A vibrant green leaf with detailed vein patterns is shown floating on a surface of water. The water is clear and shows concentric ripples around the leaf, suggesting it has just been placed there. The background is a soft, light blue gradient.

Innovative solutions for tomorrow

GF Piping Systems

**Enabling safe and sustainable  
transport of water & gas**



# Water scarcity & climate change are not future topics



**29%**

rise in number & length of droughts since 2000



**1 in 3**

people have no access to safe drinking water



**24 million**

people displaced in 2021 due to climate change



**1 million**

plant & animal species at risk of extinction

29% rise in number of droughts - UNCCD Drought in Numbers 2022  
24 million people displaced to climate change - IDMC & NRC joint report

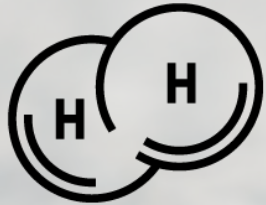
1 in 3 have no access to safe drinking water - WHO/ UNICEF report on drinking water, sanitation & hygiene  
1 million species at risk of extinction – UN global assessment report on biodiversity and ecosystem services

# We can create positive impact in core markets

## Distribution

## Consumption

Climate Change



Enabling  
Hydrogen  
Economy



Improving  
Energy  
Efficiency

Water Scarcity



Solving  
Water Loss



Embracing  
Water Reuse

# We are investing to fuel sustainable growth

Climate Change

Water Scarcity

## Distribution

Enabling Hydrogen Economy



Hydrogen Ready Certifications and Green Materials

## Solving Water Loss



Innovations such as NeoFlow PRV, Ultrasound NDT

## Consumption

Improving Energy Efficiency



Sales and Production Footprint: COOL-FIT

## Embracing Water Reuse



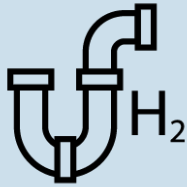
Process Automation Portfolio and People Investments

# Clean Hydrogen is central to reach net zero emissions as it can abate 80 gigatons of CO<sub>2</sub> by 2050 ...



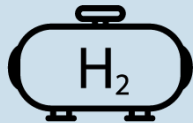
80 gigatons CO<sub>2</sub> reduction source: Hydrogen Council & McKinsey report

# USD 500 billion spending on Hydrogen projects till 2030 already announced ...



**359**

large scale projects in production, distribution, storage & utilization



**70GW**

H<sub>2</sub> electrolyser production capacity from renewable sources

## GF Technology helps enable the Hydrogen Economy



**MULTI/ JOINT 3000 Plus**



**Process Automation**



**ELGEF PLUS**



**PROGEF**

£500B spending, 359 projects, 70GW H<sub>2</sub> capacity from renewable source: Hydrogen Council and McKinsey Insights July 2021

# ... as we co-create solutions with our customers to enable the H2 economy



- Inland water cargo vessel to run **100% on H2**
- The **825 kW Nedstack PEM fuel cell** supplies propulsion and auxiliary power
- Reduces greenhouse gases by **2000 tones of CO2** every year



GF solutions inside Nedstack's H2 fuel cell



# 126 billion liters of water is lost in utilities every year, enough to fill lake Zurich 32 times over ...



126 trillion liters water loss source: Liemberger, R Wyatt, quantifying global non revenue water problems/ Zurich lake analogy: Internal GF analysis

# ... as USD 39 billion is lost in utility revenues globally



## Thames Water

London, 15.8 m people

**22%**

NRW rate



## Houston Public Works

Houston, 27 m people

**28%**

NRW rate



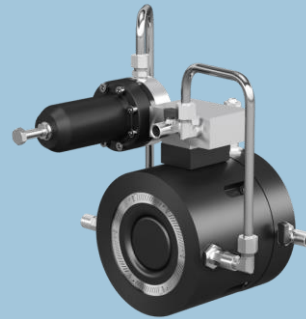
## Shanghai Municipal

Shanghai, 23.2 m people

**19%**

NRW rate

## GF Technology helps prevent Non Revenue Water



NeoFlow PRV



Ultrasonic NDT



MULTI/ JOINT 3000 Plus



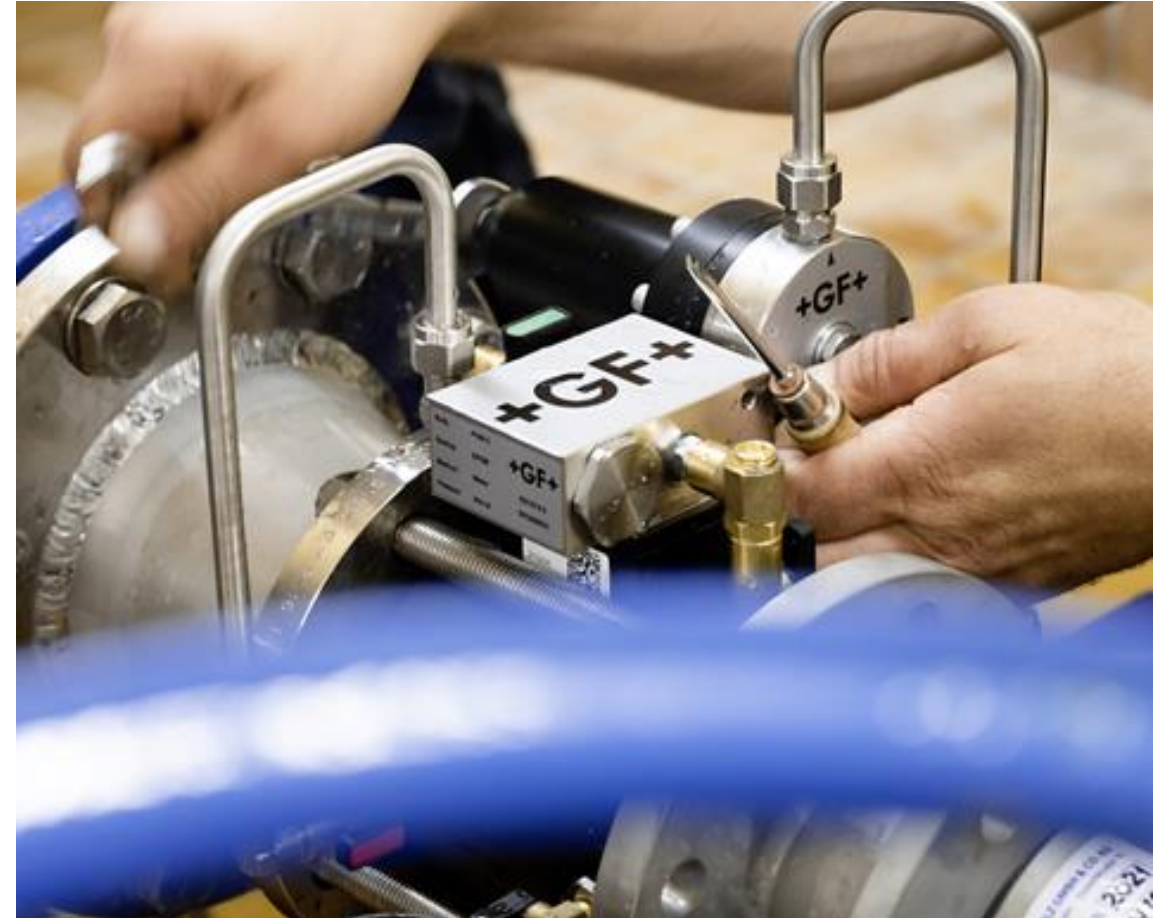
ElectroFusion

USD 39B NRW loss source: Liemberger, R Wyatt, quantifying global non revenue water problems. NRW Rates source: GWI Water Data

# ... as we help utilities fight water loss from pipe leaks

## IRETI

- **Big Italian Utility:** 300 municipalities, 2.8 m people served and 23'000 km of pipe network
- **37% non revenue water rate** in Italy
- **63% less pipe bursts achieved** in 1 year with pressure management from GF NeoFlow PRV



# Buildings use 60% of global electricity and account for 1/3 of global emissions ...



60% electricity, 1/3 emissions source: UNEP energy efficiency for buildings reports

# USD 204 bn spending on energy efficient buildings by 2030 ...



30%

of energy used in buildings is wasted, energy efficiency is key



40%

energy use in buildings is HVAC making it an investment focus

## GF Technology helps improve energy efficiency



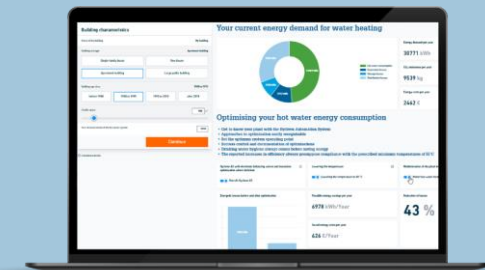
COOL-FIT



HEAT-FIT



Engineering & Prefabrication



Hycleen Energy Calculator

USD 204B spending source: UNEP 2019 actuals extrapolated to 2030 with conservative 3% CAGR, 30% energy in buildings is wasted: US Environment Protection Agency, 40% energy in HVAC source: US Department of Energy/ Government of Australia

# ... as we help our customers achieve green buildings



- German Data Center serving customers looking for **regional & sustainable solutions**
- Data Centers consume a lot of electricity and Baden Cloud aims for **greener operations**
- **30% higher energy efficiency** achieved with COOL-FIT compared to traditional systems



# By 2030, water demand will exceed supply by 40%, making water reuse a key focus ...



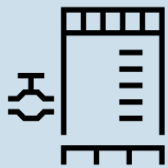
Water demand exceed supply by 40% source: UNEP International Resource Panel report

# USD 49 billion to be spent on water reuse by 2030 ...



**3x**

increase in wastewater reuse by 2030, meeting 9.8% of world needs



**2.7x**

cheaper to build decentralized water treatment facilities

## GF Technology enables water reuse solutions



EcoFIT



Fuseal PP



SYGEF Plus



PROGEF Plus

USD 49B spent on water reuse by 2030 source: consensus estimate and internal GF analysis based on reports from Zion, BCC Research, Research & Markets

3X water reuse increase source: Global Water Funding report David Lloyd Owen. 2.7X cheaper to build: GF internal estimate based on multiple water treatment case studies



# ... as we help our customers to reuse water

## CHASE CENTER

- San Francisco **water tariffs are 2x national average** and is the first US city to mandate water reuse for newly constructed buildings
- **Stormwater, rainwater, greywater reuse system installed**
- **34% reduction in water use** saving 14.4 million liters per year



PICTURE SOURCE ARCHITECT MAGAZINE - JASON O'REAR/ CHASE CENTER

# Enabling Ekopak's recycling water solutions



**Pieter Loose**  
CEO Ekopak



**Sandra Schiller**  
Head Process Automation