



# Power-to-X

Towards a future based on  
renewable energy sources

New Green Solutions

**DESMI**  
Make life flow



# Building a low-emission future

As a Power to X professional, you are working in one of the sectors that is showing the most promise in a world that needs new green solutions more than ever.

We have pioneered the design and optimization of critical flow processes for multiple industries, and we work closely with the Power to X sector to find more efficient ways of converting sustainable energy into green fuels.

You can use our utility pumps in balance-of-plant solutions that manage critical heating and cooling systems, and you can draw on our IoT, engineering, and after-sales services to operate your PtX plant efficiently and point the way towards a low-emission future based on renewable energy.





# Our Offerings for the Power-to-X Industry



## Pumps

**DESMI'S EXPERTISE IN PUMPING SOLUTIONS** plays a pivotal role in optimizing Power-to-X processes. From robust pumps designed for efficient energy conversion to tailored systems ensuring seamless fluid transfer, DESMI's pumping precision forms the backbone of reliable and sustainable Power-to-X operations. Our custom-engineered fluid transfer systems cater to the unique needs of Power-to-X setups, providing reliable and precise fluid handling for various stages of the conversion process.



## IoT solutions/VFD

**THROUGH IOT SOLUTIONS FOR MONITORING AND CONTROL**, DESMI enable users to monitor and control Power-to-X processes remotely. Real-time data insights enhance decision-making, ensuring optimal performance and resource utilization. By incorporating Variable Frequency Drives (VFD) technology, DESMI enhances the flexibility and efficiency of Power-to-X systems. Precise control over pump speeds and energy consumption allows for dynamic adjustments to match varying operational requirements.



## Engineering

**TAILORED TO MEET THE SPECIFIC NEEDS OF EACH CLIENT** as DESMI engineers custom Power-to-X solutions, considering the unique requirements of each industry. Scalable and adaptable, these systems are crafted to maximize efficiency and reliability. This includes fine-tuning for energy storage, conversion, and overall system performance.



## Service

**SERVICE, OUR DEDICATED SERVICE BRANCH**, caters to your every service need, spanning from installation and commissioning to ongoing service and parts support, available 24/7 across the globe. With our DESMI 48 concept, you can get a selection of replacement pumps within two working days, and we carry out repairs on many different pump brands. Our mission is simple: to make it easier to own a DESMI product.

# Key Benefits of DESMI Power-to-X Pump Solutions



**A One-Stop-Shop** destination for PtX pump solutions, offering a streamlined approach to sustainable energy conversion



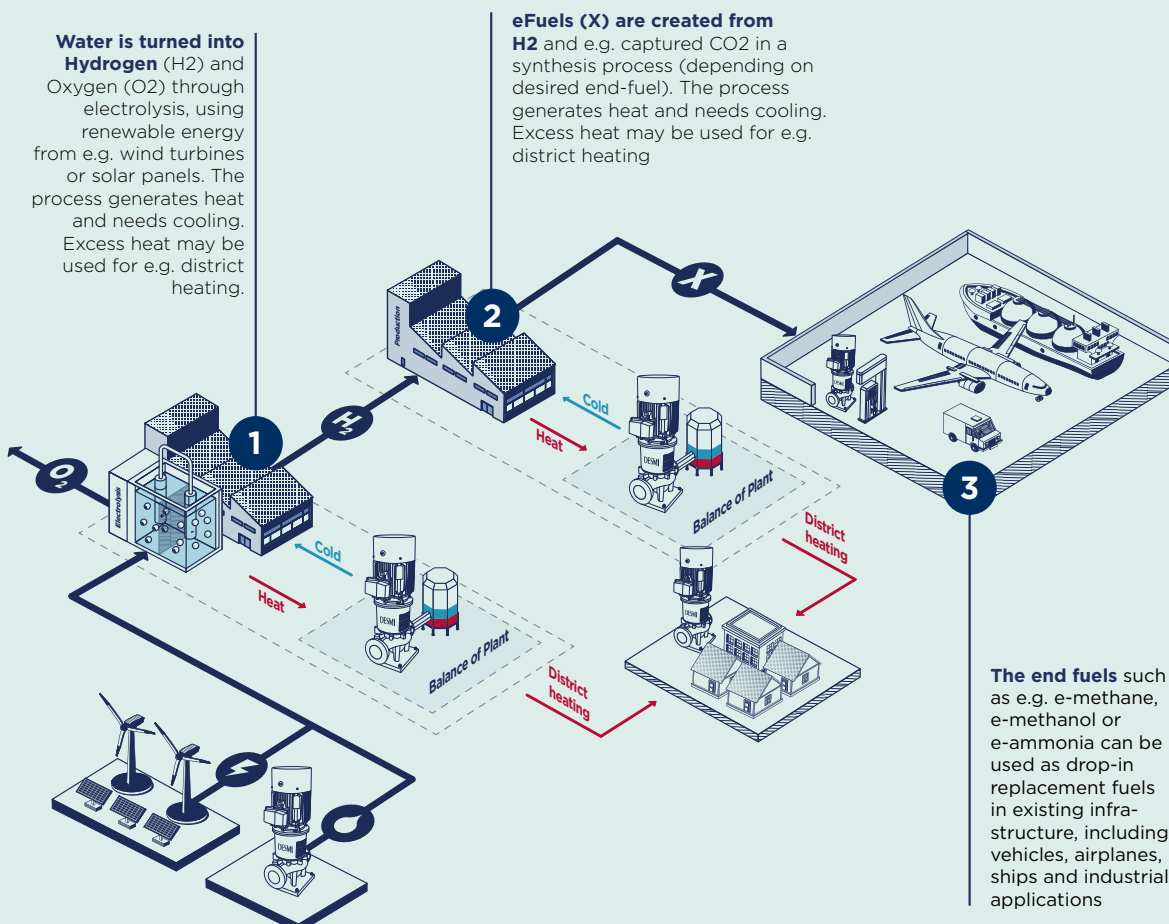
**Energy Efficiency** with pumps and systems designed for maximum energy transfer, contributing to a greener energy landscape



**Reliability and Smooth Operation** for uninterrupted performance



**Knowledge and experience within pump solutions** rooted in decades of expertise



# DESMI Power-to-X cooling Pumps



DESMI ESL



DESMI ESLH



DESMI DSL



DESMI DSL Horizontal

## Single-stage, End-suction

ESL/ESLH In-line and end-suction single-stage centrifugal pump	
Nominal diameter (DN)	25 to 100
Flow rate - 50Hz	Up to 200 m <sup>3</sup> /h (880 US gpm)
Flow rate - 60 Hz	Up to 250 m <sup>3</sup> /h (1100 US gpm)
Head	Up to 65 m (210 ft)
Pressure	Up to 30 bar (435 psi)
Temperature	Up to 140°C (284°F)
Motor	Standard and EX motors
VFD	Direct or wall-mounted
Applications: Water, water with additives, seawater and oils up to 500 cSt.	

## Double Suction, In-line

DSL Vertical and horizontal inline double suction centrifugal pump	
Nominal diameter (DN)	150 to 600
Flow rate - 50 Hz	Up to 6200 m <sup>3</sup> /h (27300 US gpm)
Flow rate - 60 Hz	Up to 7400 m <sup>3</sup> /h (32580 US gpm)
Head	Up to 140 m (459 ft.)
Pressure	Up to 25 bar (363 psi)
Temperature	Up to 140°C (284°F)
Motor	Standard and EX motors
VFD	Wall-mounted
ATEX approved.	
Applications: Water with additives and seawater.	



DESMI NSL Horizontal



DESMI NSL



DESMI NSLH



DESMI NSLV

## In-line, Vertical & Horizontal

NSL Vertical and horizontal in-line centrifugal pump	
Normal Diameter (DN)	80 to 350
Flow rate - 50 Hz	Up to 2000 m <sup>3</sup> /h (8800 US gpm)
Flow rate - 60 Hz	Up to 2400 m <sup>3</sup> /h (10600 US gpm)
Head	Up to 195 m (640 ft)
Pressure	Up to 25 bar (360 psi)
Temperature	Up to 140°C (284 °F)
Motor	Standard and Ex motor
VFD	Direct or Bulhead/Wall-mounted
ATEX approved	
Applications: Water, water with additives, seawater and oils up to 500 cSt.	

## End-suction

NSLH/V Vertical and horizontal end-suction centrifugal pump	
Nominal diameter (DN)	80 to 400
Flow rate	Up to 1800 m <sup>3</sup> /h (7900 US gpm)
Head	Up to 220 m (720 ft)
Pressure	Up to 25 bar (363 psi)
Temperature	Up to 150°C (302°F)
Motor	Standard and EX motors
VFD	Direct or wall-mounted
ATEX approved.	
Applications: Water, water with additives, seawater and oils up to 500 cSt.	

# DESMI Power-to-X Pumps



HOMA Submersible wastewater pumps

## Submersible wastewater pump

Submersible wastewater pump	
Nominal diameter (DN)	150 to 600
Flow rate - 50 Hz	Up to 6200 m³/h (27300 US gpm)
Flow rate - 60 Hz	Up to 7400 m³/h (32580 US gpm)
Head	Up to 140 m (459 ft.)
Pressure	Up to 25 bar (363 psi)
Temperature	Up to 95°C (203°F)
Motor	Standard and EX motors
VFD	Wall-mounted
ATEX approved.	
Applications: Water with additives and seawater.	



End-fuel pump

## Magdrive In-line & End suction Fuel Pump

End-fuel pumps	
Normal Diameter	25 to 100
Flow rate - 50 Hz	Up to 150 m³/h (660 US gpm)
Flow rate - 60 Hz	Up to 180 m³/h (800 US gpm)
Head	Up to 130 m (430 ft)
Pressure	Up to 16 bar
Temperature	Min. -40°C / Max. 120°C
Motor	Standard and Ex motor
VFD	Direct and Bulkhead/Wall-mounted
Viscosity Range	Min. 0.3 / Max. 300 cSt
ATEX approved	
Common Applications: Where no pumping medium leakage is allowed.	
Pumping of: Methanol, Ethanol, Ammonia, Hydrocarbons (fuels) & Amine/Water Mixtures.	
Note: The pumps are designed for pumping liquids without solid/clogging particles. These could cause premature failure of the pump bearings and/or mag-drive.	

# DESMI Vertical Centrifugal Multi-stage Pumps

## Multi-stage

Vertical DPV	
2-pole	2, 4, 6, 10, 15, 25, 40, 60, 85, 125
4-pole	15, 25, 40, 60, 85, 125
Capacity range (m³/h)/(gpm)	0.5-193/2-849
Maximum pump pressure (m)/(ft)	5/16 to 400/1312
Temperature range medium	-20 - +140°C / -4 - 284°F
Applications: Water, sprinkler, industry, cleaning systems and boiler feeds.	

DESMI DPV Pumps



COOLING OF  
SMALL UNITS



# Ensuring The Power of Tomorrow For European Energy



European Energy is constructing the largest E-methanol plant in the world. With an array of DESMI Centrifugal pumps, they are able to provide ships around the world with about 32,000 tons of E-methanol every year, while also forwarding the excess heat for over 3,300 local households. All with renewable energy!

At the heart of European Energy's Power-to-X plant in Kassoe, Denmark, are eleven Balance-of-Plant pumps. By leveraging power from the region's largest solar park to split water into hydrogen and oxygen, these pumps have been specifically engineered to maintain the correct temperature for the electrolysis needed in the processing. The effort not only optimizes performance, but also safeguards the longevity and efficiency of the entire plant.

As CO<sub>2</sub> is added to hydrogen, the plant produces e-methanol, which is a versatile fuel that holds promise for a myriad of applications, from powering methanol-fueled ships to supporting production processes for industry giants.

DESMI's involvement in the project extends beyond pump installation; participation has been integral throughout the project's journey, from the design of the pilot plant to the commercialized facility. During the design phase, DESMI collaborated closely with the engineering company, engaging in extensive dialogue to optimize the cooling system.

The integration of DESMI's pumping solutions ensures seamless fluid handling throughout the Power-to-X conversion process. From precise temperature control to efficient energy conversion, the pumps enable European Energy to achieve optimal performance in their flow processes.

DESMI has been a trusted partner through the building of the plant in Kassoe. We are satisfied with their work. The pumps were chosen based on their balance of cost-effectiveness and quality. They live up to the expectations.

**Ricki Refstrup**

Maintenance Lead at European Energy



## Location

Kassoe Solar Park,  
Denmark



## Application

Power-To-X Plant  
making E-methanol  
with Solar Panels



## DESMI products

11 Balance-of-Plant  
pumps, regulating the  
systems temperature

# We exist to keep your business flowing

DESMI works closely with engineers, developers, and designers to deliver critical flow processes that enable efficient and viable Power to X solutions. Our pumps and supporting systems for energy applications are trusted worldwide for dependability and the lowest total cost of ownership.

At DESMI, our focus has never been on discovering what we can do – it's about pushing the boundaries of what we can do for you. Our class-leading equipment, solutions, and services are designed specifically for your applications and help you point the way towards a low-emission future based on renewable energy.

Founded in Denmark in 1834, we have provided the expertise, solutions, and aftermarket support our customers need for nearly two centuries. We help you reduce your climate impact and contribute to a decarbonized future whilst realizing your ambitions for reliable performance, compliance, and growth.

Together, we can make a difference, whatever the future holds. Because we, like you, are here to **make life flow**.  
For more information, **visit [desmi.com](https://desmi.com)**

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