Late last month, a UK court blocked a proposed new runway at London's Heathrow Airport, ruling that the project conflicted with the national government's commitment under the 2015 Paris Agreement. The court held that project planners improperly failed to assess the proposal's consistency with the UK government's ratified plan to help meet the Paris target of limiting temperature increases to 1.5 degrees Celsius. Since the proposal would have added hundreds of thousands of new GHG-intensive flights to the airport, the court found it incompatible with the government's policy of achieving zero carbon emissions by 2050.

The decision may be appealed and reversed, and the legal context in the UK is significantly different from that in the US—to start, the UK ratified the Paris Agreement via parliamentary process, whereas the US was only able to ratify via President Obama's executive action—and the UK has not begun to withdraw from the agreement, as the US has. And even if the Senate had ratified the agreement as a treaty, it's not clear that federal courts would admit this sort of project-specific claim without explicit enabling legislation.

But while the Heathrow runway may not offer a strong litigation precedent for climate advocates in the US, it does draw attention to how airports could be enlisted to help advance the emission reduction fight.

Aircraft are responsible for a relatively small portion of global emissions today—approximately three percent—but this number will grow in the coming years as more people gain access to air travel, other systems increasingly convert to electrification and renewable energy sources, and non-emitting fuels for aircraft remain a significant technological hurdle.

State authority to directly regulate these emissions is limited; the International Civil Aviation Organization (ICAO) has potentially exclusive regulatory authority over international flights, and the Clean Air Act and Airline Deregulation Act confer exclusive authority on EPA and FAA to regulate aircraft emissions and airline rates, respectively. (EPA's failure to adopt GHG standards for aircraft has been subject to litigation, but the agency has not developed regulations to date.) However, local governments and airports may have the authority to implement their own aircraft emission reduction programs.

Preliminary research my colleagues and I performed suggests that two avenues may be available for these entities to move the needle on aircraft emissions:

- Individual airports could institute use or impact fees based on the emission intensity of flights (with revenues directed to on-site capital costs related to climate resilience such as sea walls), based on their authority to charge reasonable facility use (or

"landing") fees to fund airport operations and maintenance.
- Cities could institute neutrally applicable emission-based fees for large users of city infrastructure, including airlines, based on their constitutional home rule and police power authority.

While these fees could not directly regulate the emissions of individual aircraft or routes, they would allow more GHG-efficient airlines and routes to benefit financially from their efficiency and drive poor performers to match them. (Recent reports have documented a wide range of fuel efficiency across operators.) This in turn could create financial incentives for airlines to develop alternative, low-emitting fuels and more efficient routes and practices. If implemented nationally or internationally, these fees could help limit aviation emissions across the globe while protecting key infrastructure investments from climate risks.

A number of legal and policy design questions stand out, such as the optimal structure of the fee (including how to account for improved emissions intensity or use of sustainable fuels), potential preemption concerns (including by ICAO, EPA, and FAA), and equity questions (such as how to avoid imposing disproportionate costs on lower-income passengers). But the core premise appears to be grounded in existing law and policy, with the potential to overcome barriers through smart policy design.

Further law and policy research are needed to address these questions and craft a sound and effective program. With seven of the 50 busiest airports in the country, including some that are highly vulnerable to sea-level rise and other climate risks, California could offer an ideal location for a pilot program. Local precedent, from city-level emission fees and reduction programs to airport use fee programs and city rules that have driven nationwide transformations in corporate policy, provide helpful guideposts. And multiple airports or cities within a region (Oakland, San Jose, and San Francisco for example) could institute joint measures to address the risk of leakage.

While California rightly boasts some of the most comprehensive climate programs in the world, our efforts to date have mostly left out aircraft emissions, due in part to the legal preemption issues noted above. As we make (slow) progress in tackling our terrestrial greenhouse gas emissions and seek a carbon-neutral state by 2045, local leaders would do well to consider these innovative ways to address the growing threat from above.