How AI in the Sky Is Staving Off Wildfires on the Ground

Kamala Schelling

Of all the things artificial intelligence can do, pruning trees isn't currently high on the list. Yet for one California-based startup, AI may be the key to keeping branches and leaves away from power lines – and avoiding the wildfires that interactions between the two can spark.

AiDASH was born with "a vision to secure critical infrastructure through human-AI" interface, CEO Abhishek Vinod Singh told BloombergNEF shortly after being named a recipient of a 2025 BNEF Pioneers award. The idea is to use high-definition satellite images to observe what's happening on the ground, and then let utilities know where to send their maintenance teams for the greatest possible impact.

The technology has a wide potential range of applications, including analyzing biodiversity and tracking mine tailings. The core use today, however, is helping utilities mitigate storm interruptions and prevent wildfires through vegetation management.

That's critical in a world where climate change is dramatically increasing the threat of fires.

"Wildfires are not only becoming more frequent, they're becoming more expensive, more extensive and more seasonally unpredictable as precipitation patterns continue to shift from the norm," says BloombergNEF weather analyst Jess Hicks. "As heat waves intensify and soil dries earlier in the season, fire season is no longer just a summer story – it's becoming a year-round threat."

Northwest Europe has seen its driest and sunniest start to a year on record, turning the continent into a tinderbox. Acreage burned across the UK, France, and Germany had surged 140% by late April compared with the same period last year.

The conflagrations that swept through Los Angeles in January caused well over $100 billion in damages, the first time a wildfire price tag in the US hit 12 figures.

"Utilities are being hit particularly hard by the increased risk of wildfire – whether a fire breaks out or not," says Mark Daly, BNEF's head of technology and innovation. "AiDASH is successfully reducing that risk. In the two years since National Grid, an AiDASH client and investor through its corporate venture capital arm, became a customer, the grid operator has seen tree-related customer interruptions fall by more than a third."

Abhishek Vinod Singh, CEO and co-founder of AiDASH.

As one of four Pioneers recognized for their efforts in climate adaptation, Singh spoke with BloombergNEF about AiDASH's "eye in the sky."

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What is AiDASH, and how can it be applied to climate adaptation efforts?

AiDASH started with the vision to secure critical infrastructure.

If you look into critical infrastructure industries like electric utilities, gas utilities, there are millions of miles of distributed assets. The US alone has 7 million miles of power lines. These lines need to be surveyed, inspected every year for routine maintenance, for wildfire mitigation, for storm resilience, etc. This is humanly impossible to do.

What we do is we use satellites and AI, it's kind of an AI eye in the sky, which monitors these assets at scale and helps [utilities] reduce cost, increase reliability and reduce liability.

When you go to the AiDASH website, a little chatbot pops up to ask if you're interested in vegetation management, biodiversity, storm and wildfire mitigation, asset inspection or pipeline encroachment. Have you created one product that covers all of those categories, or is it five different products you've created?

This is where the complexity of our service lies. It's also the reason why we have been successful where many others have not.

First of all, we have a single platform which powers all the products. The platform has the ability to process volumes of satellite data and make sense of that.

[The other unifying factor is] vegetation AI, which is about understanding vegetation and its impact, risk, growth, height, health, etc. Combining those, we started our first product: Intelligent Vegetation Management System, or IVMS.

This is different [from other products on offer] because we don't just deliver insight to our customers. We have a very deep domain vertical application, which goes into the hands of vegetation managers, and the application talks their language. In the application there is no visible AI; the AI is embedded inside.

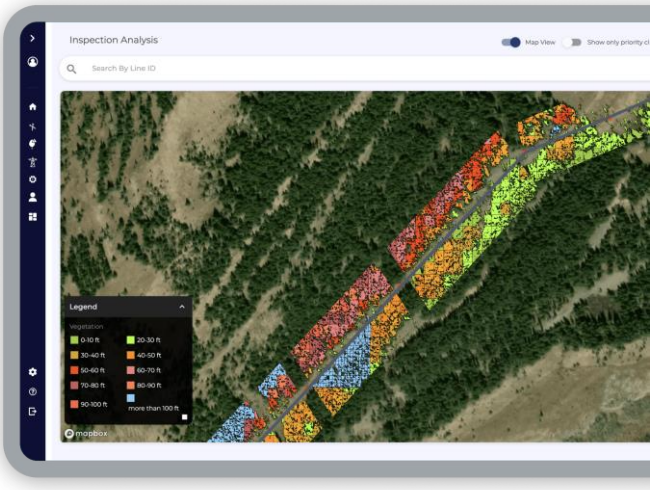
CRIS (Climate Risk Intelligence System), our storm mitigation application, also combines vegetation AI and satellite analytics. But it's a very custom, deep domain application for managers who are responsible for wildfires and storm mitigation programs.

How did AiDASH start?

The trigger point was a wildfire, which we saw in 2017 or 2018 in California. [This fire] triggered a thought of: let's look at what the problem is. And to my surprise, the majority of these wildfires are caused by vegetation interactions with the power line – all the dry fuel on the ground, in and around the power line.

And to my surprise I came to know that the US spends almost $10 billion every year in managing this vegetation – the US alone.

[That struck me as] a business opportunity with potential social gain. So we said, okay, this vegetation is the biggest problem, let's focus on vegetation management because if we do better vegetation management, less wildfire will happen.



AiDASH analysis of vegetation around a transmission line. Image courtesy of AiDASH.

As our vegetation technology grew, we realized that it's the trees which cause 30-50% of outages during blue-sky days, but they cause over 80% of outages during

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storm days. So [taking] the same vegetation data, we can now predict outages during storms.

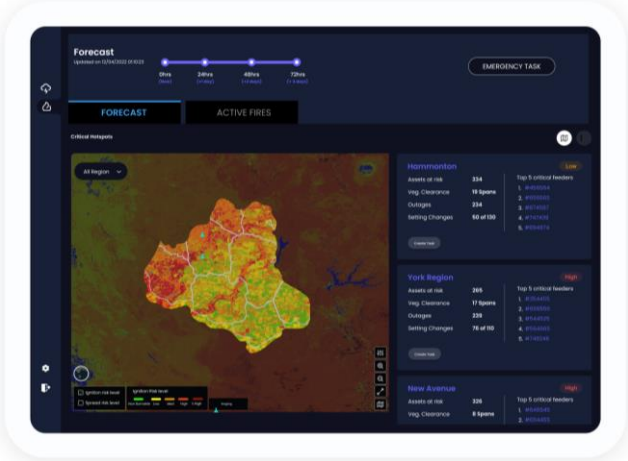
But I do want people to understand the difference between storms and wildfire. We cannot stop a storm from coming; we can only be better prepared. That's why we talk of storm resilience.

[By contrast] we can take actions to stop wildfires from happening. That's in our control. So AiDASH is about mitigation and prevention

How granular is the data you use?

The image resolution which we use is 30 centimeters, which is one foot. So essentially we [can say] "this tree is a problem, and it'll touch this wire on this pole." And not only that, we can also say, "This is a tree which is dead or dying or decaying, so it is likely to fall or not likely to fall. These branches are likely to break in a wind; these branches are not likely to break in a wind."

What we primarily are doing is replacing manual inspection with remote inspection. If I cannot do 100% of [the] inspection, it is useless – even 90% is useless – because they have to send a crew. So only if I can completely eliminate sending a crew is my technology useful enough for a particular industrial use case.



An AiDASH wildfire forecast. Image courtesy of AiDASH.

Do you simply provide these high-resolution pictures, or are you offering consultation as well?

This is where we differentiate from almost all of our competition. We do not give imagery. What we offer is a web and mobile application.

Utilities care about: I have this much budget, these are my business constraints, I have this many people located here, this is the capacity of my work. What best can I do?

[In the AiDASH system, customers] log in, enter their budget and any other constraints (manpower, specific regulations, etc.) and then the software provides an optimized vegetation management work plan, specific to their business need.

It's clear to me why this is useful to a utility. But you also say on your website that you are serving water and wastewater, energy, mining and transport. When these kinds of companies are coming to you, what are the outcomes they're looking for?

For non-utility companies, right now we are primarily selling our biodiversity net gain solution. Because [from the] biodiversity and carbon point of view, any company which is a land landowner is a potential customer, right?

Our plan for the platform – the same platform that is serving utilities today – [is that it] will serve gas utilities, then mining companies. We do have some gas utilities as customers, but then our next challenge is mining, which will most likely [roll out] in 2026.

How does the biodiversity net gain solution work?

Biodiversity is a complex topic. Measuring how much biodiversity a parcel of land has is not very scientific. I mean, you can count the number of animals or species, and diversity of species of vegetation. But there's no scientific structure. If I can't count or measure anything, I can't work to fix it.

So the UK started an nice initiative of standardizing the measurement of biodiversity on any land parcel. Because of that standardization, we are now able to assess how much biodiversity a land parcel has.

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Vegetation AI was able to measure that remotely. In the absence of AiDASH they would have ecologists on ground, and that research takes time and is expensive.

So that was an entry point for us.

Are you working with any non-utility companies that are impacted by wildfires, like insurance companies or the US Bureau of Land Management?

As of now, we are not working with such companies. For wildfire analysis, for example, we do daily satellite scans, so there's a data cost element associated with it. As a result, we are not now able to sell to these industries at the right price point.

But as we acquire more utility customers, as we acquire more and more data, at some point in time we'll be able to serve those industries at the right price point, and that's what we are waiting for.

In addition, we are also trying to launch some *pro bono* efforts and make [the app] available for everyone in the industrial community to use. This will be lower granularity but still give risk insights. Once we reach a [certain] level of confidence, we will publish it for the public.

(The list of AiDASH services on p. 3 was updated on July 9, 2025.)

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