
MARINE

# Fresh Water Generator Case Study MV Hoegh America

HM100 was installed on the vessel's FWG. Over 6 months, water production remained stable at 25 MT/day, while cleaning time reduced to under 2 hours without chemical dosing

| 25 MT/d | <2 hrs | 0 | ↓ |
|---|---|---|---|
| Output Maintained | Cleaning Time Reduced | Chemicals Used | Cleaning effort reduced |

## ⇄ BEFORE & AFTER

**BEFORE**

- ✕ Up to 3 mm scale on titanium plates
- ✕ Chemical dosing required for operation
- ✕ Cleaning took 24–48 hours

**AFTER**

- ✓ Water output maintained at 25 MT/day
- ✓ Plates clean with loose scale only
- ✓ Cleaning done in under 2 hours without chemicals

BEFORE

*FWG plates with heavy scale build-up*

AFTER

*FWG plates clean with loose scale only*

## OVERVIEW

MV Hoegh America is a Ray Car Carrier Ltd vessel managed by Stamco Ship Management Ltd. Its APV freshwater generator has a production capacity of 25 MT/day when clean, but output typically falls as scale builds up on the titanium plates. A HM100 unit was installed as part of a proof-of-concept trial to assess its effect on scale formation, maintenance time, and chemical use over a six-month period between December 2012 and June 2013.

## CHALLENGE

The vessel needed to reduce scale build-up, cleaning time, and chemical use on the FWG without affecting freshwater production.

- FWG performance reduced as scale built up on titanium plates
- Up to 3 mm of scale present despite regular chemical dosing
- Cleaning took 24–48 hours and risked plate damage
- Operators aimed to reduce material and labour costs

## SOLUTION

A HM100 unit was installed on the 4-inch seawater inlet pipe approximately 1 metre before the FWG inlet, connected to the EJB and main power supply.

| | |
|---|---|
| UNIT INSTALLED<br>**1x HM100** | INSTALLATION POINT<br>**4 inch seawater inlet pipe, 1 m before FWG** |
| INSTALL DATE<br>**10 December 2012** | INSPECTION DATE<br>**30 June 2013** |

INSTALLATION

*Unit on inlet*

SITE

*Internal FWG inspection*

## RESULTS

**Output Maintained**
FWG production remained at 25 MT/day throughout the six-month trial.

**Faster Cleaning**
Opening, cleaning and closing took under two hours, reduced from 24–48 hours.

**No Chemical Dosing**
The dosing pump was disabled and no chemicals were used during the trial period.

**Plates Mostly Clean**
Plates were mostly clean, with only loose scale removable by hand.

**Cleaner FWG Chamber**
The seawater side chamber was clean, with no visible scale, mud or slime.

**Biofilm reduced**
Cleaner surfaces showed reduced biological presence.

KEY TAKEAWAY

## Summary

Hydropath carried out a six-month proof-of-concept trial on the MV Hoegh America freshwater generator using a HM100 unit. Before installation, the titanium plates had up to 3 mm of scale despite regular chemical dosing, and cleaning typically took 24–48 hours. After installation, freshwater production remained at 25 MT/day, plates were mostly clean with only loose scale, the chamber was clean, and the full cleaning process was completed in under two hours without chemical dosing.

| 25 MT/d | <2 hrs | 0 |
|---|---|---|
| OUTPUT MAINTAINED | CLEANING TIME | CHEMICALS USED |

## ADDITIONAL PHOTO EVIDENCE

BEFORE

*Soft scale deposit sample from FWG plates*

BEFORE

*Scale fragment removed from titanium plates*

BEFORE

*Heavy scale build-up on FWG heat exchanger plates*


BEFORE

*FWG plates with significant scale before cleaning*

RESULTS

*Removed scale and cleaned plates during maintenance*

RESULTS

*Loose scale easily removed from plate surfaces*

AFTER

*Clean FWG plates after scale removal*

RESULTS

*Scale deposits removed from plates during cleaning*

RELATED CASE STUDY

## Fresh Water Generator Case Study

MV Hermes Leader

HydroFLOW® was installed on a vessel FWG to treat scale buildup. The system reduced scale adhesion, improved cleaning efficiency, and helped maintain performance while lowering maintenance effort and downtime.

### 30% Output Drop Managed

Production reduced from 24 to 17 $m^3$/day after 9 months operation

### 7kg Scale Removed

Loose scale removed easily without aggressive cleaning methods

### Reduced Cleaning Effort

Scale detached naturally, cutting labour and preventing plate damage