



WE MAKE YOUR WAVES WORKABLE

MOTION COMPENSATION FOR JETTING MONOPILES FROM FLOATING VESSELS

July 2026
(Revision B)

Executive summary

The Seaqualize Full-Motion Chief (FMC) improves value drivers for Jetting Piling Operations for Monopiles, by:

- Delivering **cost savings of up to €60m** by **reducing project duration** of jetting 97 monopiles by up to 175 days, by **increasing jetting workability** to up to 61%;
- **Mitigating project sensitivity** for start date, delays, vessel availability and damages;
- **Increasing robustness** for variable soil conditions & crane operator skills.

For future operations, the FMC enables eliminating the need for a gripper and feeder-barge transfers.

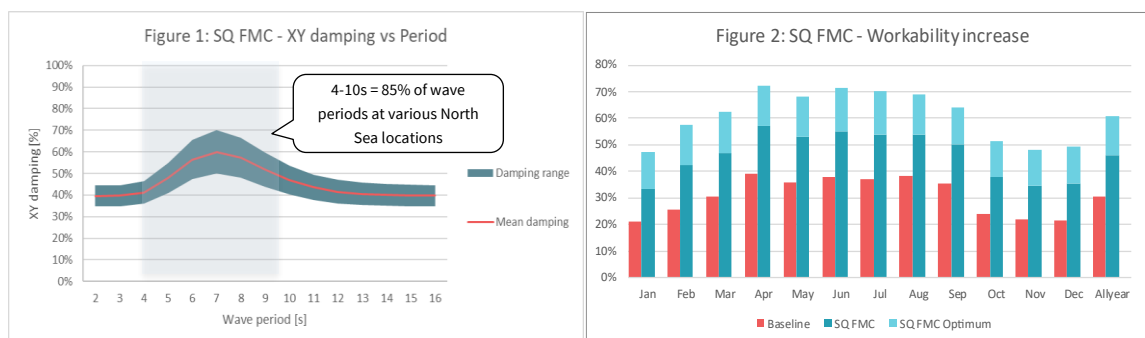
Introduction

Jetting technology, (like Ørsted's [Osonic](#) technology) offers low noise installation of monopiles. Cost reductions are enabled by year-round installation and eliminating the need for hammers, pile-run and noise reduction spreads. The Seaqualize [Full-Motion Chief](#) (FMC) enhances this potential by (A) reducing project duration by increasing workability, (B) mitigating risk, (C) improving the jetting process and (D) enabling further cost reductions.

The FMC is an innovation building on our proven [Balanced Heave Compensation](#) technology, as currently deployed in the [HC750 and HC1100](#) tools, which have already safely transferred >280.000mT.¹ In addition to vertical movements, the FMC compensates horizontal motions, without interfaces to the crane.

A – Reducing project duration by increasing workability

Our study shows that movements of the crane tip and double-pendulum effects limit workability of the jetting procedure. The FMC reduces such motions by 35-70% (XY damping, fig. 1) and >95% (heave compensation)², increasing workability to 46-61% on average year round (fig. 2).³



The workability increase leads to a higher rate of monopiles installed per month (fig. 3) and a reduction in project duration of jetting 97 monopiles by as much as 125-175 days (fig. 4). In addition to cost savings up to €60m, this results in more flexibility in asset and project planning and less sensitivity for project risks such as start date uncertainty (fig. 4), delays, vessel non-availability etcetera.



B – Mitigating risk

Encountering objects undetected by geological survey may compromise the jetting process and potentially damage jets or the monopile. A monopile suspended below an FMC can only apply a configurable maximum force to such objects, mitigating the risk on damage when compared to suspension below the hook of a crane. In case of re-installation a few metres away, the FMC can facilitate optimized recovery of the monopile by providing configurable retracting motions (XYZ).

C – Improving the jetting process

Without an FMC, the jetting process depends on the skills of the crane operator: different geological layers require manually operated, variable downward and upward speeds of the monopile. By balancing the weight of the monopile and counteracting undesired vertical motions, the FMC provides unmatched sensitivity for changes in the geological layers and full motion control. This enables the development of control algorithms for optimized and automated penetration of variable geological layers.⁴

D – Further costs reductions

For future operations, further cost reductions can be realized by eliminating the need for a gripper. The FMC aims to enable such operations by enhancing XY controls and integration

with existing taglines systems. The FMC offers additional cost reduction potential by enabling feeder-barge transfers and upending floating monopiles with a certified DAF of 1.05.

Cost savings

For a project with a baseline duration of 300 days, a conservative, a reduction in project duration of 175 days results in costs savings of around €60m, lowering the total cost of jetting 97 monopiles from a floating vessel to around €60m or €600k per monopile.

¹ Delivered on schedule despite challenging supply-chain conditions for deployment on Southfork, Vineyard1 and Coastal Virginia Offshore Wind projects with an uptime of >99%, outstanding client approval, DNV certified DAF of 1.1 (1,05 for upcoming projects), operations included floating to fixed, fixed to floating and floating to floating transfers.

² Heave compensation performance according to HC750 and HC1100 track record.

³ At North Sea location, 20 year CMEMS wave dataset (2005-2025), P50 confidence scenario, Hs 2,5 for Tp 4-9 and Hs 1,8 for Tp 10-16 (equal to cut-off values for deployment of Osonic technology).