Pau, France

HEATWAVE-BREAKING THUNDERSTORMS: UNDERSTANDING ONE OF THE SEASON'S MOST ELECTRICALLY ACTIVE OUTBREAKS

July 1, 2026

During the last weekend, thunderstorms generated **significant societal and operational impacts** across Western Europe, particularly in northern France, the Benelux and western Germany.
Reported consequences included:

- Tens of thousands of customers affected by power outages
- Rail traffic disruptions caused by fallen trees and impacts on transport infrastructure
- Flight delays and operational constraints at several airports
- Hundreds of emergency interventions for flooding, fallen trees and storm-related damage
- Temporary suspension of major sporting events
- Evacuations and cancellations of outdoor festivals and public gatherings
- Damage to buildings, vehicles and exposed assets, as well as work stoppages affecting construction sites, industrial facilities, utility networks and other critical services.

The event illustrates how thunderstorms can rapidly affect critical infrastructure, mobility, public safety and economic activities simultaneously.

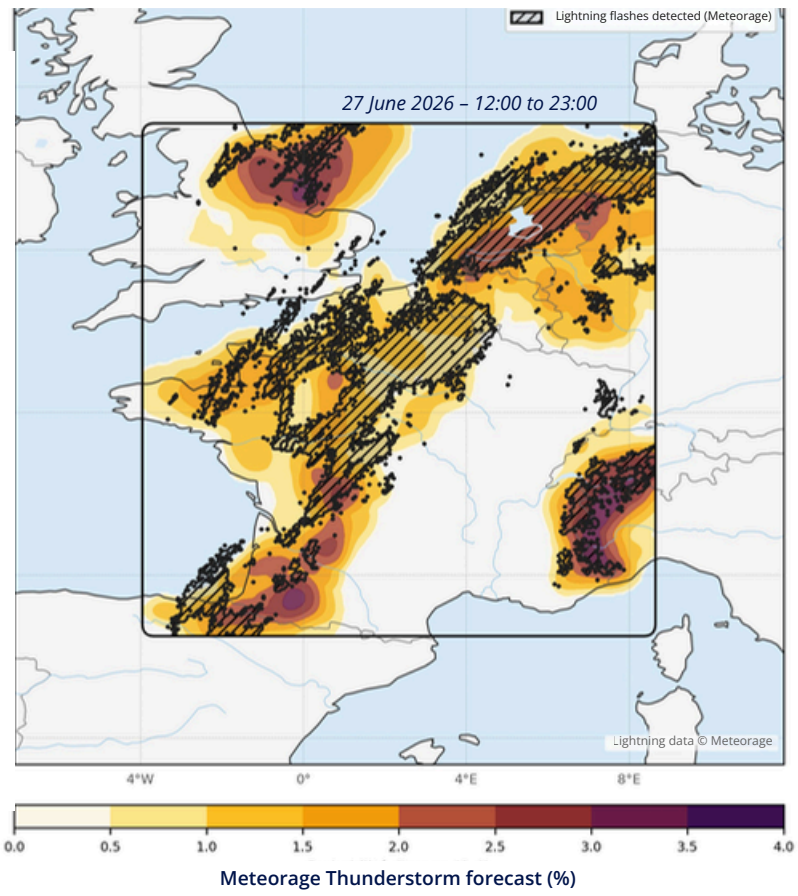
What atmospheric conditions led to such an exceptional level of electrical activity?

147,950 lightning flashes
detected in the observed area

21,137 cloud-to-ground flashes

For several days, a cut-off low, an isolated pool of cold air aloft, had been lingering off the coast of Portugal, acting like a heat pump by drawing scorching air northward across Western Europe. This system was resposible for sustaining the heatwave.

On 27 June, the cut-off low finally moved northward, merging with the upper-level trough and associated weather systems before progressing eastward.
Driven by a dynamic southwesterly flow, the hot air that had accumulated near the surface, made highly unstable by cooler air spreading aloft, was lifted, triggering successive waves of thunderstorms from southwestern France and mountainous regions through northern France, the Benelux and western Germany.



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40 years of expertise in lightning detection

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From midday through the evening, thunderstorm activity swept across these regions. The most organized thunderstorm cells locally produced hail, heavy rainfall and strong wind gusts.

In total, nearly 150,000 lightning flashes were detected across the area between midday and the evening of 27 June, including more than 21,000 cloud-to-ground flashes (CG). This level of electrical activity reflected the immense amount of energy that had built up in the atmosphere during the heatwave. The event did not end there: on 28 June, equally significant thunderstorm activity once again crossed the country from southwest to northeast.

THE EXPERT'S VIEW

Thunderstorms that mark the end of a heatwave are often among the most electrically active of the season, and for good reason. The more intensely warm air has accumulated over several days and then abruptly encounters a cooler air mass, the greater the contrast between the two. The stronger this contrast, the more intense the resulting thunderstorms tend to be.

This is exactly what happened in this case, with a pronounced atmospheric transition. However, a heatwave does not always end with thunderstorms. Without a strong temperature contrast and sufficient lifting of the warm air, it can also come to an end much more gradually.

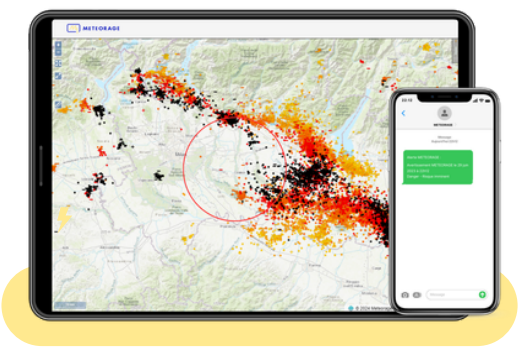
— Joris Royet, Weather Project Manager, Meteorage

Over the entire weekend, Meteorage's lightning detection network recorded nearly 1.9 million flashes (IC & CG) across Western Europe and triggered 3,618 alerts for customers.

Behind those alerts were thousands of operational decisions:

- protecting people in exposed environments,
- securing vulnerable assets and critical infrastructure,
- suspending activities when necessary and resuming them as quickly and safely as possible,
- prioritising inspections and maintenance operations in areas where lightning activity had been detected.

This event highlights is the importance of **anticipation** and **prevention**. Many thunderstorms responsible for incidents can be anticipated through accurate lightning detection, often more than 30 minutes before the first impacts occur within a site or operational area. This is why many organisations and federations across Europe have integrated thunderstorm monitoring and alerting systems into their protocols.



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