



Kinetics Controls
& Innovation Ltd

Engineering Leak Sealing Solutions

ICoTA Techbyte Session

Methane Emissions Reduction Technology

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owned.

In Conjunction With



TotalEnergies

Denmark

Introduction

KCI have a network of International Representatives around the Globe who can assist with leak sealing operations to quickly restore the Integrity of Wells with a major focus on Methane Emission reductions.

★ KCI Headquarters, Aberdeen, Scotland

● KCI International Representatives



Methane Emissions Reduction

❑ Why do we need to reduce Emissions?

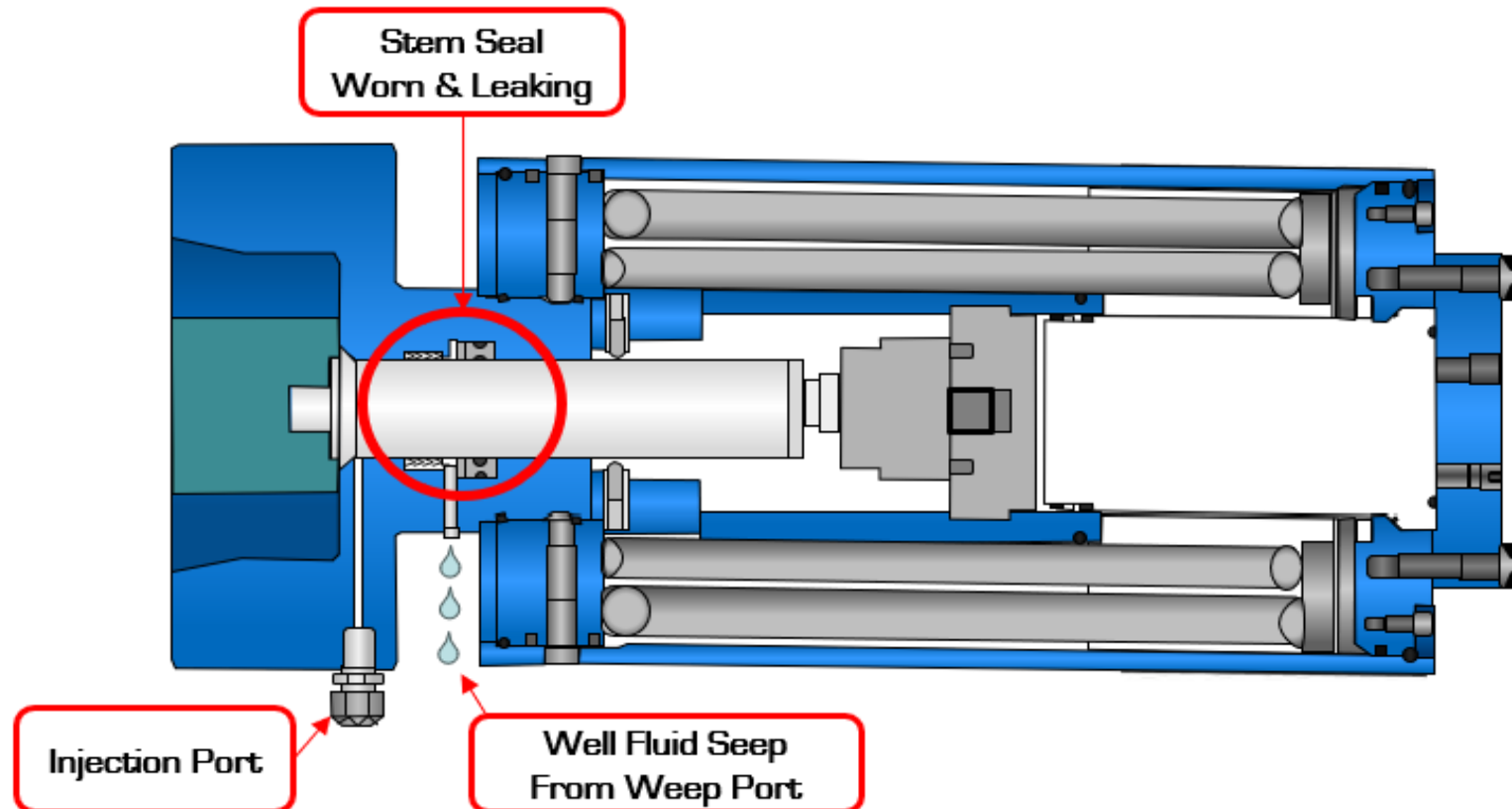
- The Paris Agreement is a legally binding global treaty, adopted in 2015 by nearly every nation.
- Target is 45% reduction in emissions by 2030 & Net Zero by 2050.



Methane Emissions Reduction

❑ How Big is the Emissions Problem?

- 60% of Fugitive Leaks comes from Valves.
- 80% of Valve Leaks come from the Stems.

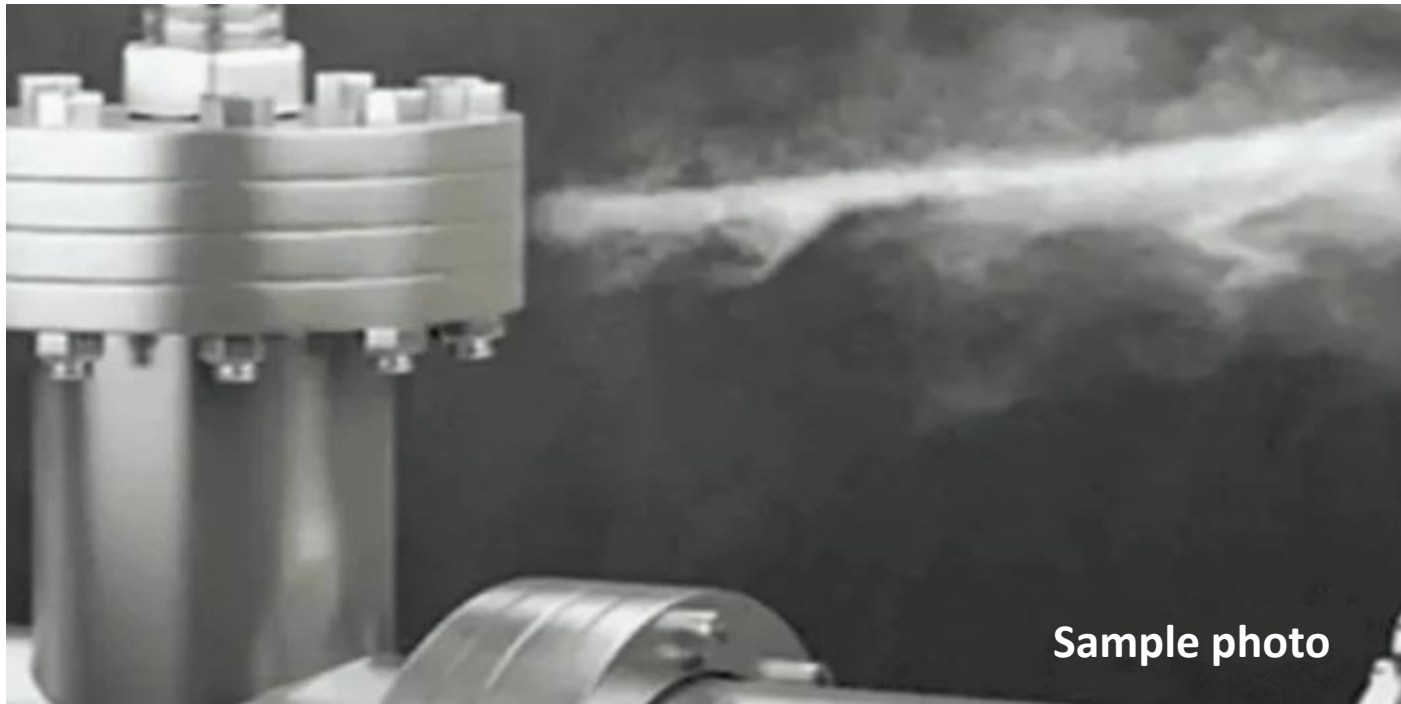


Methane Emissions Reduction

❑ What's the Risk?

Research estimates that 25% of today's global warming is driven by methane gas released by human activities.

Methane, the main component of natural gas, is a greenhouse gas with a warming impact which, over 20 years, is 86 times greater than that of carbon dioxide.



Sample photo

Methane Emissions Reduction

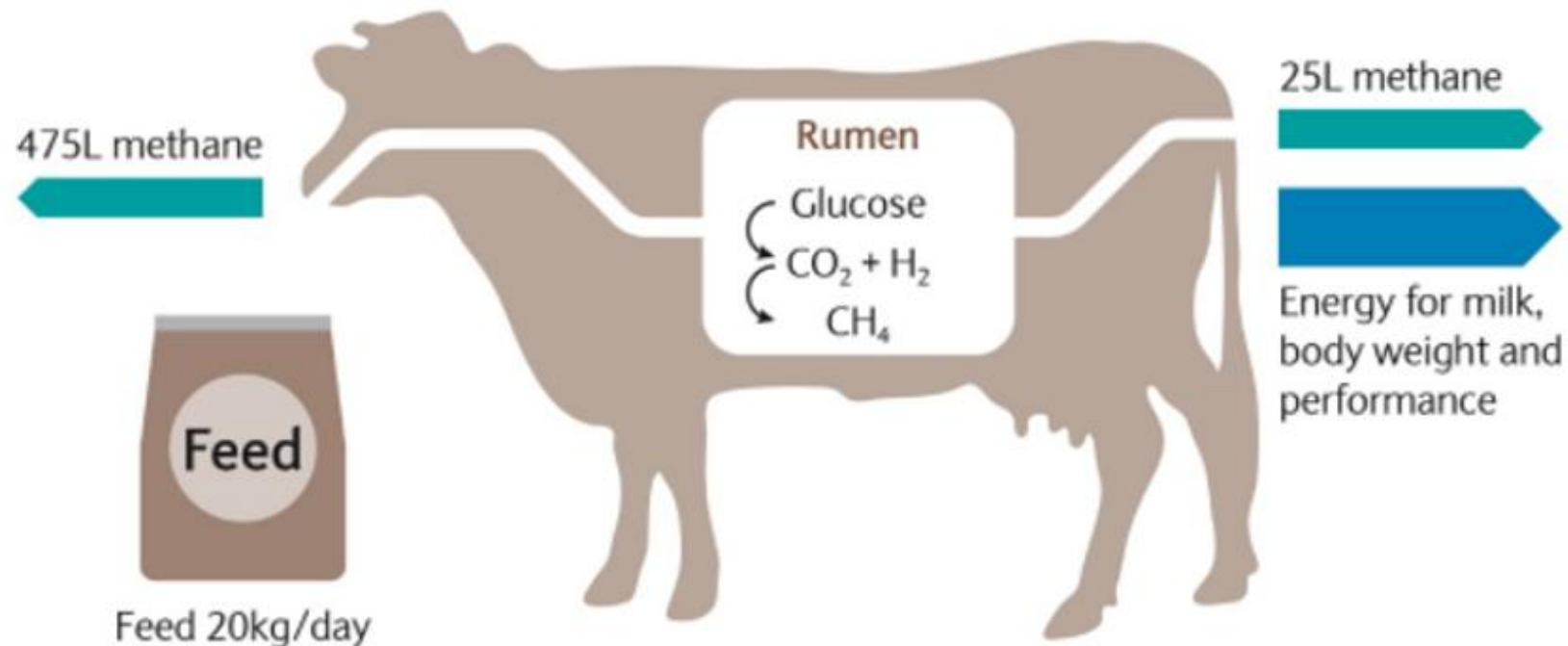
❑ What's the Risk?

Each High Emitting Well at 400 Litres per year is equal to:

Driving 42 Million Miles in a Car.

Energy Use in 2000 Homes Per Year.

By comparison, +/- 400 Litres of Methane is Produced Every Day by a standard UK Cow.



Methane Emissions Reduction

Do you want to reduce

METHANE



EMISSIONS

quickly and effectively?

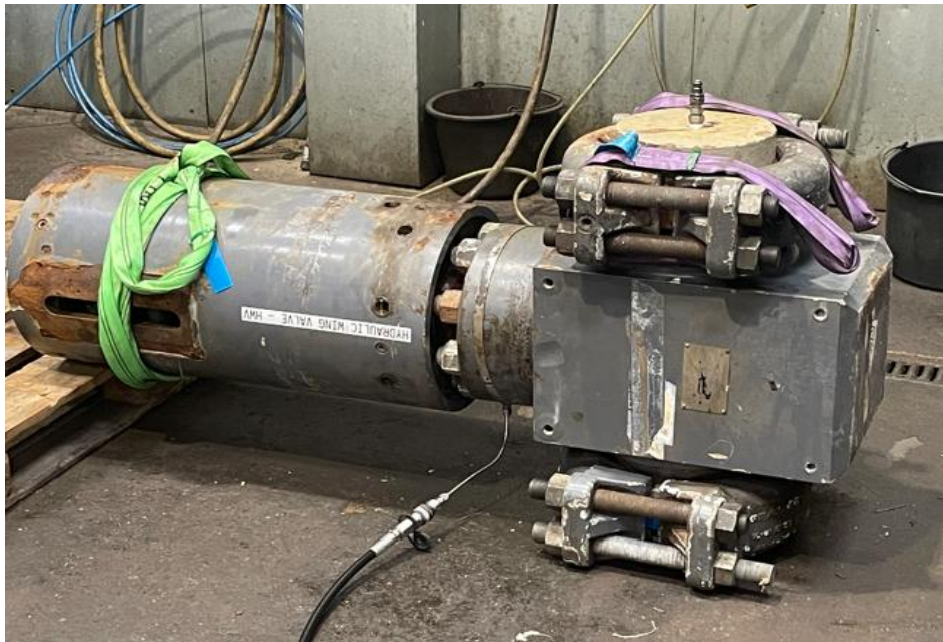
Methane Emissions Reduction

❑ What's the Issue?

TotalEnergies Denmark identified an issue with leaking Stem Seals on a few of their Hydraulically Actuated Tree Valves where they leaked when in travel.

After initial discussions, an onshore trial took place in Denmark with a leaking Valve.

The leak path was further damaged by repeatedly using a hacksaw.



Methane Emissions Reduction

❑ What's the Risk?

As well as the Environmental Damage these Leaking Wells create, there is a higher Primary Risk to humans:

H₂S (Hydrogen Sulphide) Gas.

- H₂S Gas is Colourless, Flammable & Toxic.
- H₂S can leak from these Wells.
- Anything Over 100ppm (parts per million) is immediately dangerous to life.
- Anything Over 700ppm can cause immediate collapse, and death, within just one or two breaths.

Methane Emissions Reduction

❑ What's the Solution?

- KCI have a unique product called Mac-Pac which is a Sealant & Lubricant.
- Mac-Pac is proven to isolate leaking Stem Seals & Gate/Seat interfaces.
- Mac-Pac remains soft and pliable so allows complete movement of the valve to be retained.
- Mac-Pac's Operational Temperature -50°C to $+250^{\circ}\text{C}$.
- It remains in its high viscosity form throughout its temperature range but does not cure.
- Hundreds of successful operations carried out in the last 20 years.

Methane Emissions Reduction

❑ What's the Solution?

Simply deploy Mac-Pac into the Valve using KCI's bespoke Tooling via the standard Grease Port fitting.

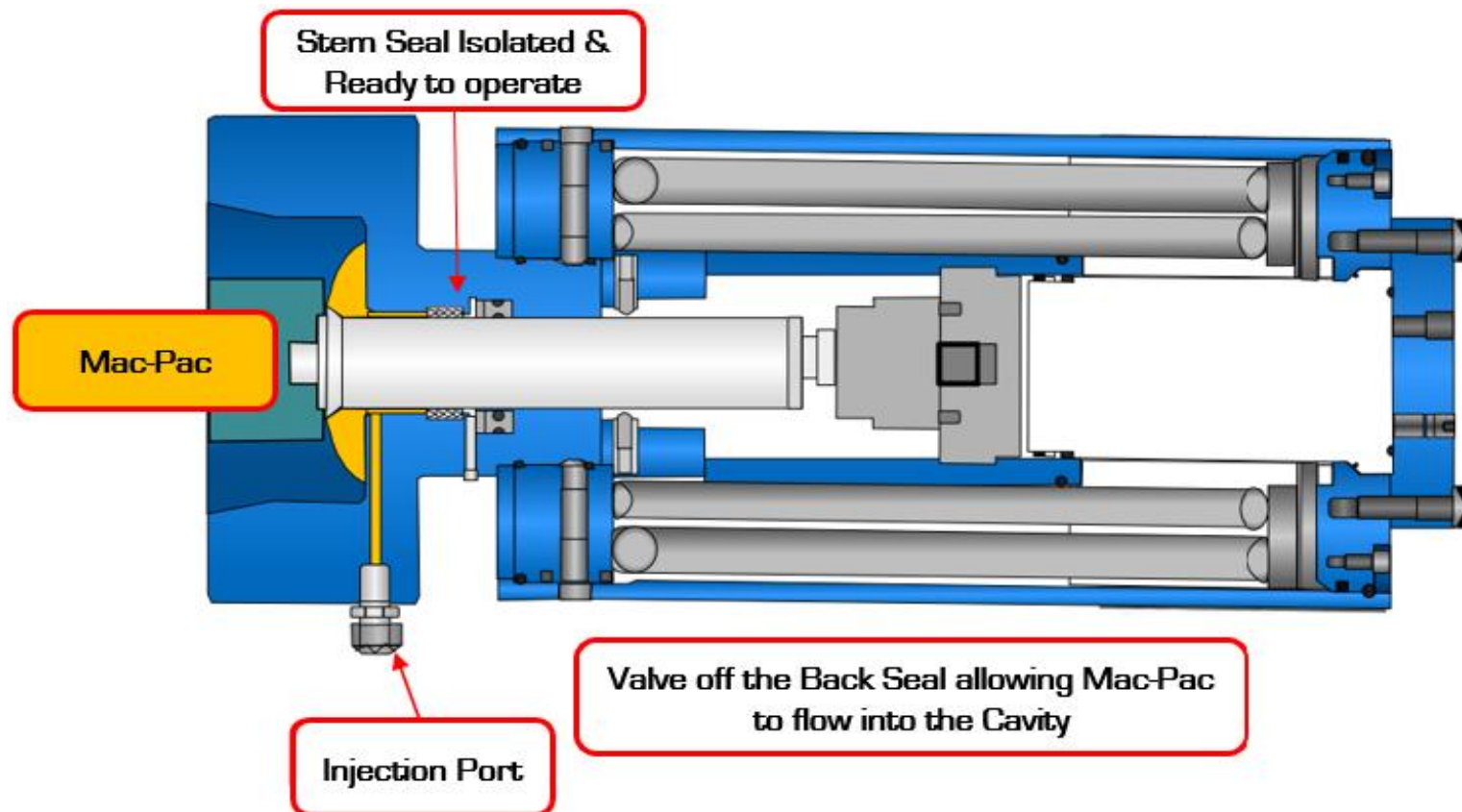


Methane Emissions Reduction

❑ What's the Result?

The result was a successful isolation operation on Halfdan HBA-15 & 19 PWV's.

TotalEnergies Denmark were very happy with the operation and the successful isolation.



Thanks for your attention



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