

## The Themis Mechanism: A Proposal for Equitable Global Emission Reduction

Themis is a proposal for an international mechanism to reduce global greenhouse gas emissions in a fair and effective way. It addresses mitigation deficiencies in the Paris Agreement.

Themis is built on four foundations:

- Our atmosphere is a shared resource, a *commons*. Fossil fuel users reap the full benefit from fuel consumption, while the CO<sub>2</sub> cost is spread globally. This dilution effect makes continued use rational for individuals but collectively disastrous. To prevent this, we must cooperate to guarantee positive climate results.
- The root cause of climate change is the failure to account for the true cost of emissions. By treating the atmosphere as a free resource, we encourage overexploitation. Themis corrects this *unpriced externality* by pricing greenhouse gas emissions.
- Urgency is paramount. Societal change takes time, but the incentivising mechanisms must work on a faster timescale: this year's emissions, not some time in the future.
- Effective cooperation requires a fair guiding principle. Themis upholds *equity*: that our atmospheric resources should be shared equally between all humans.

Themis is built entirely on immediate annual commitments. Adherence is verifiable by partners, enabling the building of mutual trust. Themis is governed by a single number,  $p$ , the price of emitting one ton of carbon dioxide equivalent, or CO<sub>2</sub>e. The annual cycle has four steps:

1. Each year, all nations are invited to join at a predefined emissions price,  $p$ .
2. At year-end, each member reports emissions and pays  $p$  per ton of CO<sub>2</sub>e.
3. Proceeds are redistributed immediately among members, in proportion to population.
4. Members vote openly on next year's price; the median vote determines  $p$ .

Prior to launch, all nations are invited to vote for the initial price,  $p$ .

A consequence of the mechanism is that only *per capita* emissions are relevant, reflecting equitability. Nations with above average member per capita emissions will be net contributors; all others net beneficiaries. All members (not just large emitters) immediately experience economic pressures to reduce emissions. The Themis Mechanism is deliberately as simple as possible. It is designed for efficiency, eliminating complex negotiations that would delay urgent action. Themis can coexist with other initiatives, including the Paris Agreement.

Why would nations join? Below average emitters have an immediate economic incentive to join. All countries benefit from diminished climate change enabled by the mechanism. Themis does not require universal participation to be effective; widespread adoption is sufficient. Members may in time seek to sanction free-riding non-members, but this is not part of Themis.

The price,  $p$ , is likely to start modest and rise with time. Even when the price is too low to massively reduce emissions, the mere existence of the mechanism and annual membership decisions and the open ballot price vote are a welcome recurring opportunity for nations to show their hand.

Implementation may face some challenges: enforcement of emissions reporting standards may be difficult. Themis does not resolve differing historical emissions. Some nations may choose not to participate for economic or ideological reasons. Nevertheless, for the majority of nations, Themis will be better than its absence.

While Themis is not a complete solution, it is a crucial step toward fair and effective global emissions reduction. Supporting Themis means taking immediate, verifiable action toward a fairer and more effective global climate strategy.