

# VERESEN



## LNG as a Marine Fuel

**Pacific Northwest Economic Region  
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# Forward-looking information advisory

Certain information contained in this presentation constitutes forward-looking information under applicable Canadian securities laws. All information, other than statements of historical fact, which addresses activities, events or developments that we expect or anticipate may or will occur in the future, is forward-looking information. Forward-looking information typically contains statements with words such as "may", "estimate", "anticipate", "believe", "expect", "plan", "intend", "target", "project", "forecast" or similar words suggesting future outcomes or outlook. Forward-looking statements in this presentation include, but are not limited to, statements with respect to: the ability of Veresen to recognize synergies between Ruby and the Jordan Cove LNG project, the cost estimate, timing of, and our ability to successfully obtain regulatory approvals for Jordan Cove LNG and the Pacific Gas Connector Pipeline, the timing of decisions to proceed with construction of, and the in-service date of Jordan Cove LNG and the Pacific Gas Connector Pipeline and sources of gas supply to feed Jordan Cove LNG and the Pacific Gas Connector Pipeline.

The risks and uncertainties that may affect the operations, performance, development and results of our businesses include, but are not limited to, the following factors: our ability to successfully implement our strategic initiatives and achieve expected benefits; levels of oil and gas exploration and development activity; the status, credit risk and continued existence of contracted customers; the availability and price of capital; the availability and price of energy commodities; the availability of construction services and materials; fluctuations in foreign exchange and interest rates; our ability to successfully obtain regulatory approvals; changes in tax, regulatory, environmental, and other laws and regulations; competitive factors in the pipeline, NGL and power industries; operational breakdowns, failures, or other disruptions; and the prevailing economic conditions in North America. Additional information on these and other risks, uncertainties and factors that could affect our operations or financial results are included in our filings with the securities commissions or similar authorities in each of the provinces of Canada, as may be updated from time to time.

Although we believe the expectations conveyed by the forward-looking information are reasonable based on information available to us on the date of preparation, we can give no assurances as to future results, levels of activity and achievements. Readers should not place undue reliance on the information contained in this presentation, as actual results achieved will vary from the information provided herein and the variations may be material. We make no representation that actual results achieved will be the same in whole or in part as those set out in the forward-looking information. Furthermore, the forward-looking statements contained herein are made as of the date hereof, and, except as required by law, we do not undertake any obligation to update publicly or to revise any forward-looking information, whether as a result of new information, future events or otherwise. We expressly qualify any forward-looking information contained in this presentation by this cautionary statement.

# Regulating emissions from shipping

- The International Maritime Organization (IMO) has introduced regulations for emission control under Annex VI of the MARPOL Convention. It defines mandatory limits on emissions of sulfur oxides (SOx) and nitrogen oxides (NOx), both globally and within designated sea areas known as Emission Control Areas (ECAs).
- Current marine emissions contribute to over 60,000 deaths a year worldwide and produce CO2 at levels equal to those of France.
- From 1/1/15, all ships operating in an ECA must burn fuel with <0.1% sulfur content, and starting in NA in 2016, new buildings will have to reduce NOx emissions by 80%
- Ship owners have three options to comply:
  - Burn low sulfur fuel oils, like marine gas oil (a distillate);
  - Install exhaust scrubbers; and
  - Convert ships to run on LNG
- LNG has emerged as a valuable alternative due to its low emissions and the recent technological advances and availability of dual fuel marine engines
  - Using LNG results in 25% less CO2, 90% NOx, 99% less SOx and 100% less particulate matter than the equivalent heavy fuel oil
  - New builds from 2016 must meet NOx standards, ruling out scrubbers
- However, low crude oil prices has make the case for conversion less compelling

# Existing and future emission control areas (ECAs)

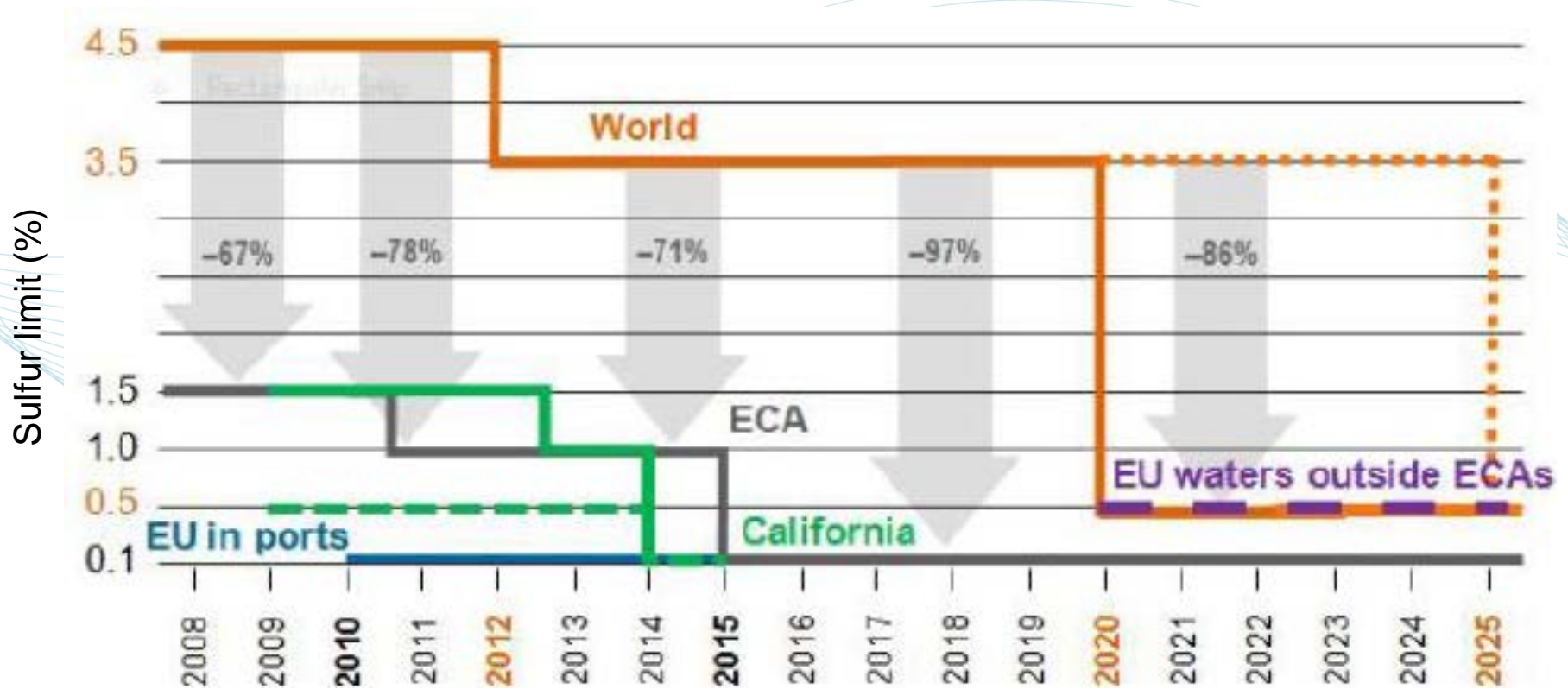
North American and US  
Caribbean ECA – NOx and Sox  
SOx from 1/1/15: 0.1%  
NOx from 1/1/16

Baltic and North Sea ECA – SOx  
From January 1, 2015: 0.1%

- Existing ECA
- Potential future ECA
- EU sulfur directive
- Additional regulations

# Implementation of sulfur limits

Sulfur limit (%)



**Fuel type** Not regulated = both HFO and distillate are permitted.  
**Exhaust gas cleaning** Permitted alternative under Regulation 4 to achieve any regulated limit.  
**Particulate Matter (PM)** No limit values.

# Initiatives in the Pacific North West

- Adoption of LNG as a marine fuel on the West Coast has primarily been by the Jones Act fleet and ferries that operate within the North American ECA

Projects currently under implementation:

- Matson – West Coast / Hawaii; supplier to be determined
- Tote (conversion) – Puget Sound / Alaska; supplied by Puget Sound Energy
  - A partnership of Totem Ocean and the Port of Tacoma
  - Plans include landside facility in Port with LNG liquefaction terminal
- Seaspan Ferries – British Columbia; supplied by Fortis LNG's Tilbury Island facility
- BC Ferries – South Gulf Islands; supplied by truck from Fortis LNG
- Washington State Ferries – Puget Sound; fuel supply to be delivered by truck from Fortis LNG
- Jordan Cove LNG – Coos Bay, Oregon; LNG supply for international and West Coast markets



# Jordan Cove LNG – Coos Bay, Oregon

– A source of LNG bunkering fuels for the North American West Coast

