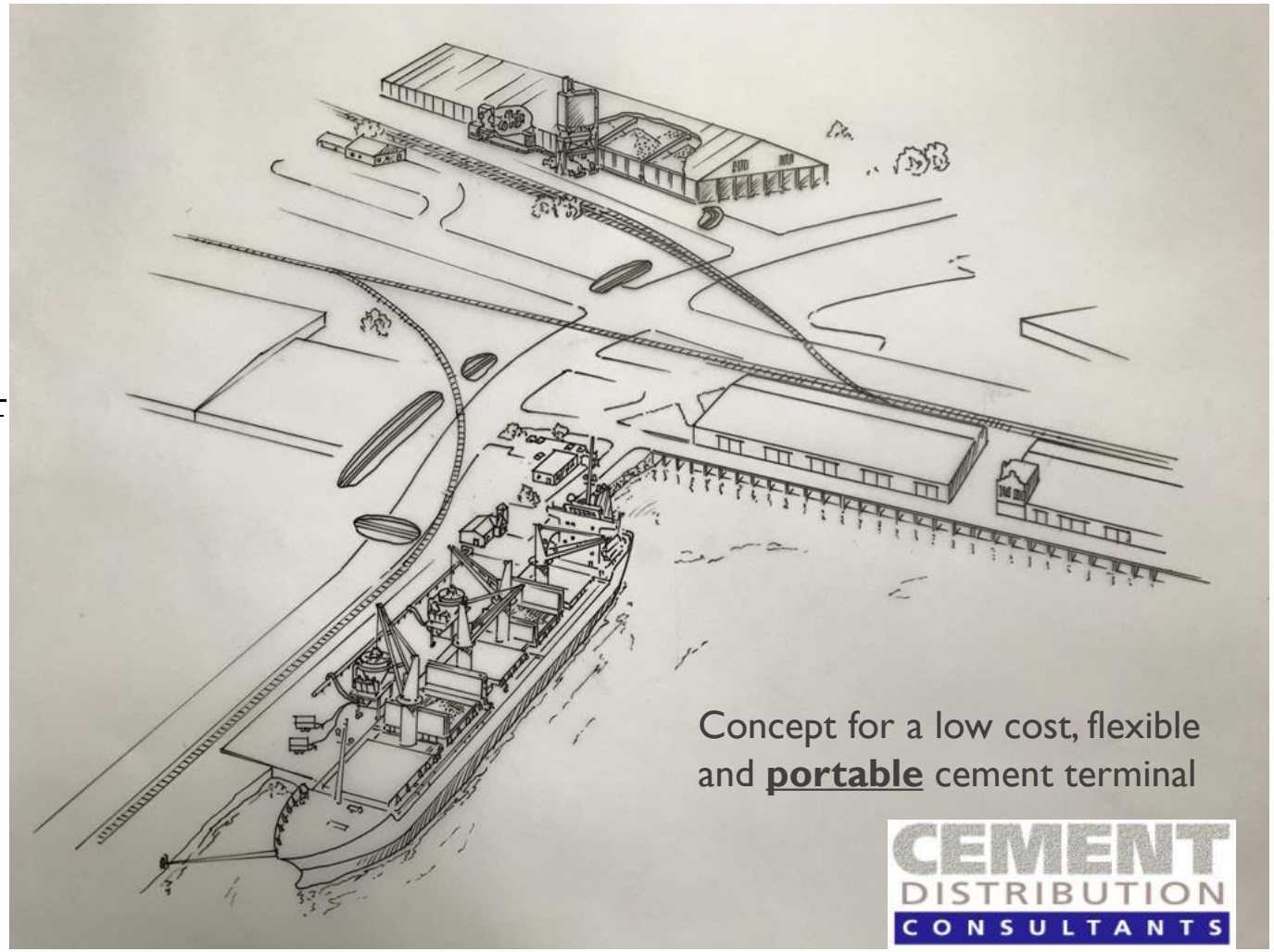
Terminal concepts for the US and Canada

CONTAINERIZED RECLAIM SYSTEM



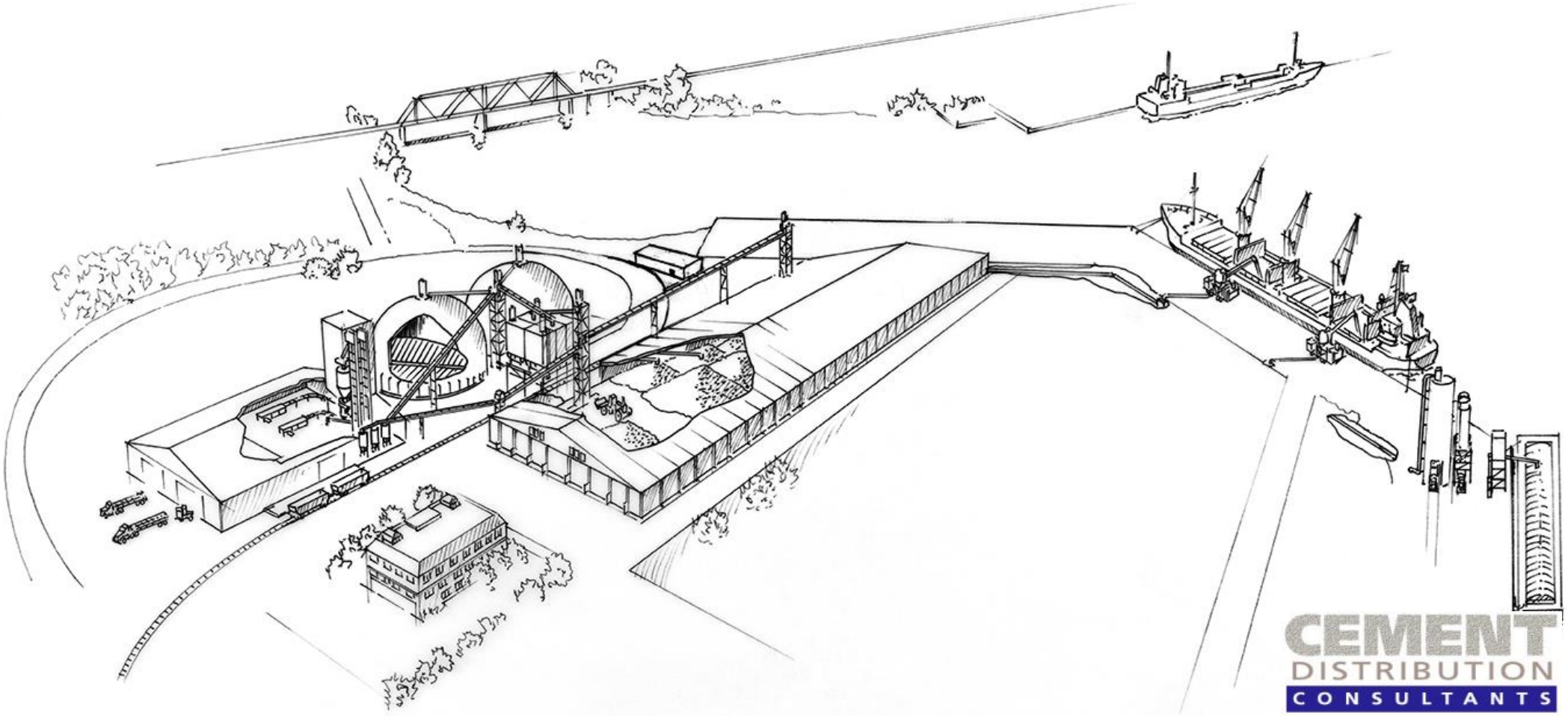
Portable cement terminal concept

- "Modular" ship unloading hoppers with pneumatic pumps
- Modular truck loading bins and support structures which only require a concrete slab
- Existing flat storage warehouse conversion or new warehouse that can be reused for other purposes
- Containerized reclaim system equipment machine rooms and MCC
- Removable pipelines, dust collectors, auxiliary equipment
- Portable office



Terminal design concepts

Terminal concepts for the US and Canada



Terminal design concepts

West Africa

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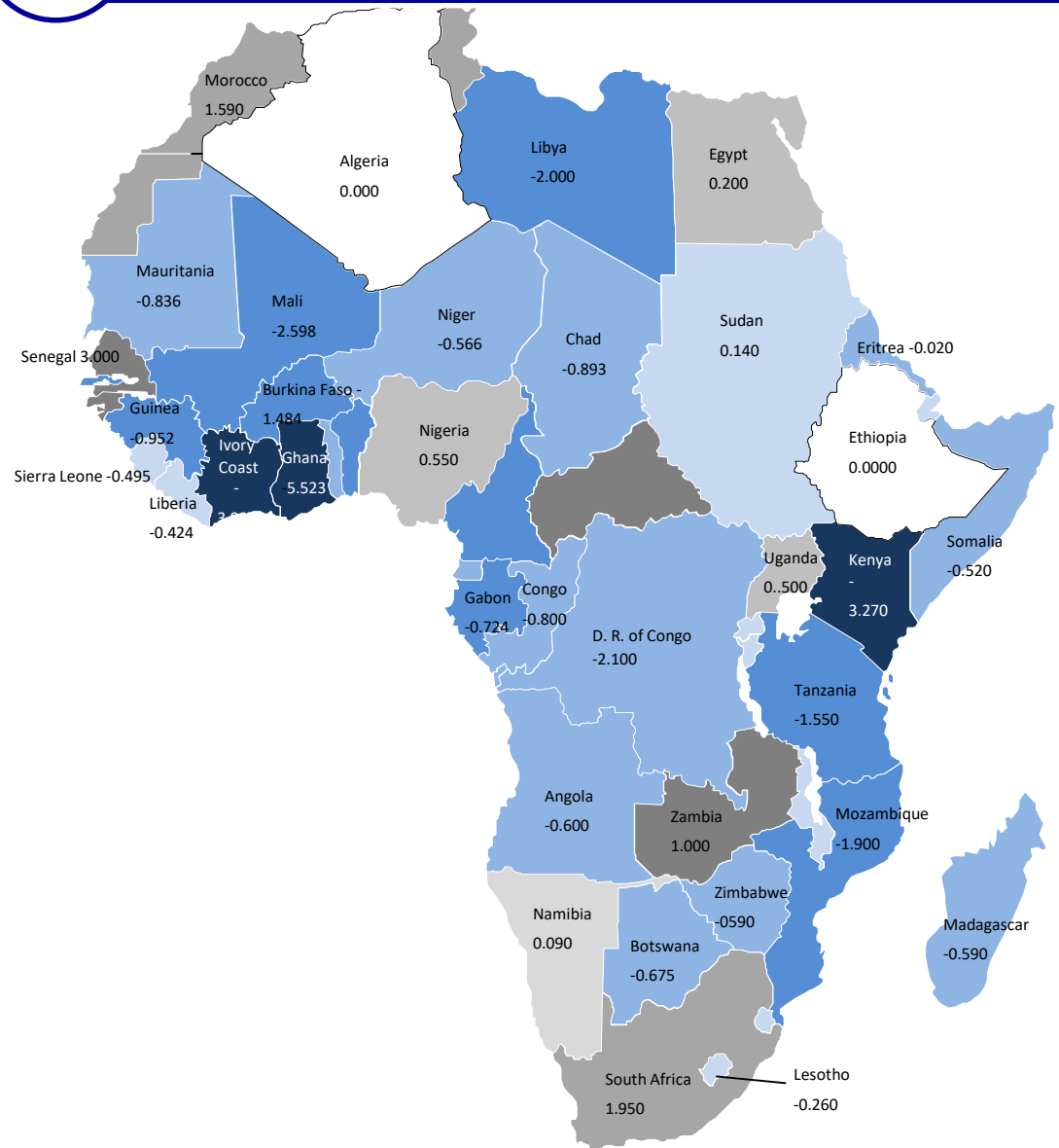
Statistics Africa



Statistics Africa Overall

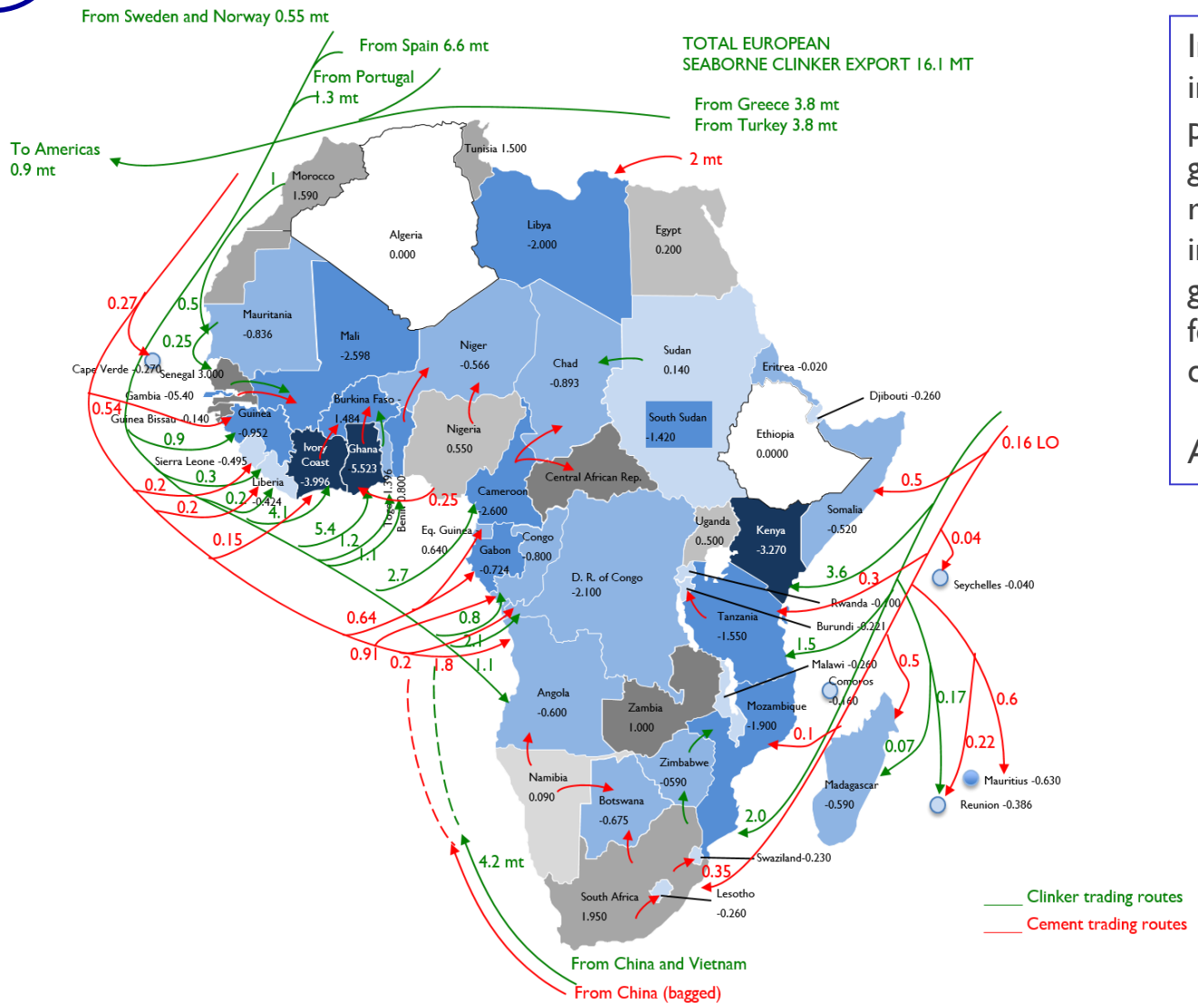
Cement consumption	:	242,9 mt
Cement production	:	235,5 mt
Cement imports	:	16,4 mt
Clinker imports	:	32,2 mt
Cement exports	:	9,0 mt
Clinker exports	:	6,3 mt

As cement and clinker exports remain within Africa the net difference is imported into Africa by sea

Seaborne cement imports	:	7,4 mt
Seaborne clinker imports	:	25,8 mt
Seaborne transfers within Africa	:	1,5 mt
Total seaborne tonnage	:	34,7 mt

CEMENT DISTRIBUTION CONSULTANTS

African trade routes



In Africa most countries claim to be self-sufficient in respect to cement production. This is only partially true as a lot of new production capacity is grinding plants that still need clinker. With the rapid rise of these grinding plants bagged cement imports have diminished but clinker imports have grown and look set to grow further. Apart from a few island nations there is very little trading in bulk cement.

All figures 2017 est.

CEMENT DISTRIBUTION CONSULTANTS

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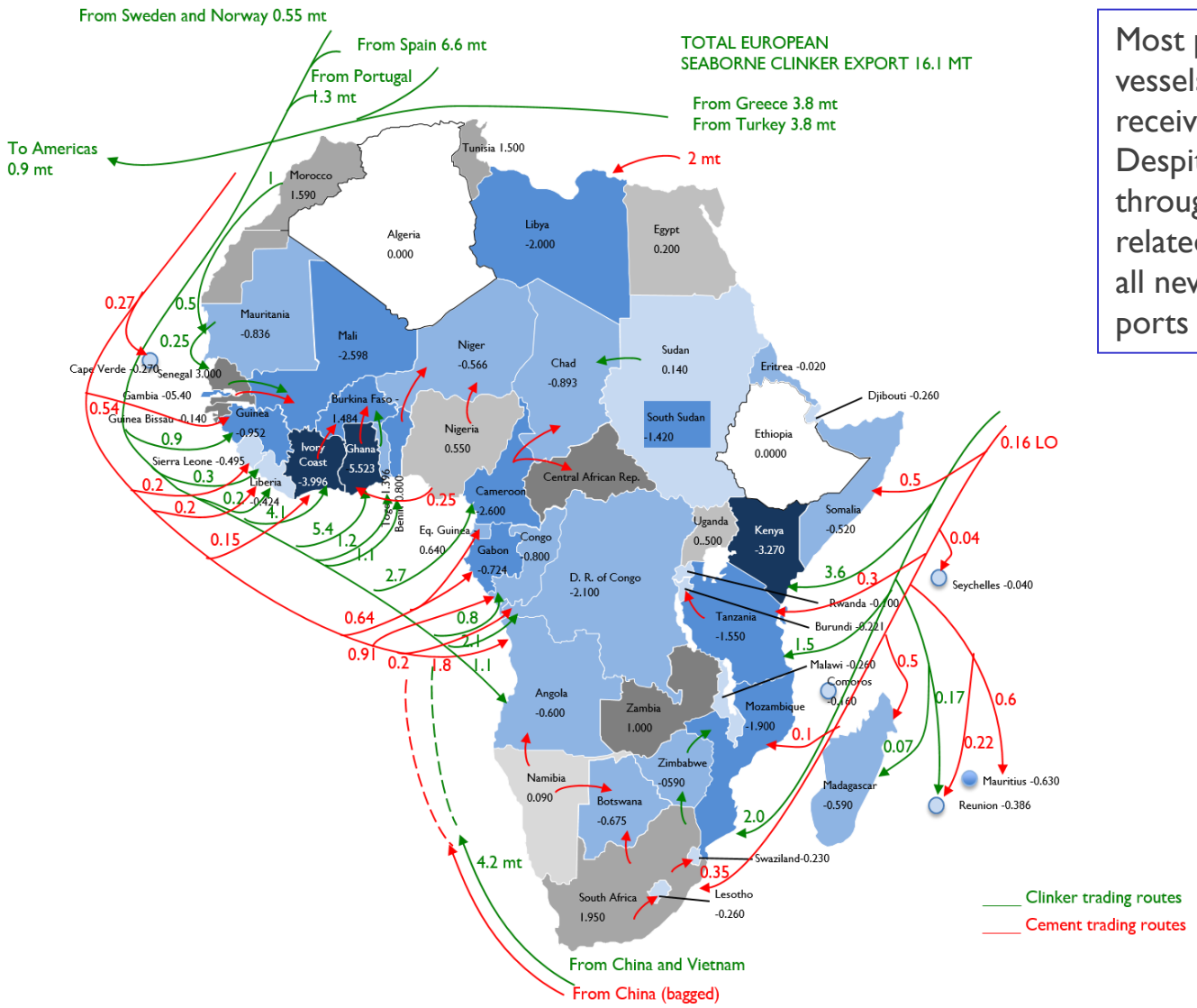

Most ports in Africa can receive only Handysize vessels although the number of ports that can receive Handymax / Supramax vessels is growing. Despite substantial port expansion work throughout the continent, congestion and the related delays and demurrage remain high. Almost all new grinding plants receive clinker via general ports only adding to the congestion.

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Clinker imports in Africa

CEMENT DISTRIBUTION CONSULTANTS

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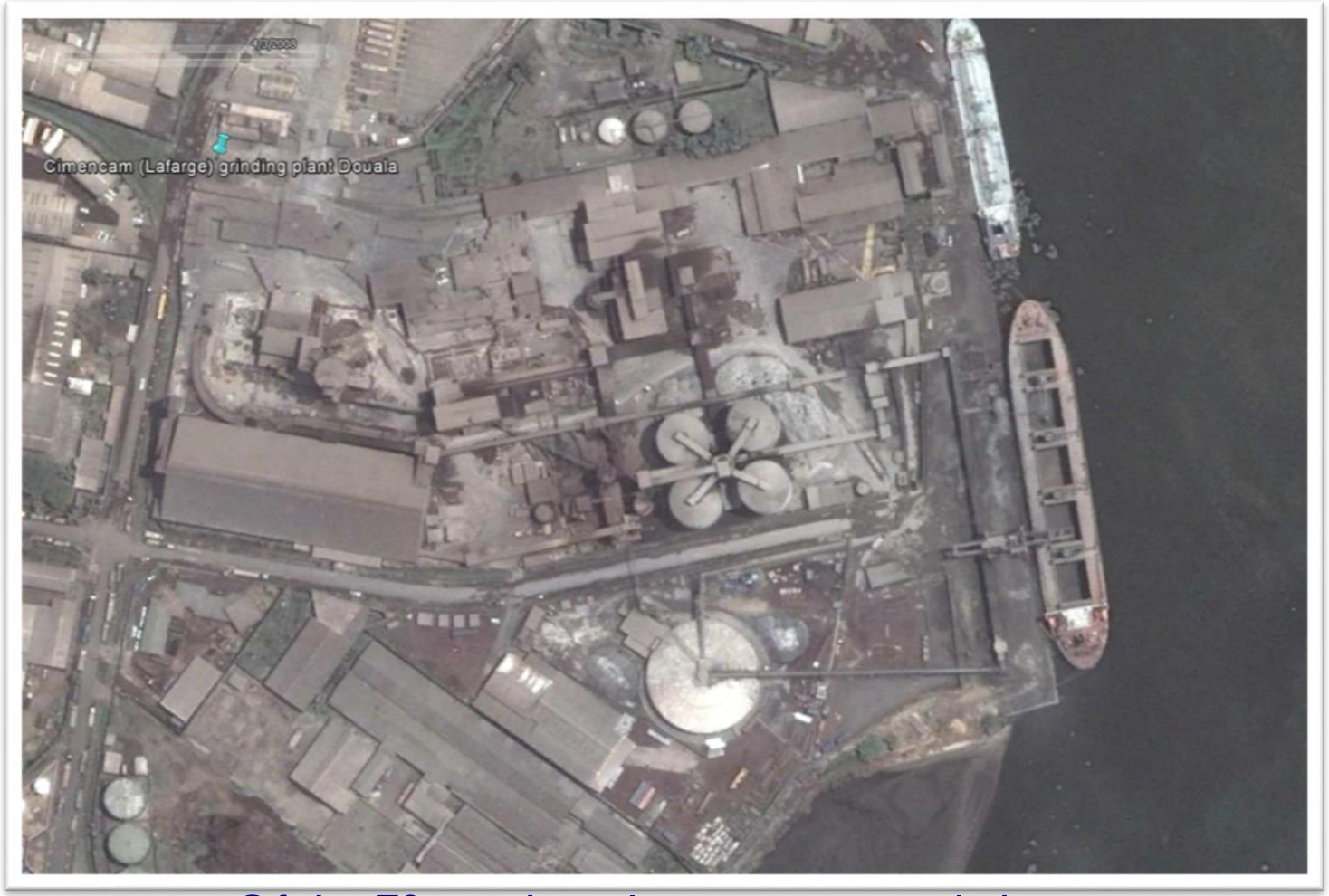
Most grinding plants that import clinker do not have their own dedicated dock and must use general ports. Given the large congestion at most ports this causes substantial delays and demurrage.

CEMENT DISTRIBUTION CONSULTANTS

African clinker imports



Lafarge Douala, Cameroon

Of the 79 grinding plants importing clinker, only 6 have a dedicated dock

CEMENT DISTRIBUTION CONSULTANTS

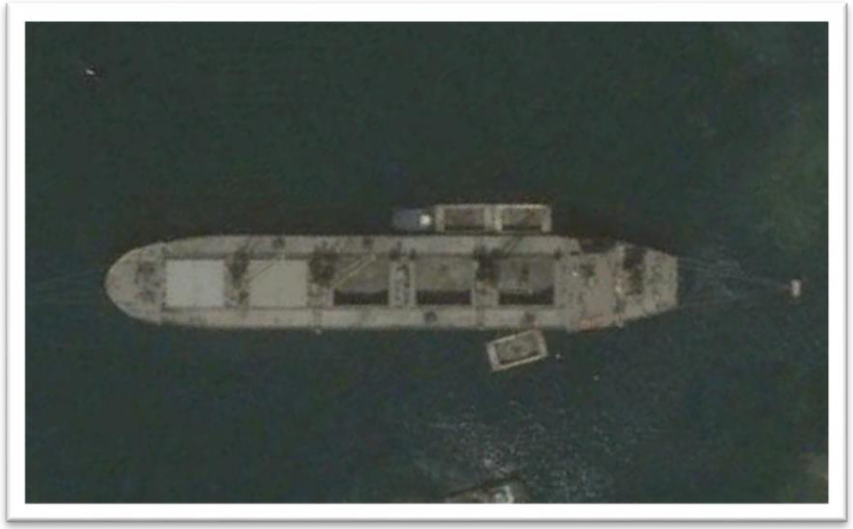
African clinker imports

Cimgabon,
Ovendo

72 Grinding plants import clinker via general ports and truck to the plant

CEMENT DISTRIBUTION CONSULTANTS

African Clinker imports



And a special solution

Heidelberg,
Takodari

Ship discharge to barge
and barge transport to the plant

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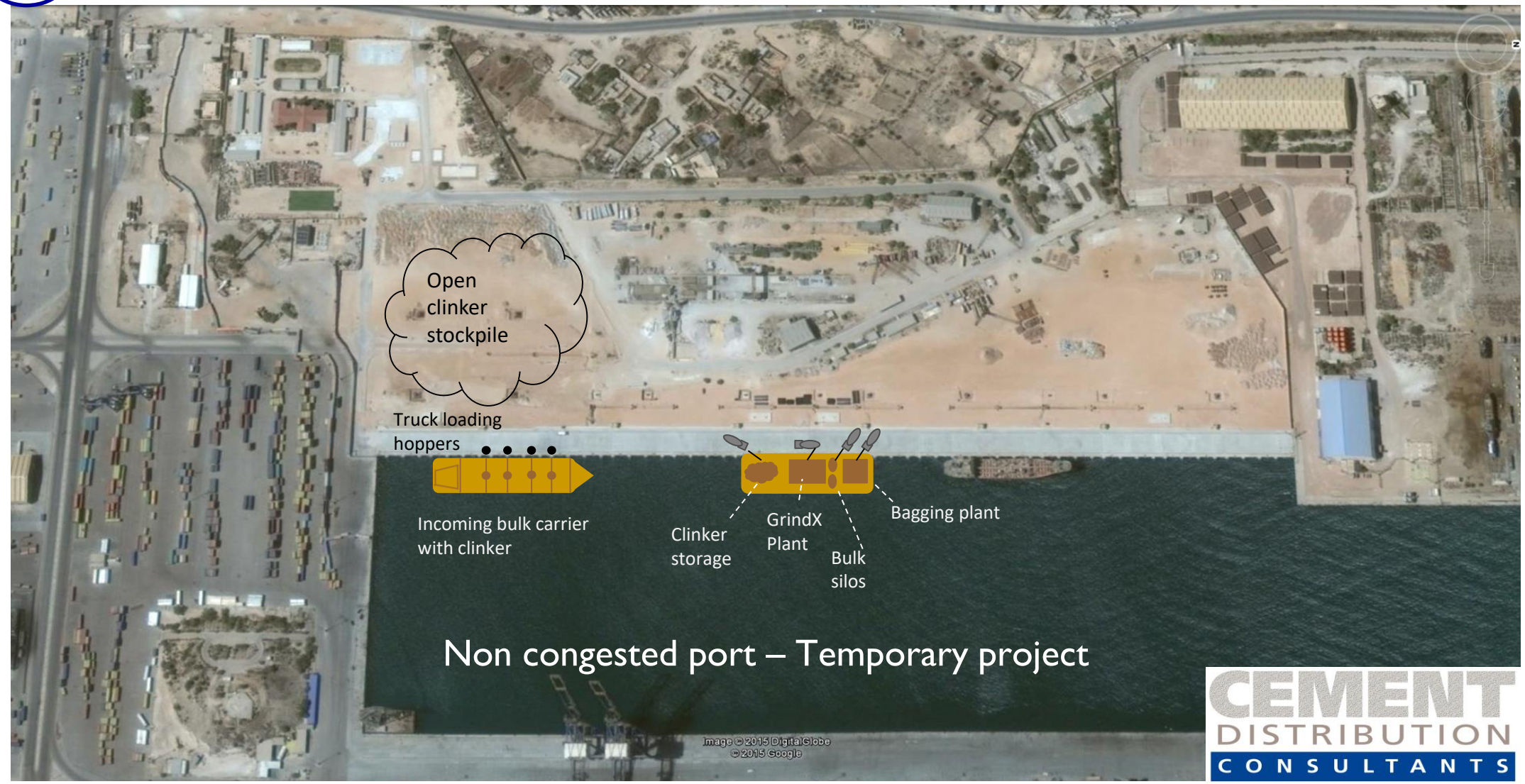
Example I – Floating grinding plant on barge with bagging and truck loading systems



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Example II – Floating clinker terminal with grinding plant on barge

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Example III – Midstream transfer of clinker from bulk carrier to barges and barge transport to floating grinding plant on barge

By passing a congested port

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The Mediterranean

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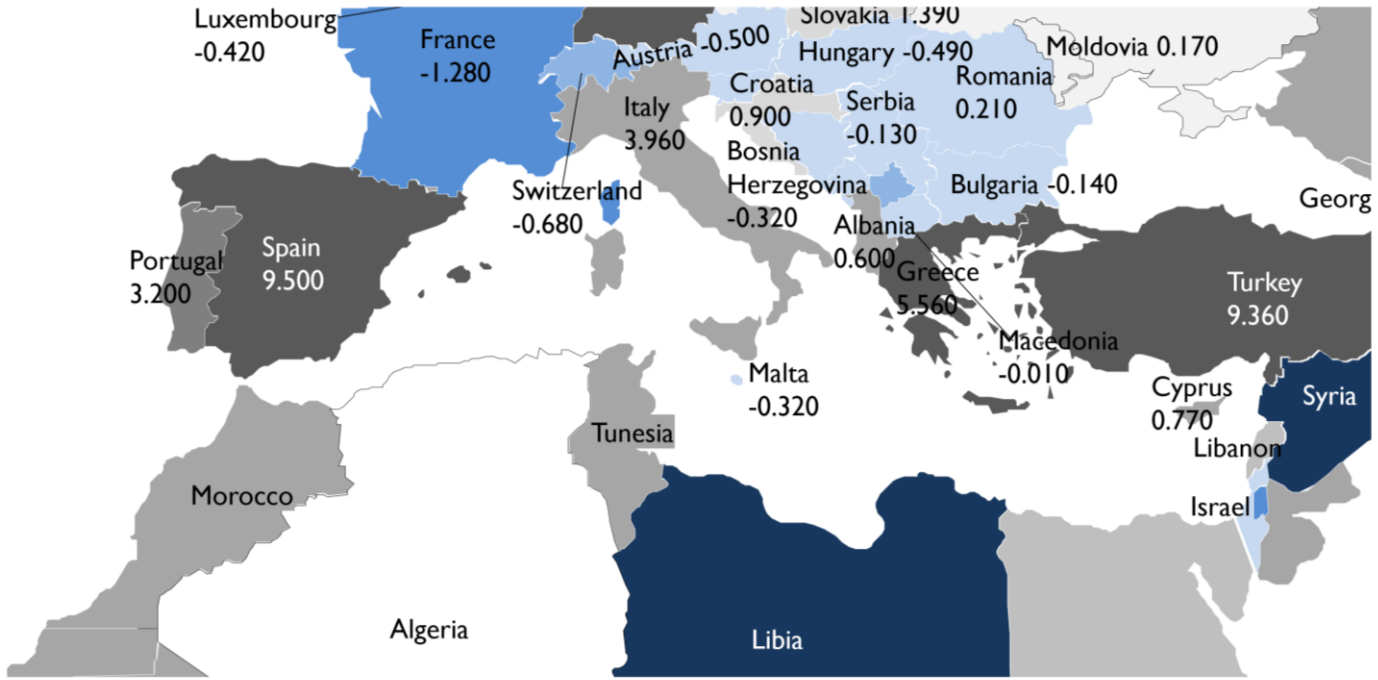
Mediterranean trading routes



Mediterranean Area	
Seaborne exports	19,5 mt
Seaborne imports	3,9 mt
Seaborne domestic distribution	4,9mt
Total seaborne movements	24,4 mt

The Mediterranean market consists of two different categories. The first category consists of the large volume exports to West Africa and the Americas in Handysize to Supramax vessels. The second category are the regional and domestic trade and distribution networks which are done mostly with coastal size self-discharging cement carriers and some coastal general cargo vessels (part bulk, part bagged cement). With only Libya importing sizable volumes and only few independent terminals in the area remaining, cement trade and distribution is almost entirely controlled by the networks of the cement producers. The Atlantic islands are very much part of the domestic distribution networks in Spain and Portugal. In the Mediterranean area seaborne fly ash trade is growing fast but in overall volumes is still low compared to cement.

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Atlantic and Baltic

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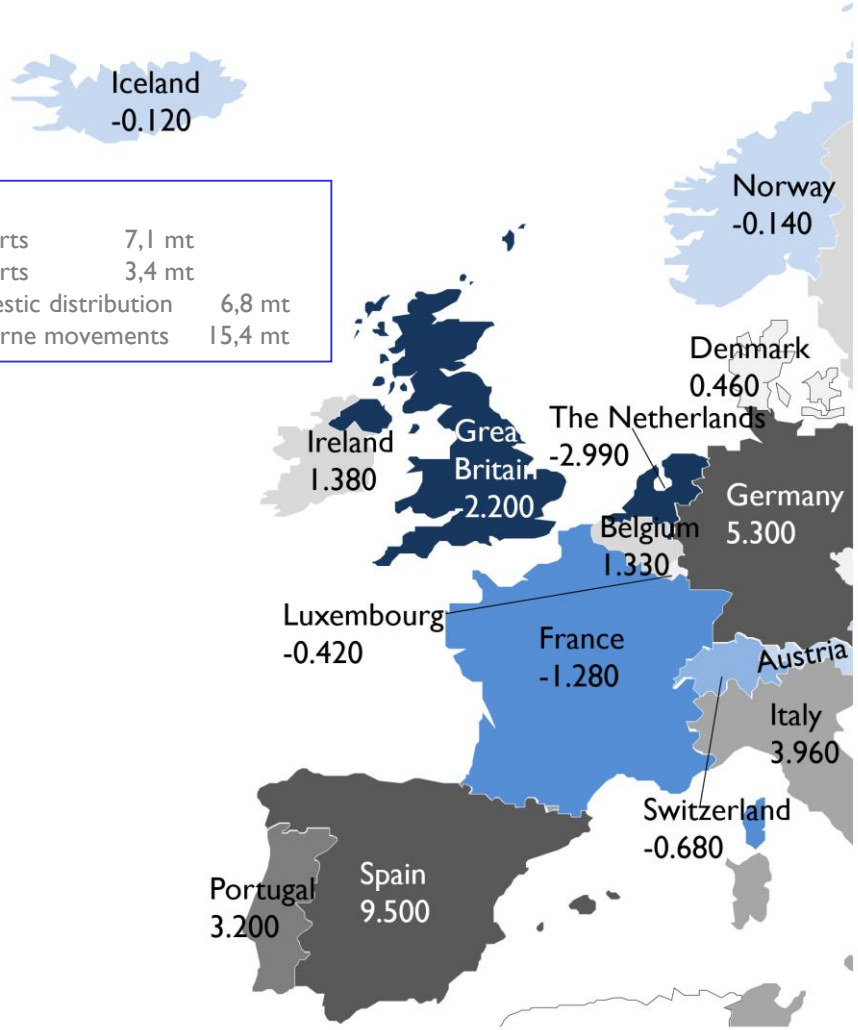
Atlantic trading routes



Atlantic Area	
Seaborne exports	7,1 mt
Seaborne imports	3,4 mt
seaborne domestic distribution	6,8 mt
Total Waterborne movements	15,4 mt

The Atlantic market is dominated by the large import market of the UK and imports on a smaller scale in France, The Netherlands and Iceland. Nearby suppliers to the UK are Ireland and Germany (and Denmark for white cement) but the UK, France and The Netherlands are also supplied from Turkey, Greece, Spain and Portugal. Iceland is supplied from Denmark and Norway. Spain and Portugal have seaborne domestic distribution routes that also supply their Atlantic islands. Almost all shipping is coastal with a mixture of self-discharging cement carriers and general cargo vessels. Although in recent years many independent terminals have been acquired by cement producers, new independent terminals keep popping up. Fly ash and GGBFS trade has grown more substantially than cement trade.

All figures 2017 est. Map shows net exports (+) or imports (-) per country (land and sea)

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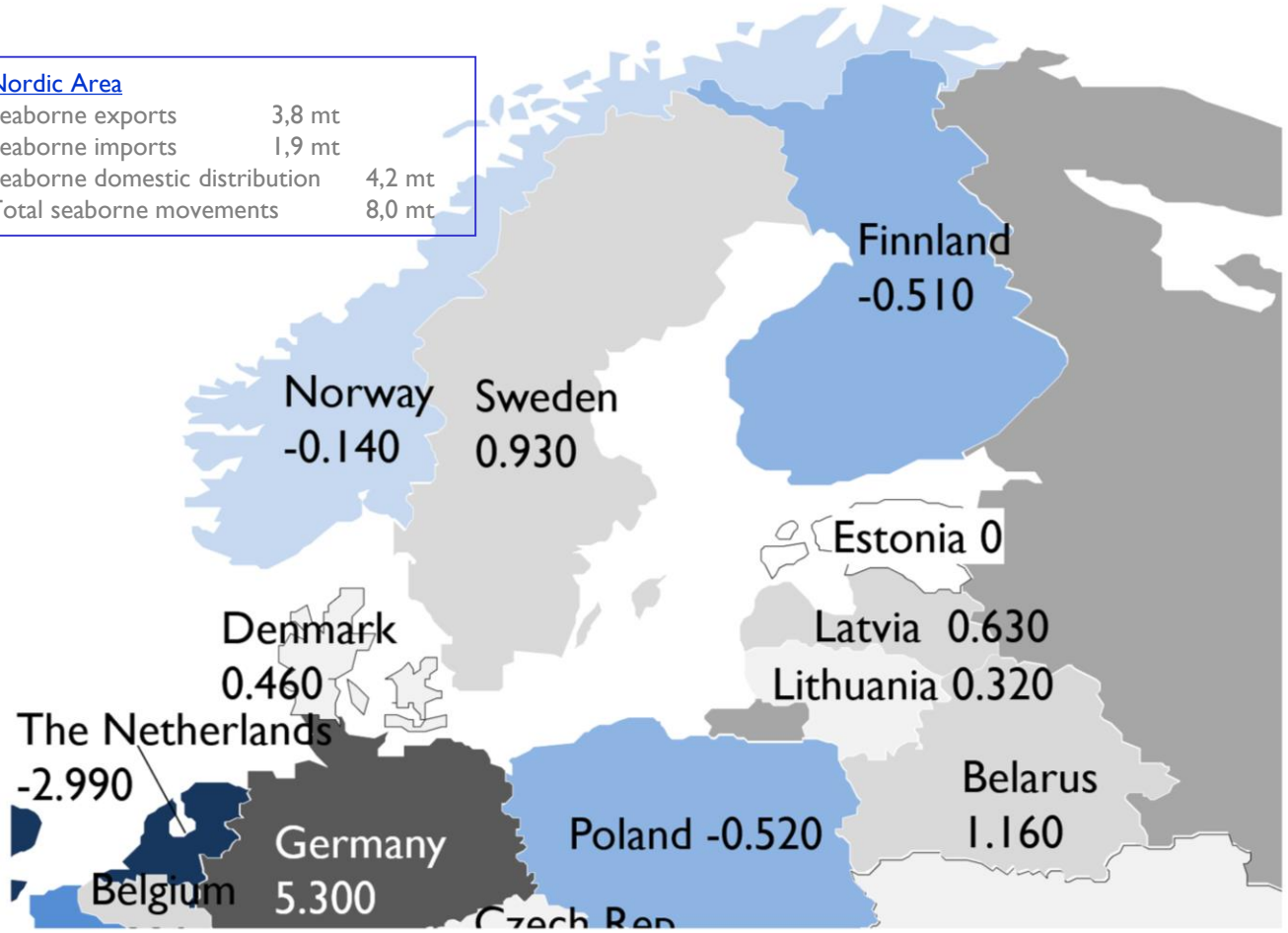
Nordic routes

Nordic Area	
Seaborne exports	3,8 mt
Seaborne imports	1,9 mt
Seaborne domestic distribution	4,2 mt
Total seaborne movements	8,0 mt



The Nordic market is almost entirely dominated by 4 large networks. The Heidelberg network covers extensive domestic networks in Sweden and Norway with exports to Russian, Danish and Latvian terminals. Aalborg (Cementir) has a domestic network in Denmark and a terminal in Norway. Finncementi (CRH) has a domestic network in Finland that also receives cement from Estonia. Cemex has a trading network with terminals in Norway, Sweden and Finland that receive cement from Germany and Latvia. There are very few independent facilities in the Nordic area. Heidelberg from its Norwegian and Swedish plants exports to the US (cement) and West Africa (clinker) in Handysize, Handymax vessels. Aalborg (Cementir) exports to the US (white cement) in Handysize and Handymax vessels.

All figures 2017 est.

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The Nordic area networks are almost entirely served by self-discharging cement carriers. Apart from vessels operating on time charter basis there also are a number of vessels operating on COA basis (in combination with the Atlantic market) which enables flexibility and better vessel utilisation rates.

Apart from a growing market there are also new regulations coming into force resulting in a number of new building vessels coming into the market.

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Final Considerations

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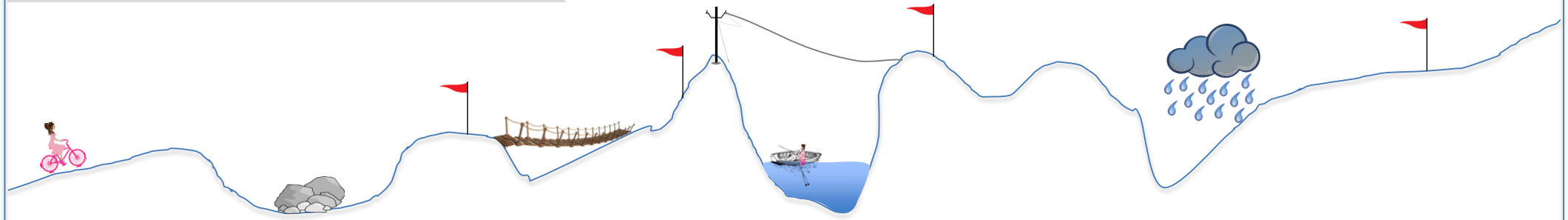
Future outlook

YOUR "PLANS"

THE UNIVERSE'S PLANS FOR YOU



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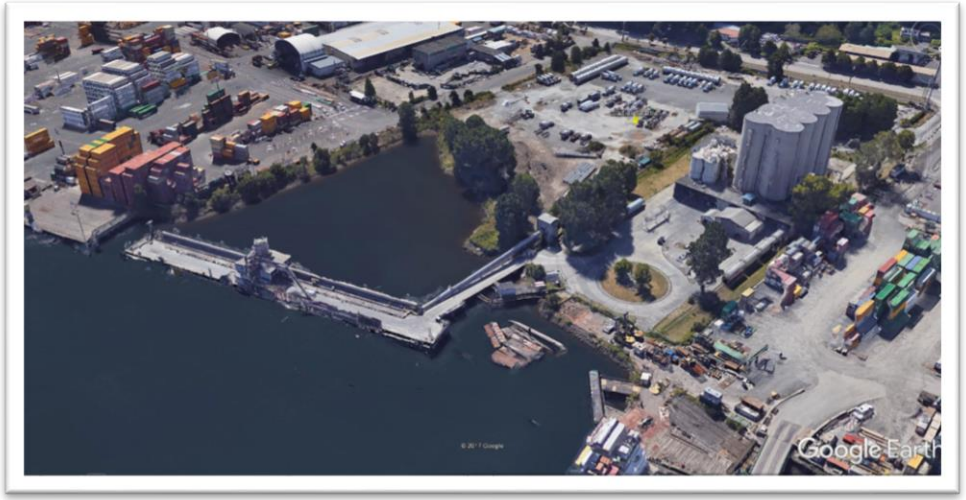
Final considerations



The last few years have seen a very strong decline in North African cement import markets, which has been compensated by the strongly growing US market, the still growing West African market and increased trade within the Atlantic and Nordic markets in Europe. This has meant a strong growth in bulk cement exports but in much larger ships which is problematic for several exporters. Bagged cement exports are declining rapidly although for West African markets they are replaced by clinker shipments.

For the coming years continuing growth of the US and West Africa markets can be expected and if the effects of Brexit can be limited the inter European markets look set for continued growth too. What is noticeable however, is the exporters that can load larger vessels are nearing sold out levels and if European exporters will want to export more, upgrading of export facilities will be a requirement.

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THANK YOU

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