

# THE TOP 5 TECHNOLOGIES TO WATCH IN 2024



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**Inflation and finance**



**AI**



**Geopolitical tension**



# What is the top technology to watch in 2024?

# WHITE HYDROGEN: HIGH RISK, HIGH REWARD

White hydrogen is naturally occurring hydrogen that can be extracted from geological formations.

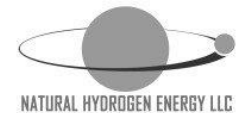
- Assuming a proven reserve is found, white hydrogen can be the cheapest source of low-carbon hydrogen.
- Startups dominate the space; Koloma is the clear leader with over USD 400 million raised.
- The main challenge lies in locating proven reserves and developing new seismic imaging approaches

## LUX TAKE

**The hype around white hydrogen is not justified.** The real breakthrough will come when a *proven* reserve is located. Monitor, but do not rely on white hydrogen.

### Key Event:

**Koloma raises USD 400 million**



# V2G DEVELOPMENTS KICK INTO HIGH GEAR

Policy support in combination with hardware, software, and business model innovations will bring V2G to market.

- Consortia have participated in 140-plus V2G projects worldwide.
- More partnerships will solidify to take advantage of the opportunity to manage EVs.
- Innovation interest remains at an all-time high, with investors pouring in over USD 200 million annually.

## LUX TAKE

**Players are still figuring out where they fit in.** Roles are not yet defined, and not one type of player is going to deliver an entire V2G solution on its own in the next couple of years.

## Key Event: Altna is born



**HONDA**



# BIOMANUFACTURING GETS A BOOST FROM REGIONAL GOVERNMENTS

Biomanufacturing uses microorganisms to make products via fermentation. Biomanufacturing developers have secured USD 235 million in 2024.

- Biomanufacturing is capital heavy to develop and scale.
- Genomatica, Solugen, and Global Bioenergies are looking to replace conventional products in textiles, cosmetics, and personal care.
- High costs and scalability remain key challenges.

## LUX TAKE

Beyond funding, consumer pressure, and brand commitments, **regional bioeconomy strategies will impact the growth of biomanufacturing.**

**Key Event:**  
**ZymoChem lands USD 21 million**



# CRISPR GE APPLICATIONS REACH BEYOND PRECISION MEDICINE

GE platforms bind specifically to DNA or other target molecules.

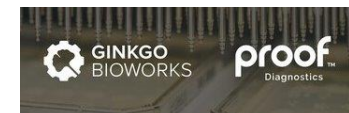
- Innovation in food transitions from novelty to product.
- From Sherlock Biosciences to Proof Diagnostics, CRISPR achieves agile, rapid, and cost-effective diagnostic capabilities.
- Medically beneficial foods are gaining traction, especially as consumers adopt health tracking devices.

## LUX TAKE

Products based on gene editing are increasingly ready for consumers. **The real question is, how will consumers react to more visibly gene-edited products?**

### Key Events:

**Trials advance + consumer firsts**



# AFTER LLMS, FOUNDATION MODELS FOR ADVANCED ROBOTICS ARE IN FOCUS

Humanoids mimic human form and behavior to perform various tasks — often equipped with advanced AI.

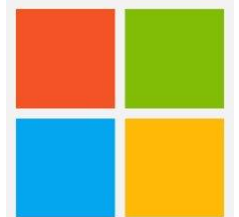
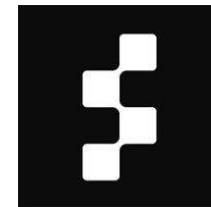
- Startups are developing foundation models for robotics, with humanoids as the primary focus.
- Key applications are warehouse logistics, manufacturing, and operations in hazardous environments.
- Technological hurdles and high costs slow deployment.

## LUX TAKE

**There is no clear definition of a foundation model for robotics.** Moreover, the data needed to train AI models remain scarce — making generalization across diverse tasks and environments difficult.

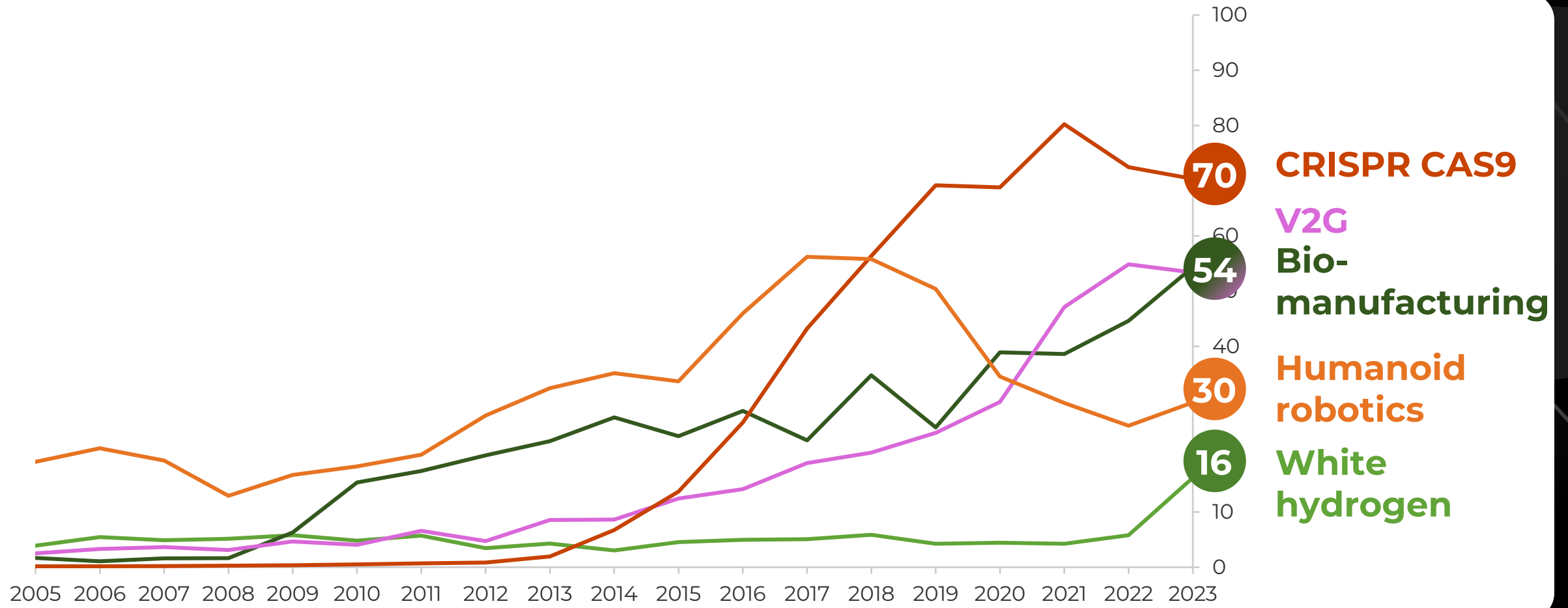
### Key Event:

**Figure AI raises USD 675 million**





# MEASURING INNOVATION WITH THE TECH SIGNAL



# KEY TAKEAWAYS

1

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## **What's old is new again.**

Established approaches are having a renaissance amid growing consumer acceptance, new policy, and the advent of supporting technologies.

2

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## **Innovators are getting smarter on risk.**

Companies are finding ways to manage their risk profiles — from careful targeting of applications to leveraging government support.

3

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## **The next six months are critical to these emerging approaches.**

The health of the economy and continued political support are both critical to getting these fledgling approaches off the ground.



# THANK YOU

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JULY 18

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