

With economic output estimated at \$6 trillion, the provinces and states bordering the Great Lakes – St. Lawrence Seaway System account for 30% of combined Canadian and U.S. economic activity and employment.

The region would rank as the third largest economy in the world if it were a country. Positioned at the core of this economic powerhouse, the Great Lakes – St. Lawrence Seaway System serves as a vital supply chain.

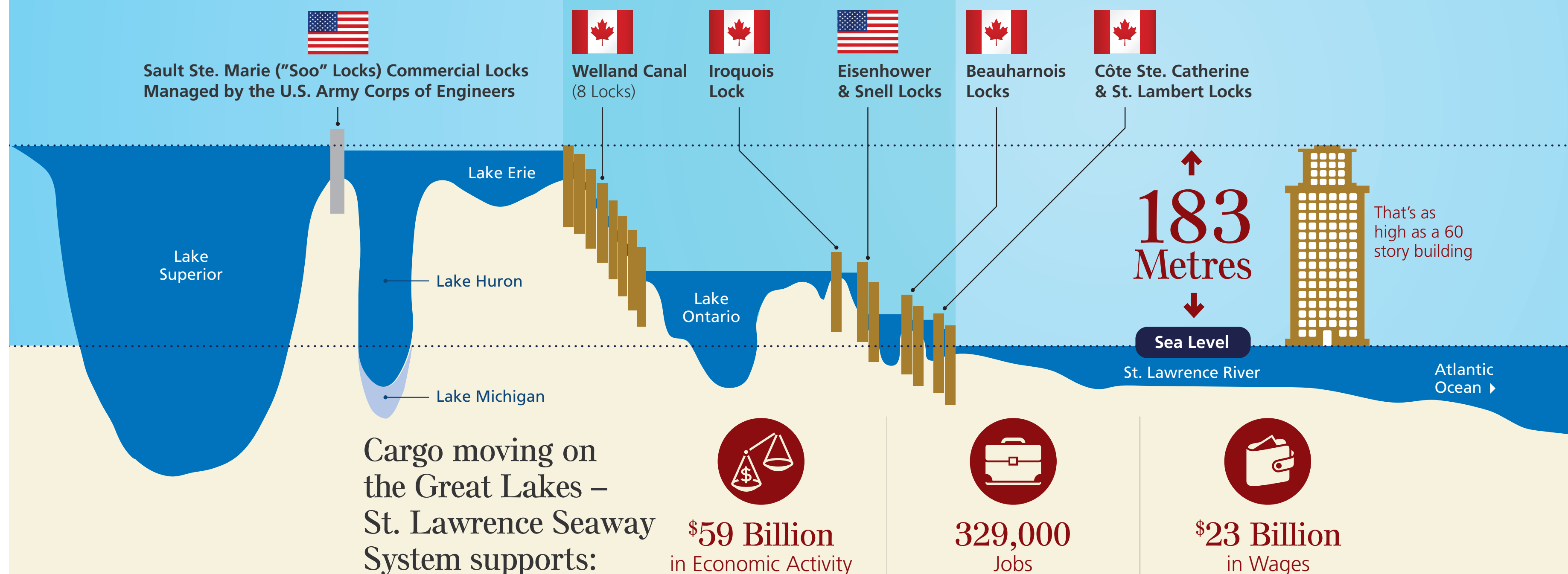


## Great Lakes – St. Lawrence Seaway System

Key Supply Chain for the World's 3<sup>rd</sup> Largest Economy

### The St. Lawrence Seaway's 15 locks connect the Great Lakes to the Atlantic Ocean

#### ST. LAWRENCE SEAWAY



#### Seaway Ships

Seaway carriers are investing billions of dollars in fleet renewal, commissioning dozens of state-of-the-art ships.

The primary types of ships on the Seaway fall into three main groups:

##### Lakers

"Lakers" are built specifically for use within the Great Lakes – St. Lawrence Seaway System, and rarely exit the waterway. They are characterized by a design that includes vertical sides and a snub-nosed bow, to maximize cargo carrying capacity within the confines of the Seaway's lock dimensions. Some lakers also are equipped with a self-unloading boom that contains a conveyor belt, allowing the ship to position its boom and unload bulk cargo directly onto a shore-side dock or wharf.



##### Salties

"Salties" are ocean going ships that enable trade with nations overseas. They are characterized by a V-shaped hull, sharp bows, and in many cases, cranes mounted on the deck to facilitate the loading and unloading of cargo.



##### Tug-Propelled Barges

Tug-propelled barges consist of a tug fitted into a specially designed barge. The bow of the tug is secured within a "notch" found in the stern of the barge, creating a very stable unit that can be used to move a variety of cargoes, based upon the type of barge that the tug is paired with.



The implementation of Hands Free Mooring represents the greatest advancement in Seaway operations since its inception in 1959. Each lock is equipped with three Hands Free Mooring units, which reach out to secure a ship during a lockage, utilizing vacuum pads instead of traditional wire or rope lines. Ships are held by the mooring units which move up or down on rails recessed within the lock wall as the ship is raised or lowered. Once the ship is at the desired level, the mooring units release their grip, allowing the ship to proceed on its journey. With the elimination of tie-up lines for most vessels, Seaway employees and vessel crews enjoy a better working environment, safety is improved, and ships experience less "wear and tear" as they enter and exit locks.



Hands Free Mooring units waiting to secure a ship



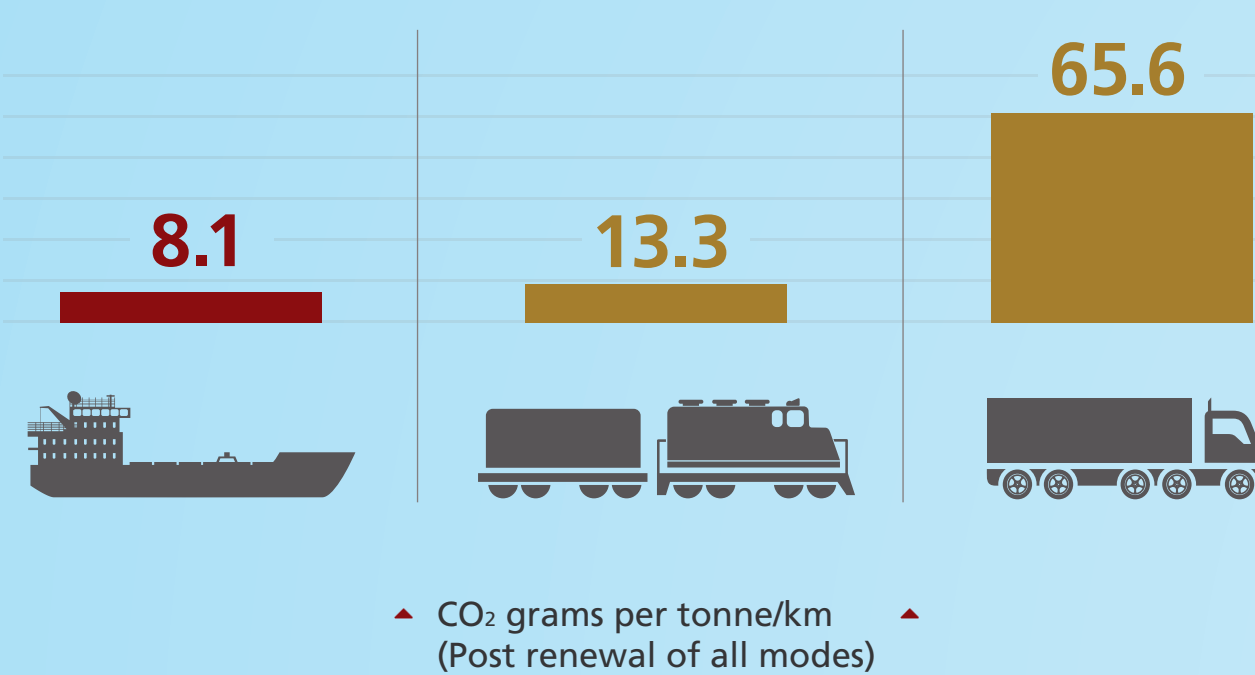
Ship secured by Hands Free Mooring (no need for wire or rope lines)

The Seaway's Canadian locks have also been converted to remote control operation, and are managed from two Operations Control Centres, located in St. Lambert (Québec) and St. Catharines (Ontario).



Seaway Operations Control Centre St. Lambert (Québec)

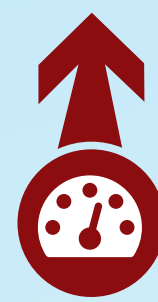
### Ships = Smallest Carbon Footprint



### Shifting Cargo from Land to Water



Lowers congestion on our highways and railways

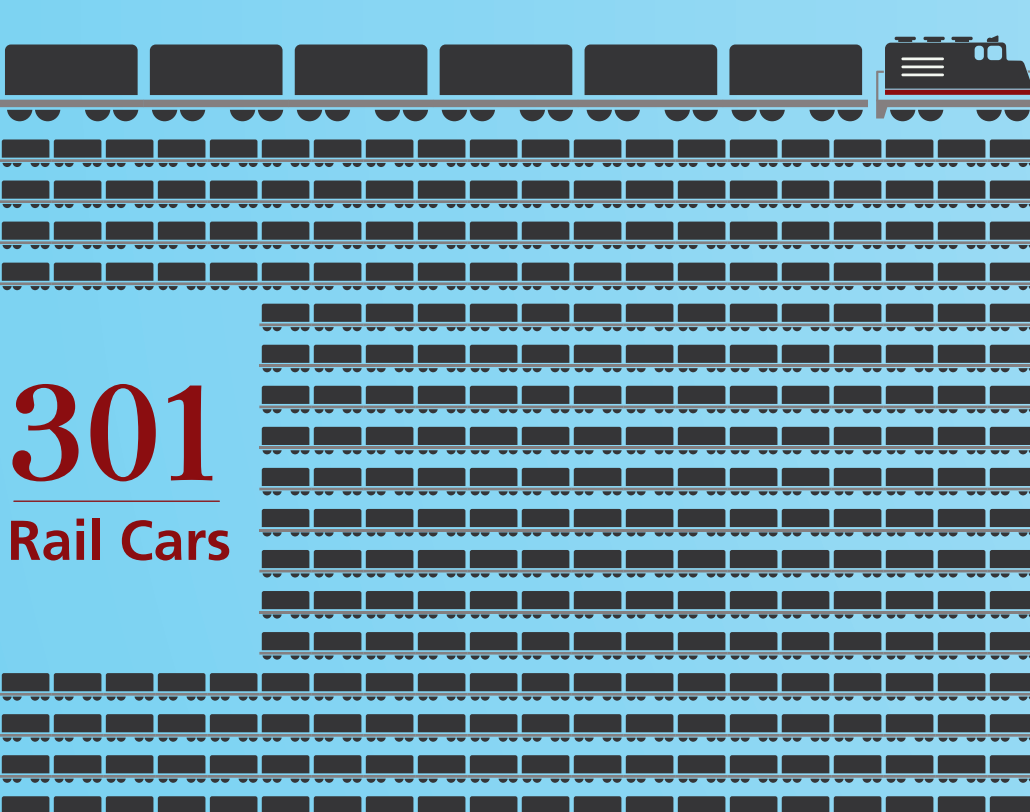
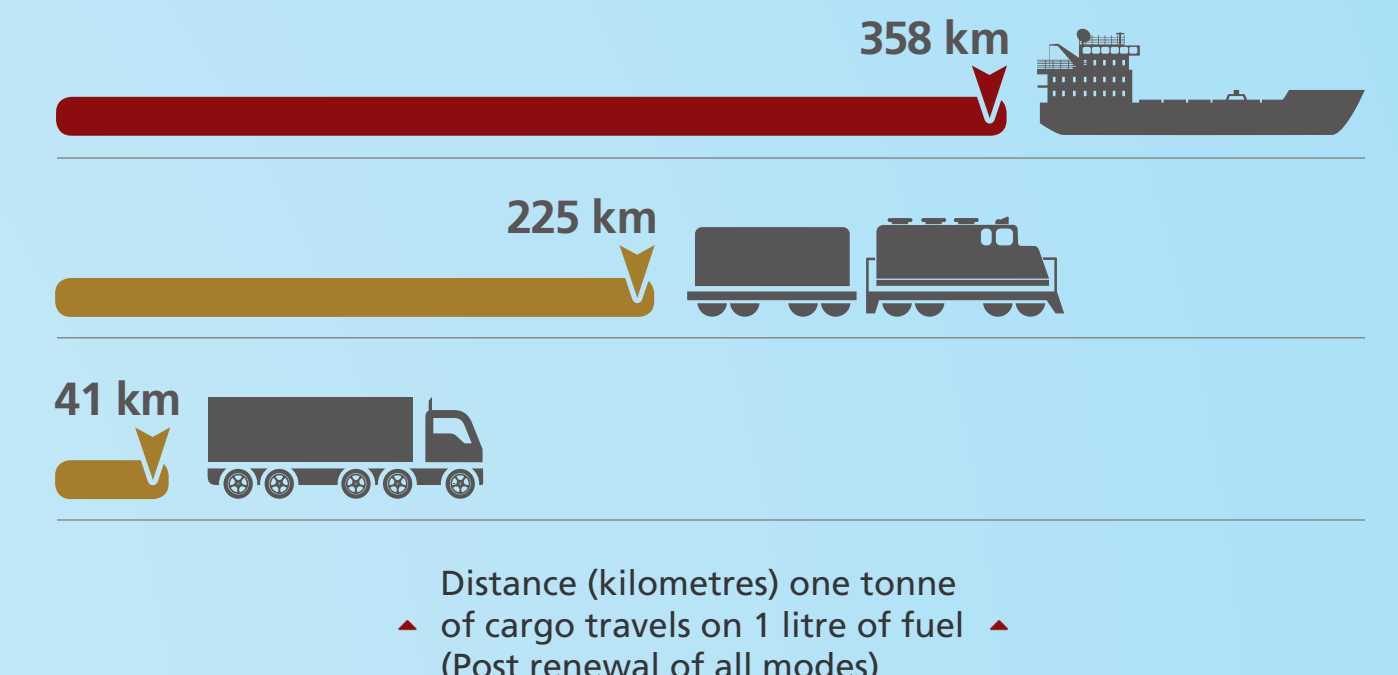


Raises our overall fuel efficiency

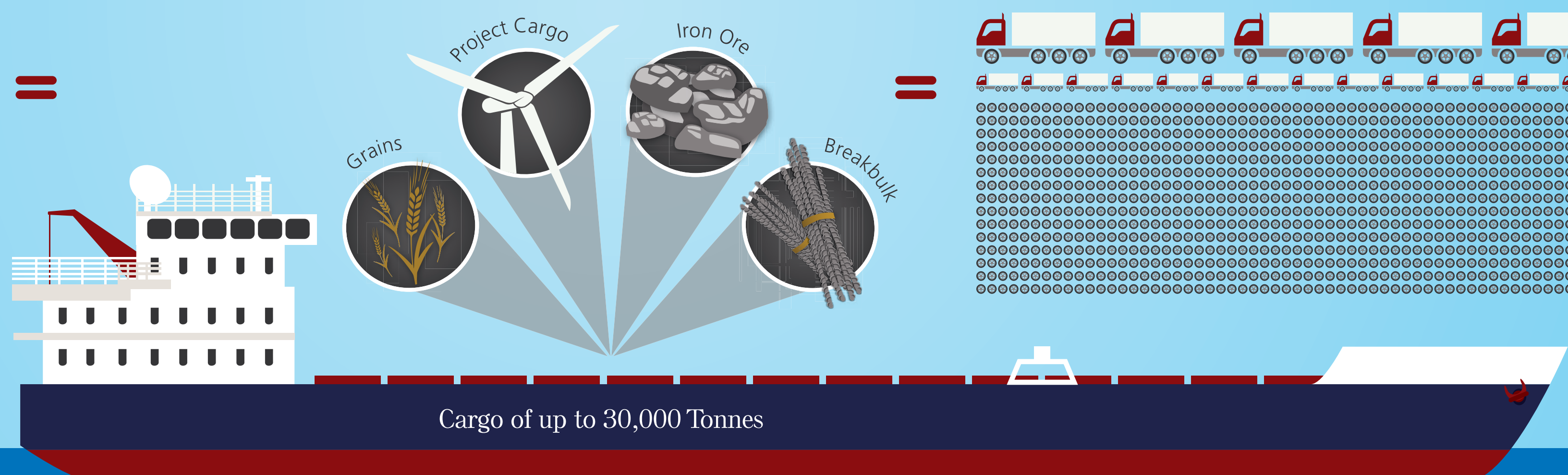


Lowers total greenhouse gas emissions

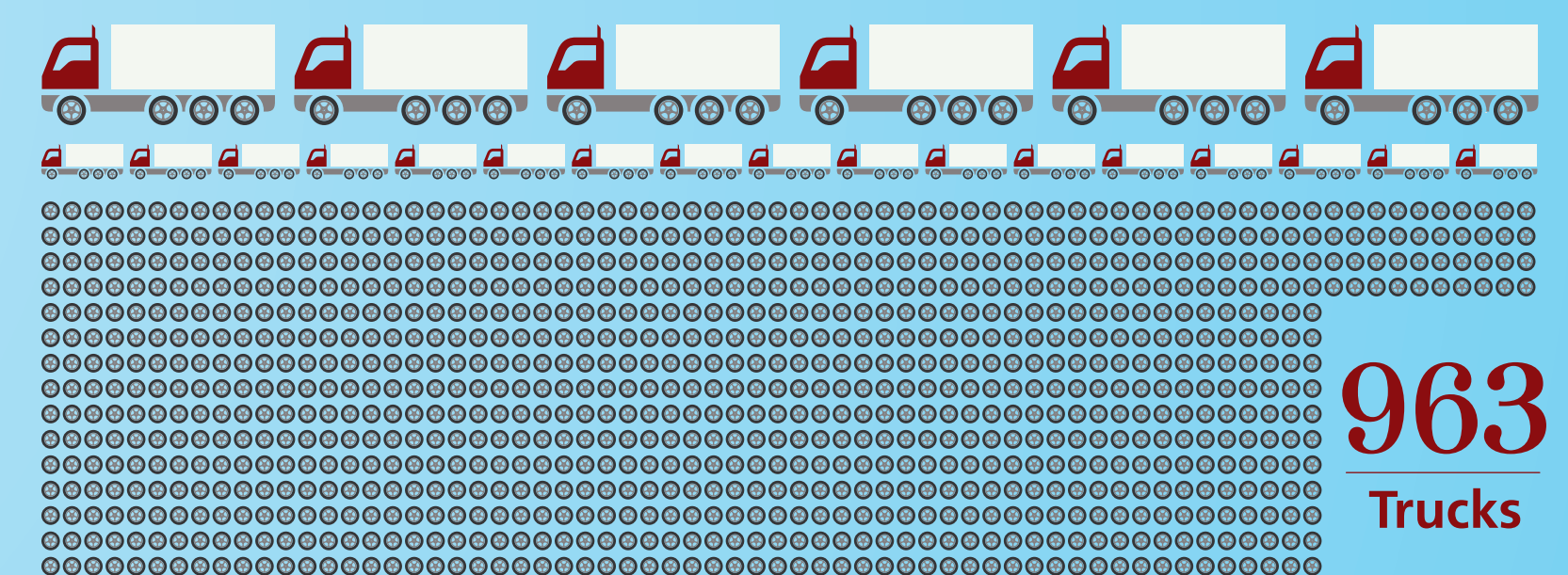
### Ships = Best Fuel Efficiency



**301**  
Rail Cars



Cargo of up to 30,000 Tonnes



**963**  
Trucks

