



SmartBarge

Intermodal Waterborne Logistics

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SmartBarge

Immediate Need for Innovation in Freight Transportation

Urban and inner-city roads have reached their limit with congestion
Air pollution is effecting the quality of life for people in cities and causing preventable deaths
Local governments are looking to reduce emissions by minimizing HGV usage
Private companies are on the lookout for more cost effective transport solutions

Why SmartBarge?

SmartBarge takes vehicles off the roads by utilising the river systems instead
SmartBarge contributes **less than 1%** of the emissions compared to road transport for the same distance
8 SmartBarge modules have the capacity to remove up to **sixteen** HGVs from the road
The intermodal opportunities through SmartBarge enable reduced transport costs at scale
Experienced and balanced team with unique solution

SmartBarge

Innovation in Inland Waterway Transportation

SmartBarge Ltd offers more than just module units. It is a fresh approach to inland waterway logistics and a change in thinking for intermodal transport. Using operational expertise, the unique modular design and our industry partners, SmartBarge offers the first realistic solution to HGV congestion within cities.

One of the current USPs for SmartBarge is based of the modular system, invented and owned by the company. The design eliminates need for costly infrastructure of docks or cranes and allows for the seamless transition from SmartBarge skips to road vehicles, only requiring a small access point to the canal/river side. This intermodal solution through the integration of SmartBarge with road freight to reduce the number of miles travelled by HGVs offers the most scalable potential around the world.



SmartBarge Skip Module Offloading



2 Modules moored on site, Edmonton

- Potential to move higher tonnage and produce less than 1% the emissions compared to a HGV
- More competitively priced due to the modular design (pay as you need)
- Integrates seamlessly with road freight to allow flexible intermodal solutions with reduced HGV miles
- Reduces road congestion/traffic while also using underutilized waterways
- Various possible design iterations to allow for improvements and bespoke solutions
- Improve air quality for local communities by taking industry away from peoples homes

SmartBarge

Innovation in Inland Waterway Transportation



Graphic of 8 linked SmartBarge modules



Module 2 with ISO container

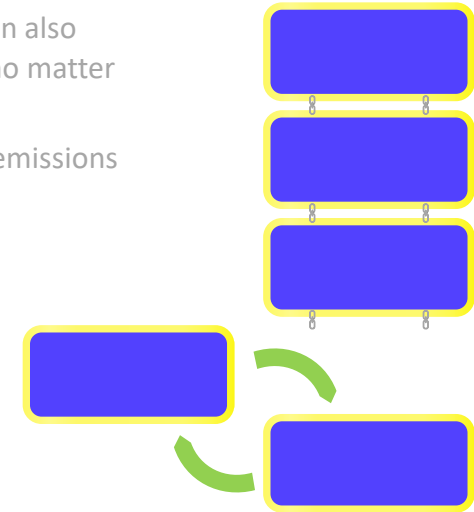
The default tow is 8 modules to fit existing locks on the canals. The modular design also allows for use on a “milk-round” basis , serving the largest number of customers no matter the size or frequency of their needs.

When a fuel cell, electric or natural gas tug is used there is a further reduction in emissions caused by the transportation of freight.

SmartBarge Ltd owns and operates a second module type which allows the carrying of any road-based container on water, for example, standard intermodal RORO/ISO container, Hi-cube, MMRCV and liquid tank containers. This opens the possibility of transporting a wide range of freight efficiently within cities and urban areas via the canal and river network.

This module can be simply joined to a tow of different goods or the skip module to scale. Providing large scope for the scale of goods that can be moved once regular trips are being made by tugs with a set of modules.

Manufactured in the UK, once established the SmartBarge system offers a range of export opportunities in it’s various iterations and design types.



“Milkround” System

Additional Benefits




- Storage during transit
- Offsite storage
- Separation of waste at source
- Mobile depot/collection point
- Long distance travel to/from ports
- Bulk movement of varied cargo which can split from main tow

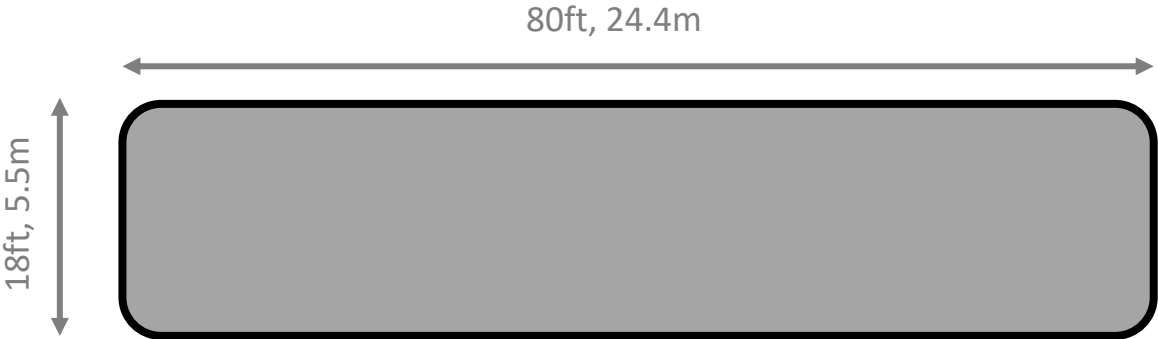
Current Waterborne Freight

Traditional barges are inflexible and cost ineffective at smaller scale. They have one hold and can only carry cargo that is evened out for stability purposes. The introduction of containerised rail and road phased them out as their primary benefit was the ability to move a large tonnage of loose cargo. They are expensive to build and maintain, once built they need to be operating as many hours as possible to get return on investment.

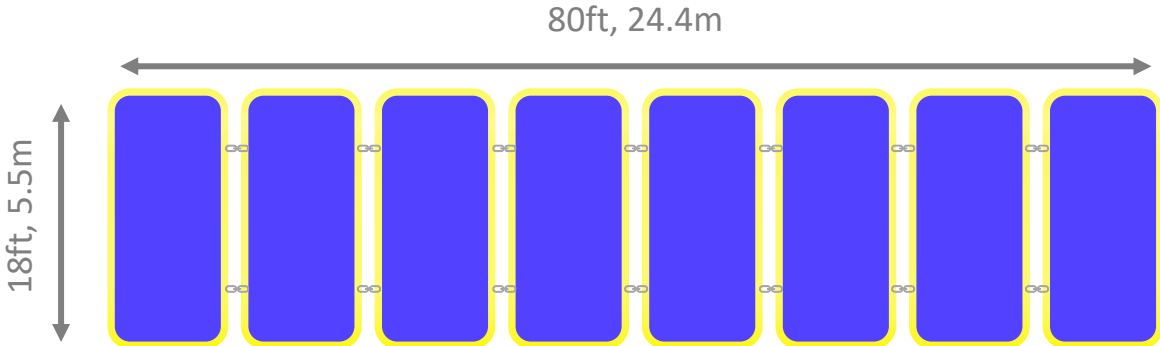
Existing barges are not built to work with road, often requiring grabs or cranes to load and unload loose cargo. The current small amount of freight being transported on inland waterways is due to the fact the required infrastructure has been removed or is too expensive to build.

Domestic Waterborne Freight, UK (2016-17)

	Goods Moved (bt-k)			Goods lifted (mt)		
	2016	2017	Percentage change	2016	2017	Percentage change
Inland waters 	1.6	1.6	↑ 2%	50.8	51.2	↑ 1%
Coastwise 	21.7	16.2	↓ 26%	39.7	34.6	↓ 13%
One-port 	7.4	7.5	↑ 2%	21.0	22.3	↑ 6%
Total	30.4	24.9	↓ 18%	102.0	97.1	↓ 5%



Conventional River Lea Barge (90 Ton carry capacity)



SmartBarge 8 Module Fleet (140 Ton carry capacity)

Long Term Vision

Changing Freight Transport for the Future

To modernize cities around the world by using the SmartBarge solution to create zero carbon economies and deliver sustainable transport mechanisms.

We intend to continue building partnerships with innovative organisations around the world to ensure this solution is made available to all areas where it can make the same difference we have seen in the UK.

To leverage the SmartBarge culture of innovation to provide clients with tailor-made solutions which are regularly adapted to match changing needs.

We plan to use SmartBarge's wealth of knowledge and bank of design iterations and application potential to constantly re-design new machines to match the changing requirements of our customers, thus being more of a service provider compared to a traditional product vendor.

To autonomise and integrate additional features to the base SmartBarge module design

Further to autonomising SmartBarge, including utilising autonomous tugs, automatic locks and various other features which can be applied to enhance SmartBarge utility. This includes data sensors to provide live information on capacity and usage to clients as well as modules fitted with turbines to generate clean energy from the rivers current.