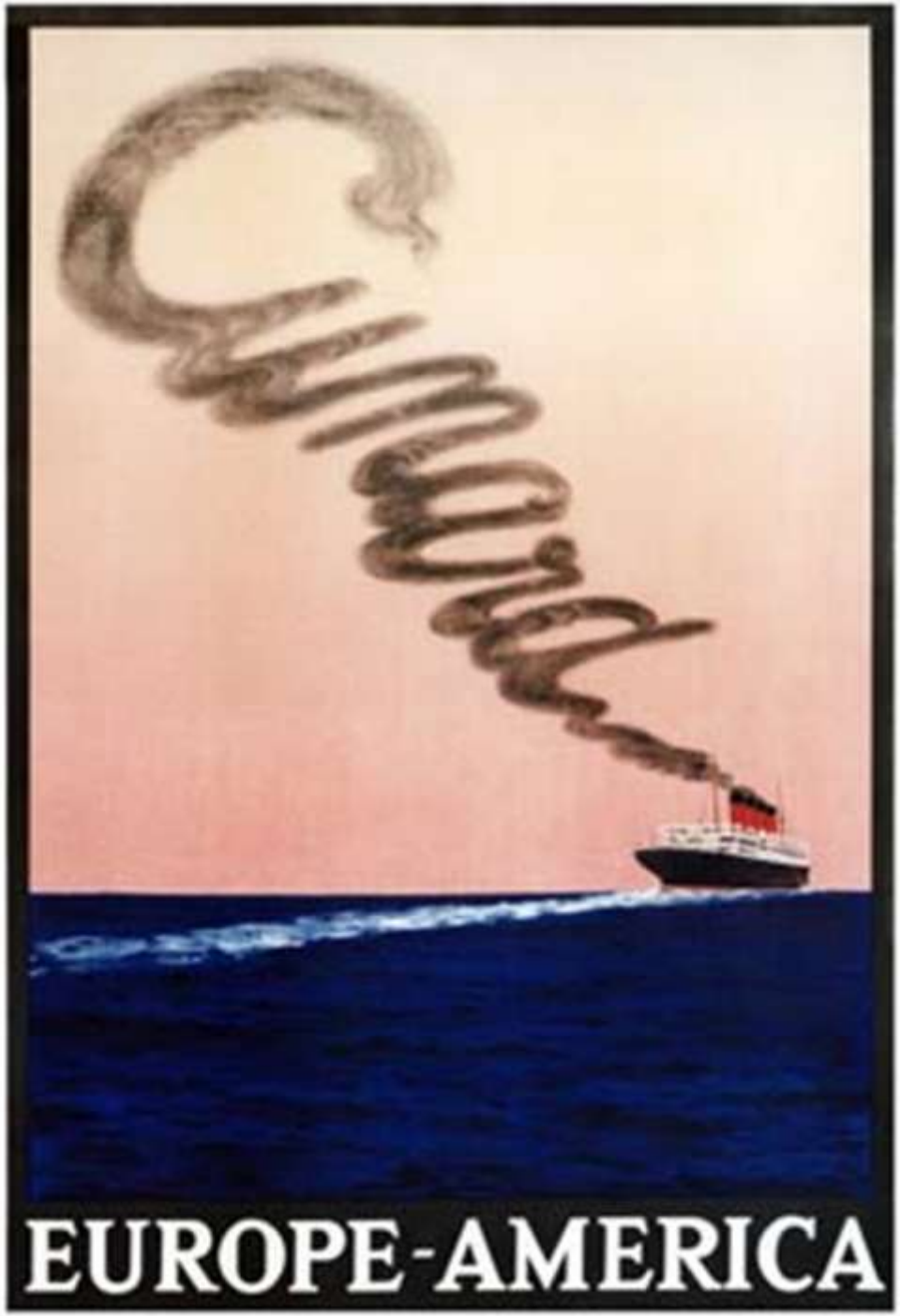
Jay Ach, Port of San Francisco
Mike Watts, Cochran, Inc.
Carmen Ortega, Port Metro Vancouver
Wilkin Mes, Metro Cruises, San Diego
George Malec, Halifax Port Authority
Tom Dow, Carnival Corp & PLC

Shore Power

AAPA Cruise Seminar

San Francisco

2013



PORT OF SAN FRANCISCO


SMOKING
STACKS
ATTRACT
ATTACKS

Shore Power – A West Coast] Experience

PORT OF SAN FRANCISCO

Once A Voluntary Good Idea . . .
. . . Now the Law in California

Date	Reduced Onboard Power Generation Option
Jan. 1, 2010	Shore-power equipped ships must use shore power if available at berth
Jan. 1, 2014	50% of all cruise ship calls on shore-power
Jan. 1, 2017	70% of all cruise ship calls on shore-power
Jan. 1, 2020	80% of all cruise ship calls on shore-power

OR – equivalent emissions reduction by other means

PORT OF SAN FRANCISCO

The San Francisco Experience

2004 – Cruise Terminal Enviro Advisory Comm

2005 – U.S. EPA Low Sulfur Fuel Incentive

2006 – Air Quality Board Grant **$1.9** million

2010 – Shorepower Project Completion

Budget: $5.2 million

Bay Area Air Quality Mgt. District - $1.9M

US Envir. Protection Agency - $1.0M

SF Public Utilities Commission - $1.3M

Port of San Francisco - $1.0M

PORT OF SAN FRANCISCO

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History of Shore Power

2000

Juneau, AK
First high voltage shore power connection.

2005

Seattle, WA
Cochran Marine's first shore power installation

2006

Seattle, WA
Holland America Line shore power installation

2009

Seattle, WA
Vancouver, BC

2010

San Francisco, CA
Los Angeles, CA
San Diego, CA

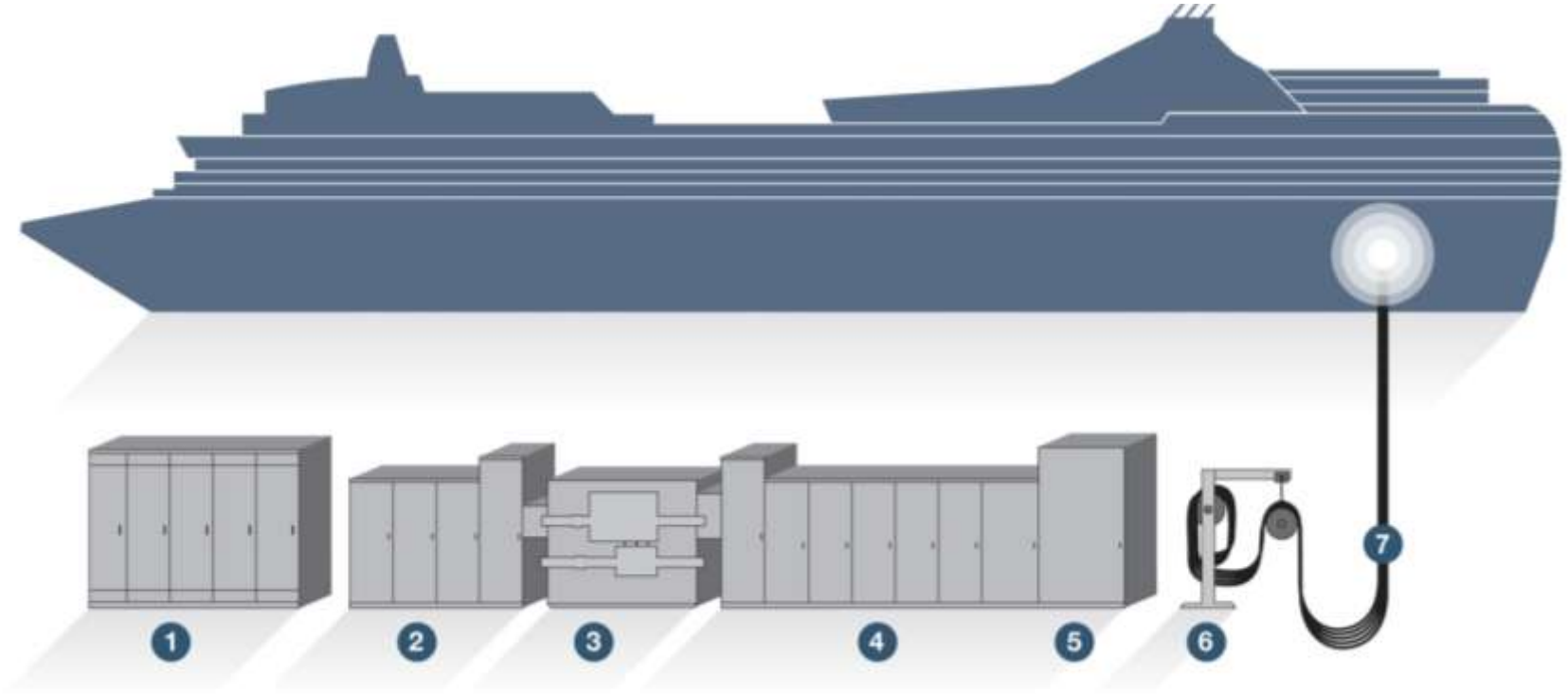
2011

Long Beach, CA

2014

Brooklyn, NY
Halifax, CND (projected)

How it Works



1. Primary metering equipment
2. Primary Equipment
3. Transformer
4. Secondary Equipment
5. Capacitor
6. Cable Positioning Device
7. Ship Cable

Our Services

- Design support
- Shore side equipment and installation
- Ongoing service and connection management

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Canada Place Shore Power

Collaboration with the utilities

Carmen Ortega, Manager
Business Development
April 25, 2013

PORT METRO vancouver

COLLABORATION

2 PROJECTS IN 5 YEARS : A $10 MILLION INVESTMENT

Government of Canada
Gouvernement du Canada

BRITISH COLUMBIA
The Best Place on Earth

PORT METRO vancouver

PRINCESS CRUISES
escape completely

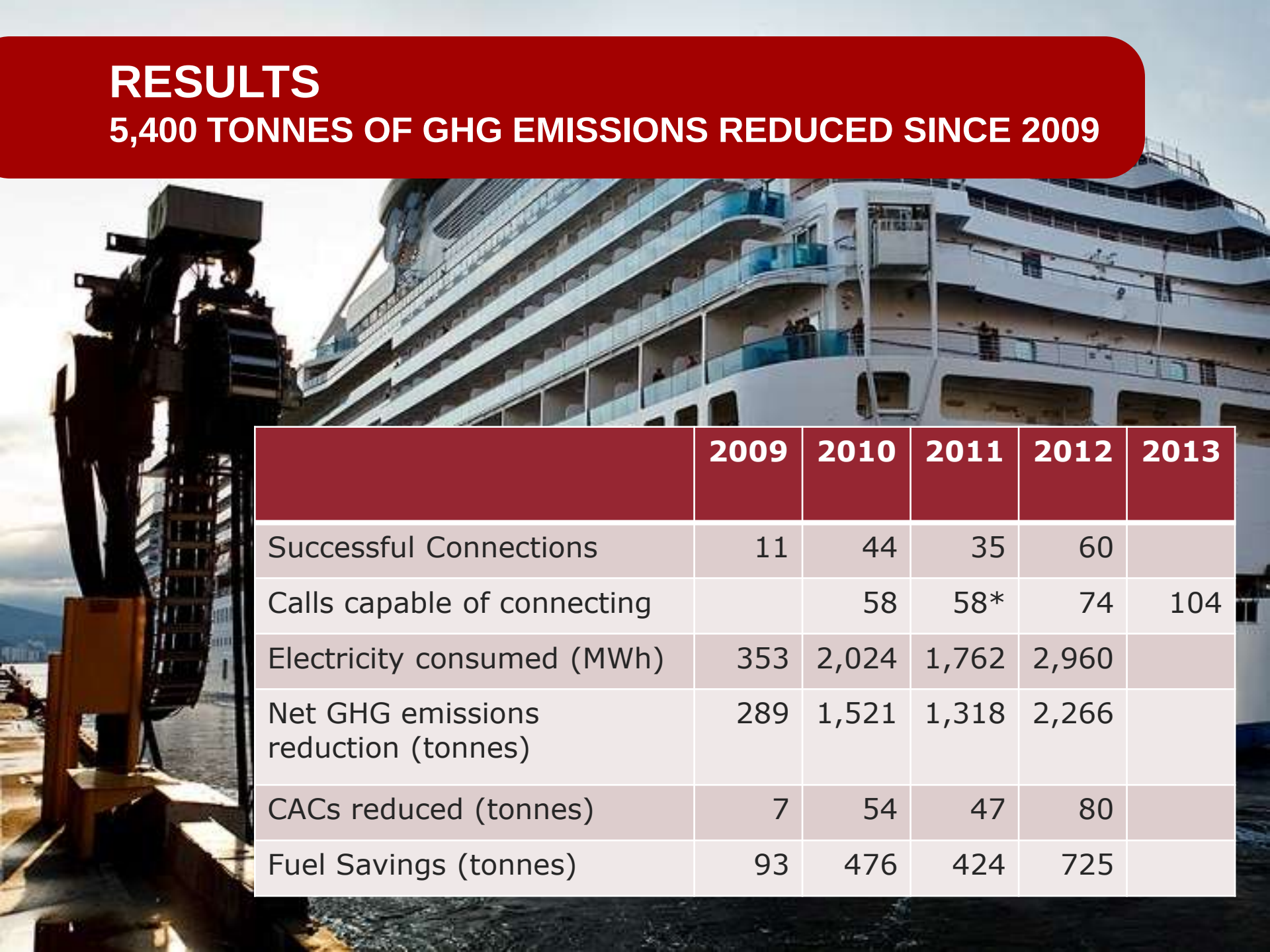
Holland America Line
A Signature of Excellence

Disney CRUISE LINE

BC hydro
FOR GENERATIONS

RESULTS

5,400 TONNES OF GHG EMISSIONS REDUCED SINCE 2009



	2009	2010	2011	2012	2013
Successful Connections	11	44	35	60	
Calls capable of connecting		58	58*	74	104
Electricity consumed (MWh)	353	2,024	1,762	2,960	
Net GHG emissions reduction (tonnes)	289	1,521	1,318	2,266	
CACs reduced (tonnes)	7	54	47	80	
Fuel Savings (tonnes)	93	476	424	725	

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