
KOHLER®



The Event Horizon

THE FUTURE OF COMBUSTION ENGINES

An Energy Transition is Underway



It's a race to net zero.



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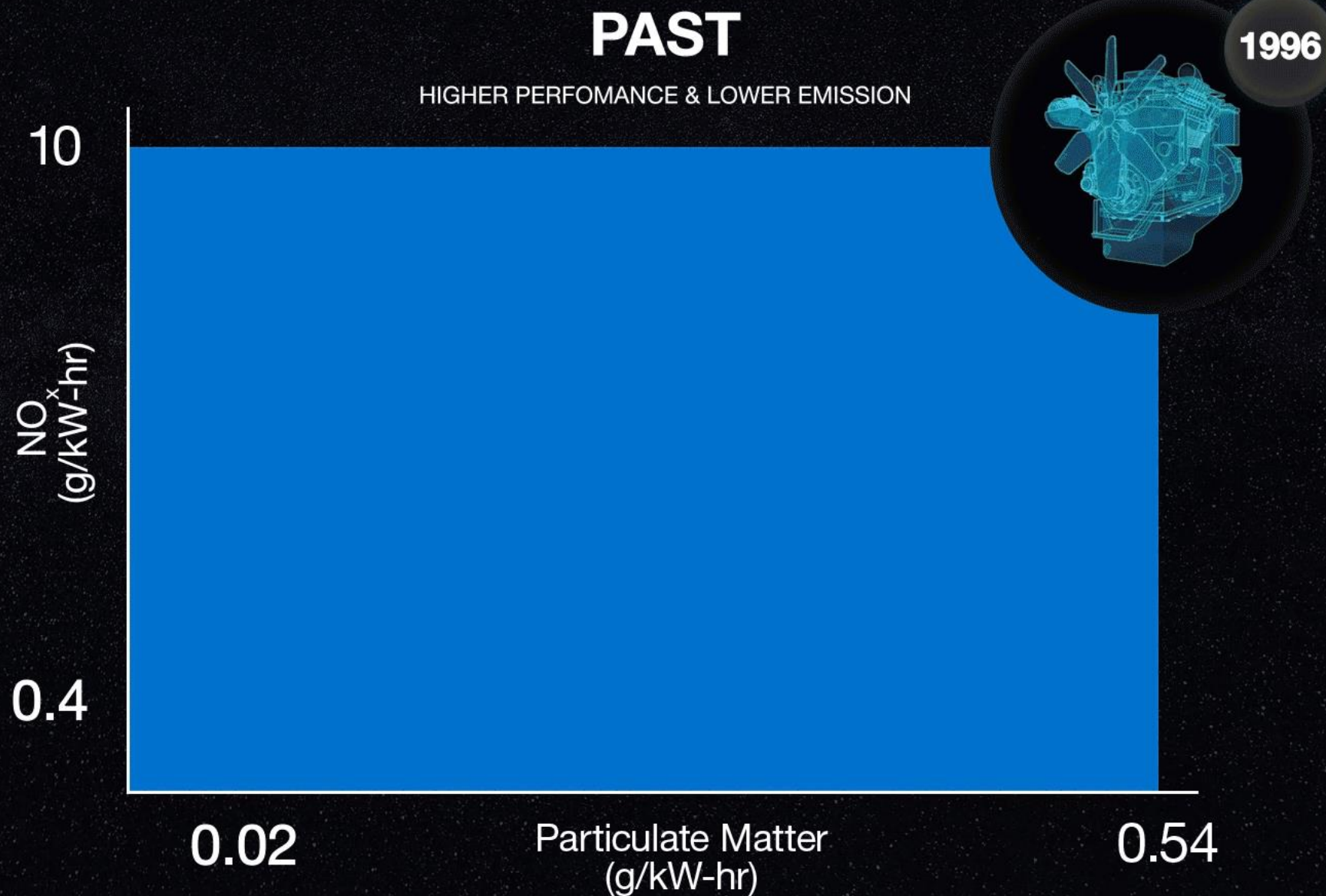
The Other Side of the Coin

USA and EU are not the whole world.

Discrepancy in access to the resources and infrastructure is a major obstacle for realizing ***environmental equity*** for all communities in developing areas.

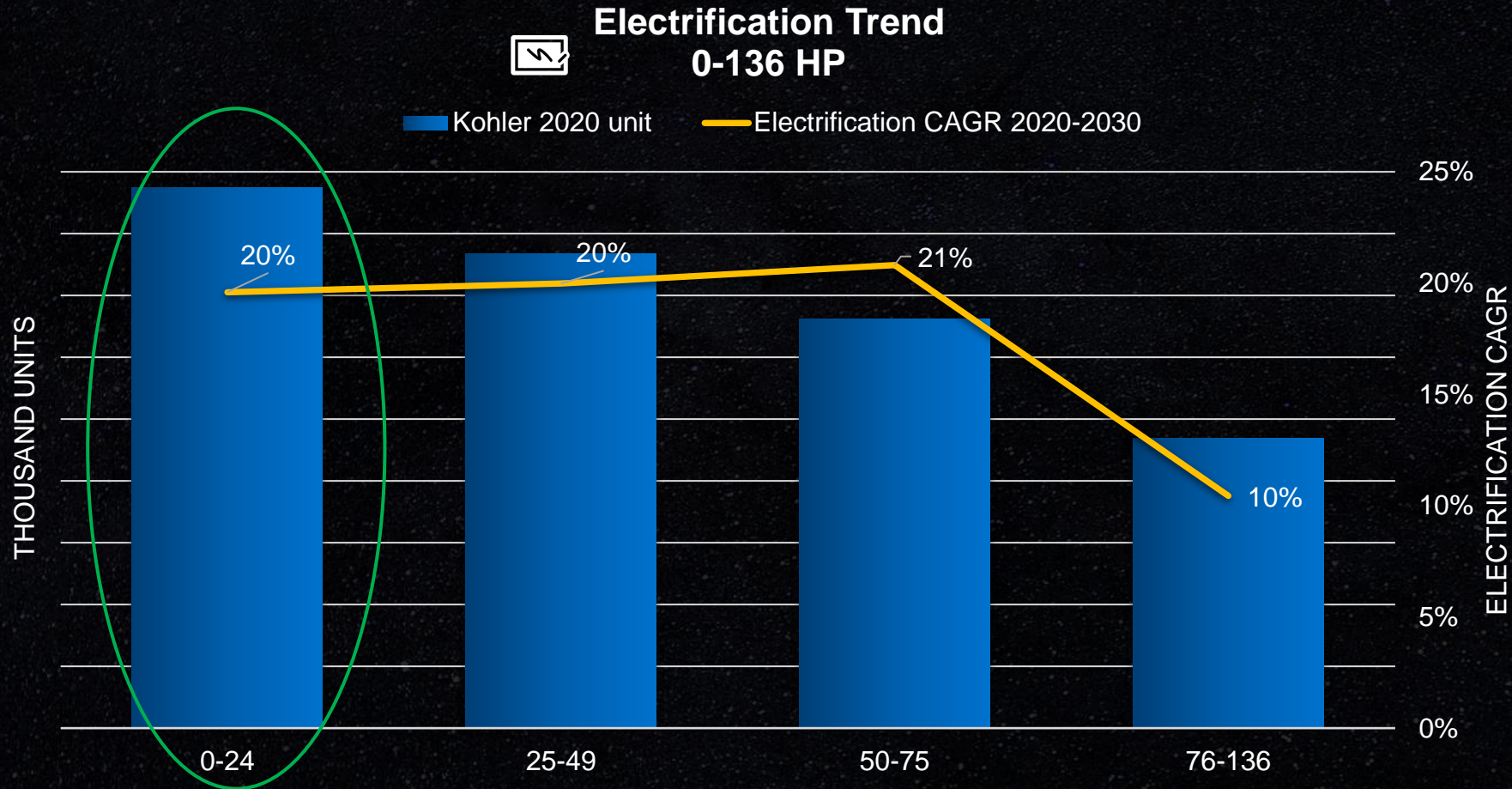


Change of Focus



Small Engines in a Big Market

A unique perspective.



The trend toward electrification is strong nowadays. But not everywhere.



Source: PSR

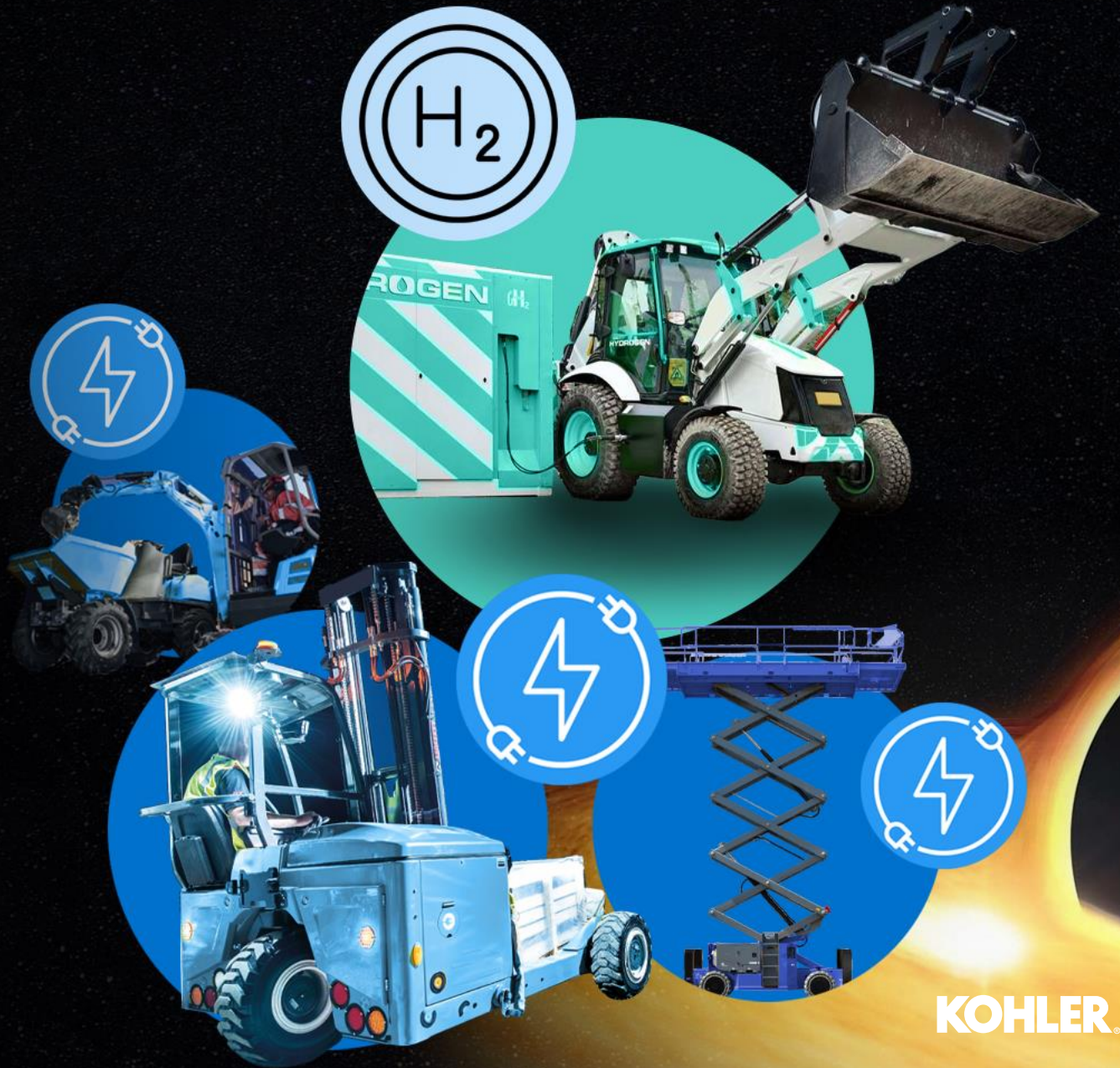
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Living at the Edge

Regulatory framework and policies are an important factor, but so is the individual interest of customer groups.

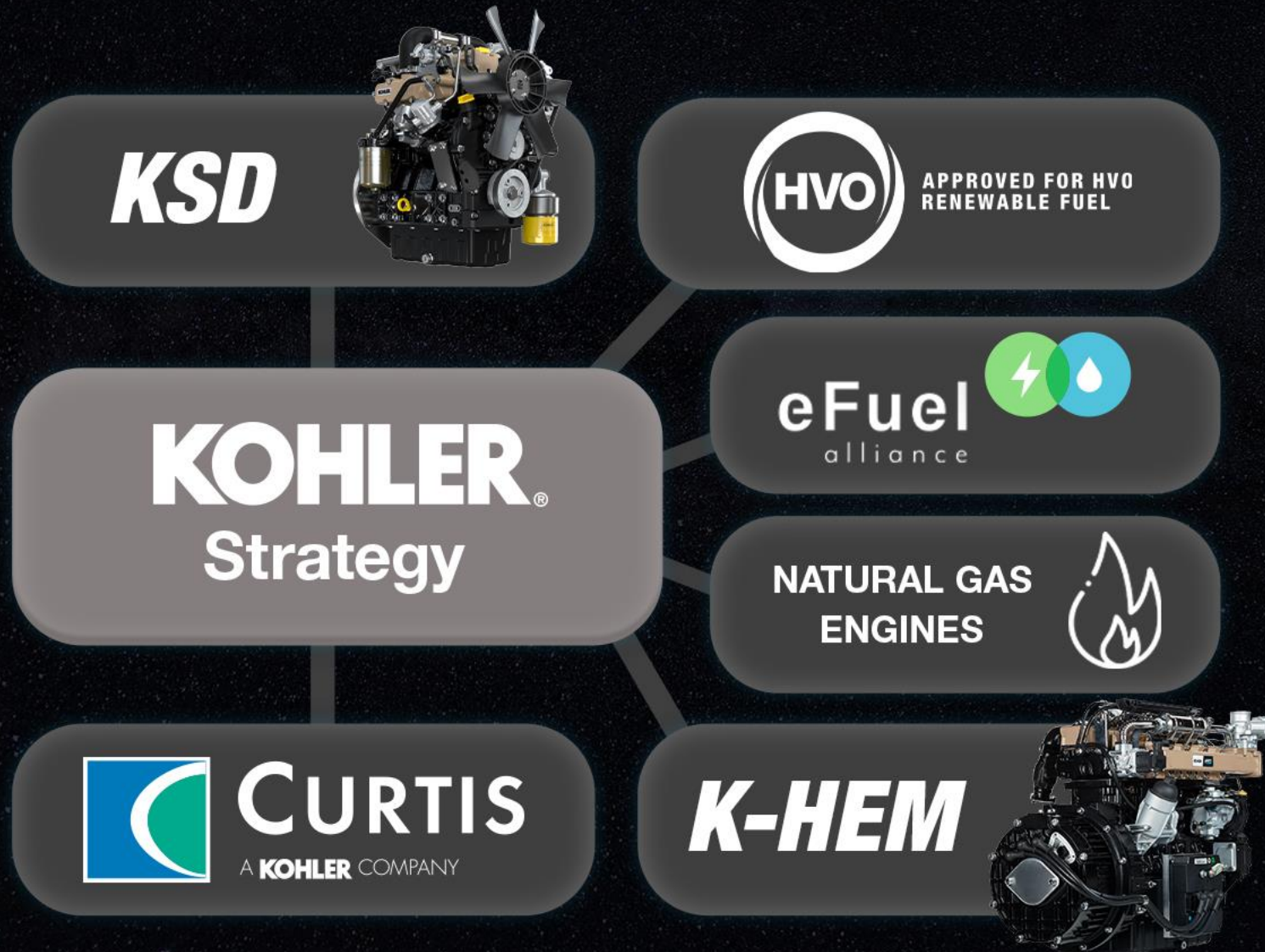
Many customers, many needs, many business opportunities.

We have a responsibility to provide our customers with solutions that enable them to transition to a low-carbon future with minimal impact on their business.



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Embracing the Challenge



EFFICIENCY
IMPROVEMENT



H2-ICE



IMPROVING APPLICATION
INTEGRATION WITH OEMS

Kohler's Near-Term Actions

Increasing demand for diesel engines and expanding engine production

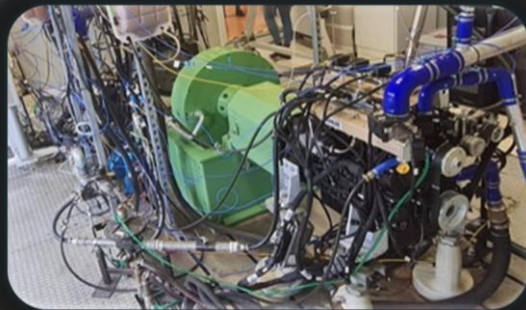
Efficiency improvements (CO₂ reduction) in even the smallest engines

H₂ engines with same performance as diesel ones in advanced development

Natural gas and bio-gas engines under development

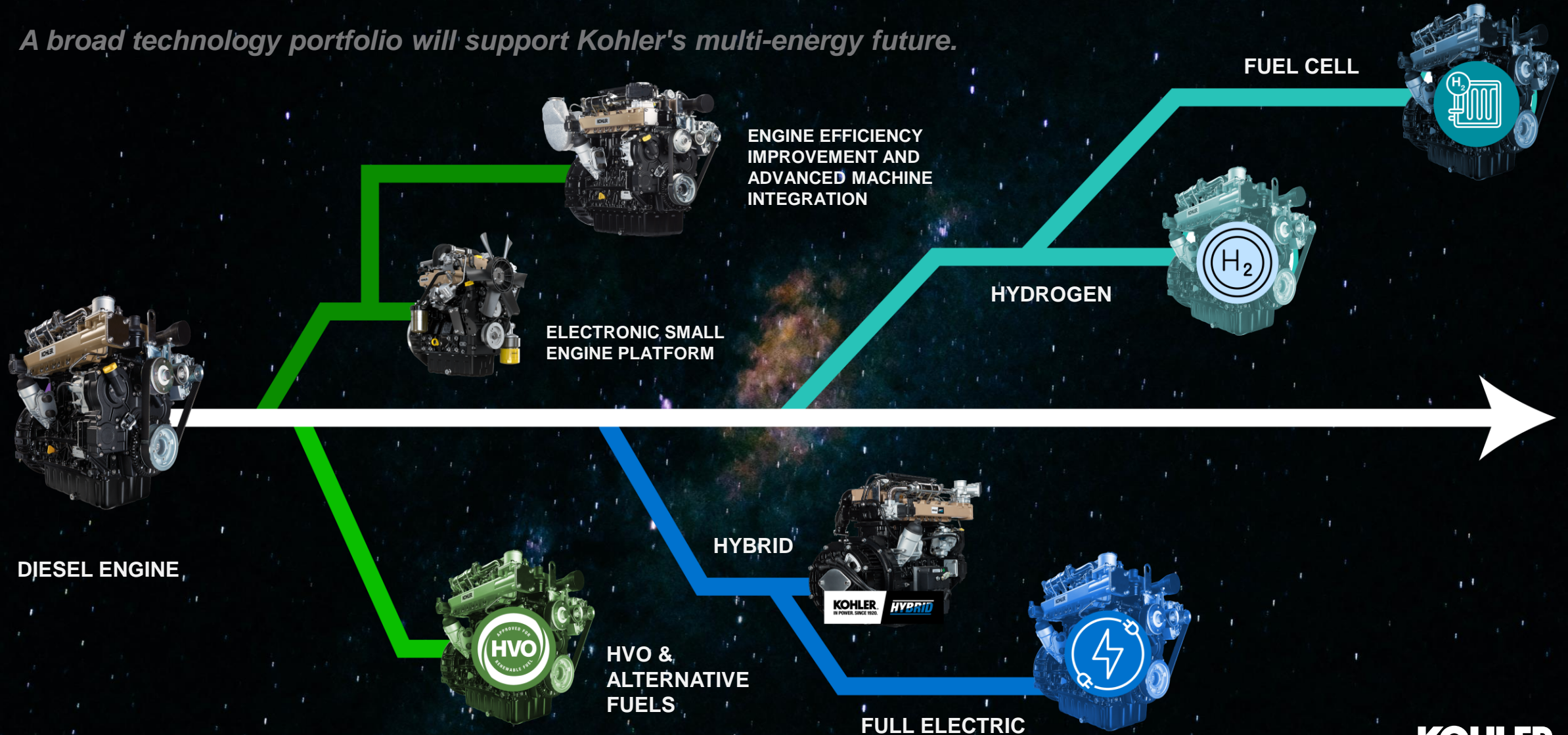
Hybrids

Electronic controls on small engines



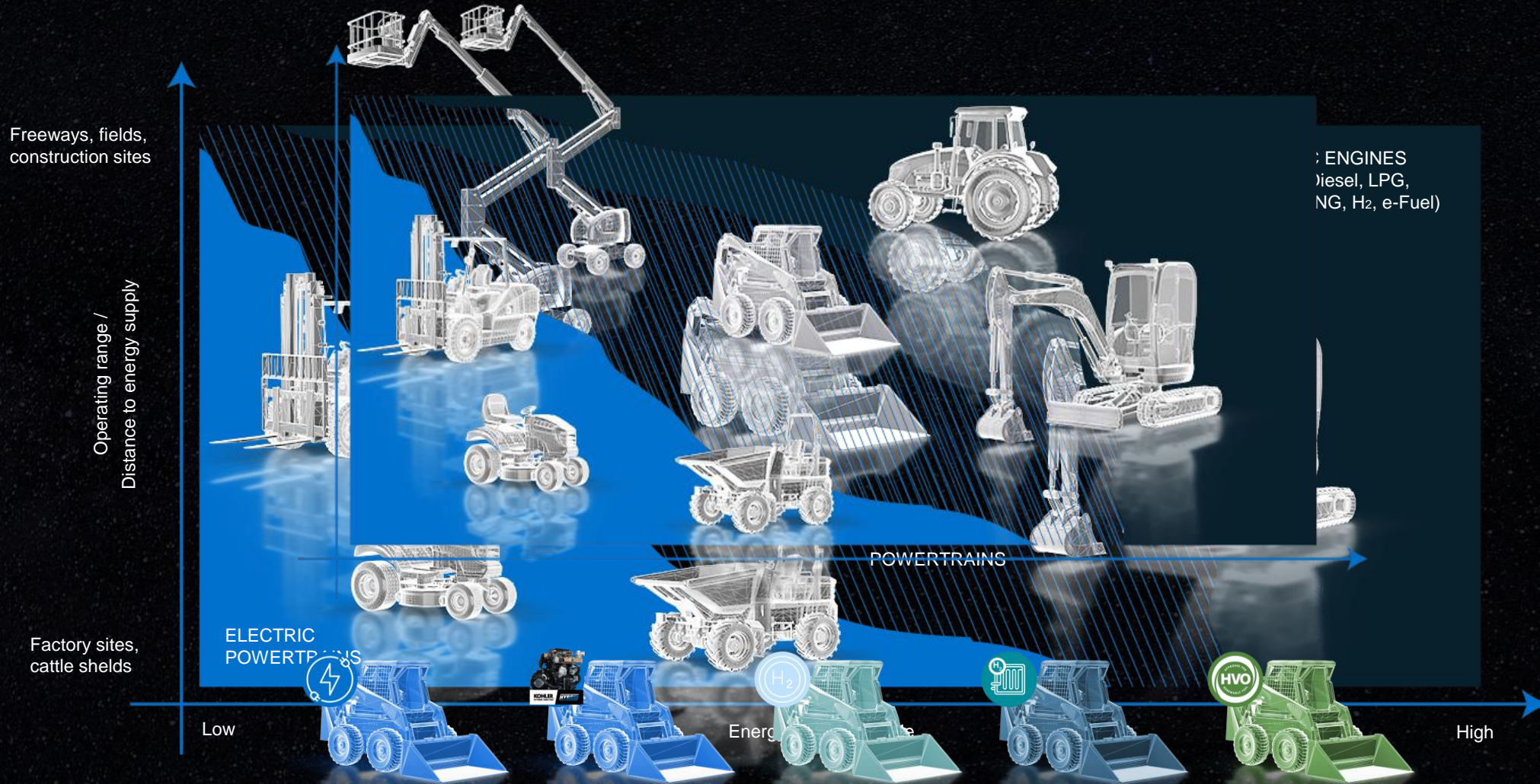
Technology Mix Approach

A broad technology portfolio will support Kohler's multi-energy future.



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One fits All, or not?



Bridging Technology

New opportunities and multiple solutions for the engine.

A NEW FUEL

MECHANICAL OR HYDRAULIC
DRIVETRAIN

H₂ ICE



**DIESEL ICE
E-FUEL / HVO**



MACHINE TODAY



MECHANICAL
OR HYDRAULIC
DRIVETRAIN

**DIESEL
ENGINE**



NEW MACHINE FAMILY

ELECTRIC DRIVETRAIN

**DIESEL ENGINE
+
HYBRID BATTERY**



**H₂ FUEL CELL
+
HYBRID BATTERY**



**DIESEL ENGINE
+
PLUG-IN HYBRID
BATTERY**



**H₂ FUEL CELL
+
HYBRID BATTERY**

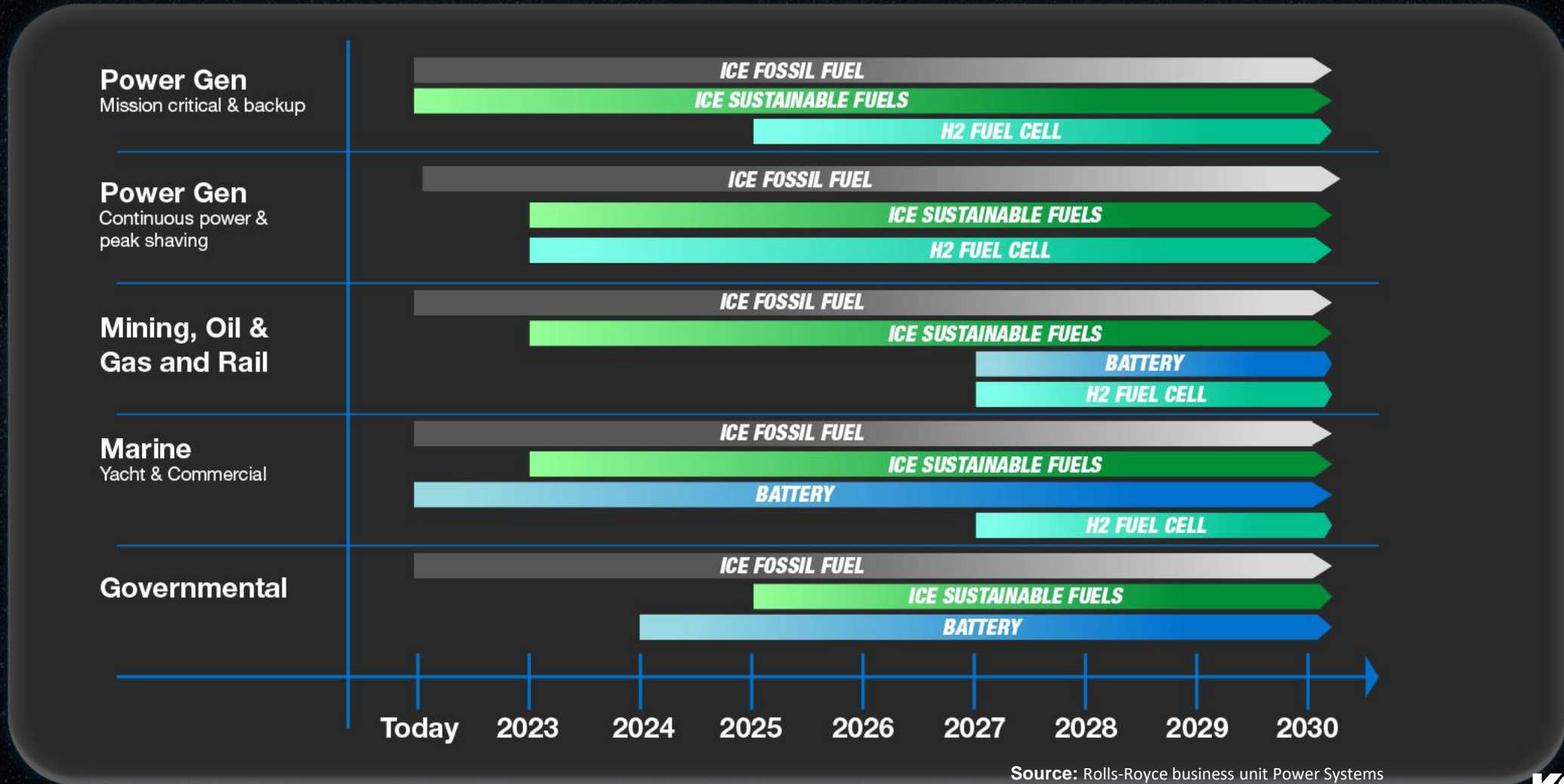


H₂ ICE



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The Engine is not Dead



Source: Rolls-Royce business unit Power Systems

Expected availability and feasibility of technologies.

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An Engine Big Bang

New galaxies to explore.



Just as the big bang gave birth to a new galaxy, we are now at a time when new technologies and new opportunities will emerge. The big bang is not a hard-and-fast beginning, but a moment of **profound transformation**, very different from what most of us could have imagined.



IC engines will play a key role in industrial applications for a long time to come, especially in those applications where there is a **high demand for mechanical power and energy**.



We are rising to the challenge. We continue to invest in **power solutions**, even in the smallest kW ranges, offering the best experience – the Kohler experience – to our customers, regardless of their specific needs.

What do you see
emerging at the far end
of the black hole?

