THE THRESHOLD INITIATIVE

THE ALTHING
SIMULATION

What It Explored, and What That Means

A Report for Institutional Partners

The Threshold Initiative | July 2026

CONFIDENTIAL | TIER 2 INSTITUTIONAL

THE THRESHOLD INITIATIVE

THE ALTHING
SIMULATION

What It Explored, and What That Means

A Report for Institutional Partners

The Threshold Initiative | July 2026

CONFIDENTIAL | TIER 2 INSTITUTIONAL

PREFATORY NOTE

What This Document Is

This document describes what a closed expert simulation explored when it ran a sophisticated institutional coalition against realistic industrial resistance for eleven years of simulated time. It is not a prediction. It does not tell you what will happen. It presents what happened when the best available instruments were given the best available conditions and run to their logical conclusions.

The reader this document is written for does not need to be persuaded that plastic pollution is serious, or to be briefed on the evidence. They need to understand what the simulation explored, why that is significant, and what it implies for the scale and nature of the response required.

I

What Was Simulated

Twenty-five actors. Eleven years. The actors included incumbent industrial interests, state regulatory and diplomatic players, plaintiff litigant coalitions, multilateral bodies, scientific and media institutions, civic and legal forces, and systemic actors representing markets, emerging technologies, and biospheric pressure.

The simulation ran across ten intervals, each containing: a world-state account of what happened between intervals (regulatory developments, scientific publications, court decisions, market events, and injected random events); a phase in which each actor made its primary move; and a phase in which each actor responded to what others had done.

The question the simulation was designed to answer: can a sophisticated, well-resourced institutional coalition bend the global plastic production curve toward a defined target, starting from an established baseline, using the full toolkit of available instruments -- litigation, regulation, diplomacy, markets, public evidence, media, and civic mobilisation?

THE BASELINE

Global plastic production: approximately 460 million tonnes in 2019, rising on a trajectory consistent with business as usual to 1,231 million tonnes by 2060. [C, OECD 2022] The balance target: 650 million tonnes by 2046. The simulation began in 2026.

II

The Strands: What the Simulation Was and Was Not

Think of the simulation's twenty-five actors as loose strands held in a fist. The fist is 2026, the year the simulation began. From that year, each strand is free to move in any direction: forward, backward, sideways, looping, crossing other strands, changing character on contact.

This is unlike the tree analogy sometimes used for scenario modelling. Tree branches grow outward and upward, constrained by gravity and branching logic. Strands are not. They can reverse. A strand can go slack and pull taut again. Two strands can cross and influence each other's trajectory in ways that were not designed.

This is also the honest description of what the simulation was. It was not a formal model with pre-committed mathematical relationships between inputs and outputs. It was a structured strategic imagination exercise: one informed designer, playing all twenty-five actors simultaneously, under a set of rules designed to constrain but not eliminate discretion. Its observations carry the authority that description implies -- which is more than nothing and less than proof.

One conflict of interest requires disclosure. The designer of the simulation is also the architect of the programme whose strategy the simulation was stress-testing. The simulation was therefore not an

independent test. It was the designer's best-case stress test of their own strategy, conducted under conditions they controlled, reviewed at intervals by independent analytical models. This does not invalidate the result. It locates it correctly.

III

What the Coalition Achieved

The simulation ran from Summer 2026 to Autumn 2036. Over eleven years, the institutional coalition achieved the following.

On the litigation track: three jurisdictions (California, France, and the Netherlands) held active proceedings. The Dutch Court of Appeal became the first court in the world to find a polymer company liable for chemical harm from named additives, producing an established damages quantum in the low billions of euros, with a further eight to fourteen billion euros under judicial consideration. The California case advanced through opening briefs and was scheduled for causation hearing in early 2037.

On the regulatory track: the European Chemicals Agency recommended restriction proceedings for two named additives -- the first production-facing regulatory instrument in the simulation. An international framework agreement achieved ratification support from a significant but not yet binding state coalition.

On the market track: one of the simulation's four industrial incumbents accepted an acquisition term sheet from a competing sector, signalling industrial consensus fracturing. A second incumbent faced regulatory inquiry over evidence of coordinated market manipulation. The reinsurance market withdrew from director-and-officer liability coverage in the polymer sector.

On the science track: two peer-reviewed studies confirming the causal mechanism central to the litigation theory reached publication in leading scientific journals. A third study connecting corporate disinformation infrastructure to market manipulation triggered separate inquiries in two jurisdictions.

On the civic and media track: estimated 800 million content impressions across the simulation period (order of magnitude only), sustained civic mobilisation, and the first municipal-level enforcement actions.

IV

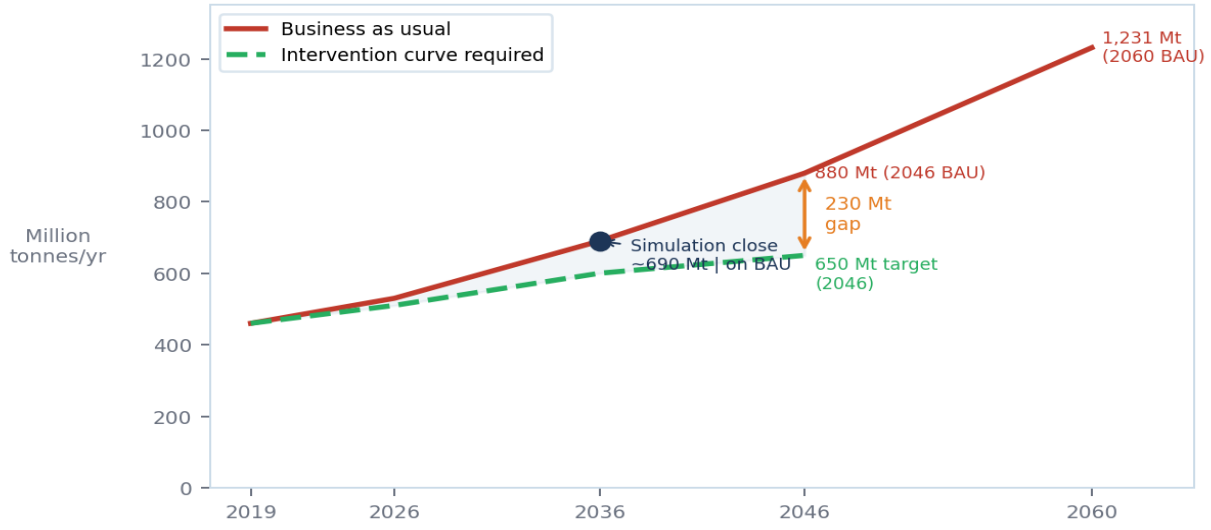
What the Simulation Showed

The production curve, across all eleven years and all of these developments, moved as follows.

The institutions moved. The production curve did not.

By the simulation's close in 2036, global plastic production was tracking approximately on the business-as-usual trajectory from the programme's own baseline documents: approximately 690 million tonnes per year, heading toward 880 million tonnes by 2046 and 1,231 million tonnes by 2060. The balance target of 650 million tonnes by 2046 requires production to fall below where it already is and then hold. It is heading in the opposite direction.

To be precise about what this means: across eleven years of simulated time, in which the institutional coalition performed better than any realistic real-world coalition could reasonably expect to perform, global plastic production continued to rise. The coalition won on almost every intermediate measure -- litigation outcomes, regulatory milestones, market defections, scientific publication, civic mobilisation. None of it bent the curve.



BAU and balance target from OECD Global Plastics Outlook 2022 and the programme's public documents. Simulation result at 2036 reflects production approximately tracking the BAU trajectory after eleven years of best-case institutional action. Intervention curve is illustrative of what the balance target requires.

V

The Production Curve Question

The programme's public documents contain a chart. The upper line is business as usual: production rising from 460 million tonnes in 2019 to 1,231 million tonnes by 2060. The lower line is what structural action makes reachable. The shaded space between them is, in the document's own words, 'a choice that is still open, and it narrows a little with every year it is not made.'

The simulation ran the best available version of that structural action, in the best available sequence, under optimal conditions for the institutional coalition, for eleven years. The lower line did not materialise. Production tracked the upper line.

This raises a direct question about the chart: is the lower line a fair representation of what the available instruments can achieve, or is it wildly optimistic?

The honest answer, based on what the simulation showed, is that the chart may be wildly optimistic about the instruments it implicitly relies on. The bend in the lower line is not supported by the simulation's results. The instruments were deployed. The coalition performed well. The regulatory, legal, and market architectures developed with a coherence that real institutional action rarely achieves. And the production curve continued to rise.

One qualifier requires acknowledgement. The simulation modelled production at the global level, where progress in some jurisdictions was partially offset by capacity expansion in others: a single jurisdiction added 4.2 million tonnes of new annual capacity in the simulation's final interval alone. This is realistic. It is also the point. Global production economics are not primarily responsive to the instruments the institutional coalition has available.

VI

The Instruments and the Fight

The simulation confirmed several things about the available instruments that are worth stating plainly.

Litigation is the most powerful available instrument for creating liability precedent and forcing disclosure. The Dutch liability finding created a first-in-the-world precedent. The litigation track also generated the simulation's most consequential single development: a corporate board fracturing five votes to five on how to respond to the combination of the Dutch finding, the California schedule, and the regulatory inquiry. Board fracture is the precondition for settlement. Settlement is the mechanism by which liability converts, eventually, to production change.

Regulation moves slowly but durably. The restriction recommendation by the European chemicals authority is the only instrument directly addressed to what can be manufactured, not only to how manufacturers must pay for what they have made. The regulatory timeline runs to 2035-2040 in the most optimistic scenario. That is not fast enough to reach the 2046 balance target on its own.

The market track's most consequential development was not the corporate defection or the cross-sector acquisition. It was the reinsurer withdrawal from director-and-officer liability coverage in the polymer sector. When the reinsurance market withdraws, the cost of capital for new production capacity rises. This is the mechanism by which institutional action connects to production economics. The simulation modelled this connection in its ninth year of eleven. An earlier and more aggressive market strategy might have produced a different trajectory.

The disinformation track deserves direct attention because it appeared in the simulation and will appear in reality. The simulation's primary industrial incumbent deployed a multi-arm disinformation infrastructure -- coordinated fabrications, academic front organisations, psychographic targeting -- that caused the temporary recusal of a judge, threatened expert witness standing, and introduced litigation delays. The institutional coalition survived this. Not every coalition will.

VII

The Harder Question

The simulation's result is not that the available instruments are useless. They are not. They build the legal and regulatory infrastructure on which stronger future action depends. They shift the liability landscape in ways that change corporate decision-making. They create the precedents that make the next case easier and the next regulation more defensible.

The result is that these instruments, deployed at their best, do not produce curve movement at the required scale and speed. The balance target requires holding production at or below 650 million tonnes by 2046. Business as usual projects 880 million tonnes by 2046. The simulation's institutional coalition, running a best-case scenario for eleven years, produced a trajectory heading toward 880, not away from it.

This implies something the programme's current architecture does not address: the instruments the programme is deploying may be necessary but are not sufficient. The fight as currently conceived -- litigation, regulation, diplomacy, markets, evidence, media -- may be the right fight for building the legal and regulatory infrastructure. The simulation's evidence suggests it may not be the right fight for moving the production curve.

The simulation's scope was deliberately limited to the instruments currently being deployed or planned. It did not model demand destruction, political realignment at the national manufacturing level, or financial instrument-level interventions. These were design decisions, not limitations of the result. The result creates an obligation to ask whether the instruments outside the simulation's scope are the ones that actually move the curve.

The more uncomfortable version of the same question: the well-understood arenas for institutional action -- courts, regulators, diplomats, scientists, journalists -- may be inconsequential to the fight at the scale and speed the target requires, despite the best efforts of the best available coalition. If that is true, it is the most important thing the programme can say. It is not a counsel of despair. It is a specification of what is actually needed.

VIII

What the Programme Is Still For

The simulation's result is most challenging if the programme's purpose is defined narrowly as: bend the production curve within the next decade by deploying the available institutional toolkit. On that definition, the simulation suggests the programme needs a wider frame.

The programme's purpose is more accurately defined differently: build the legal and regulatory infrastructure that makes curve-bending possible; create the liability architecture that changes the cost of capital for new polymer production; develop the evidence record that makes future, stronger instruments legitimate; and keep the institutional coalition coherent long enough for the political moment to arrive.

On that definition, the simulation's observations are encouraging, with qualifications. The infrastructure was built. The liability architecture developed. The evidence record advanced. The coalition stayed coherent under sustained attack including a coordinated disinformation campaign at estimated industrial scale.

The observation that the curve did not move is itself a contribution: it identifies what is missing. Moving the institutions is necessary but not sufficient. The fight requires a second front that is not yet open.

The programme is still for this: building what is required so that when the political moment arrives, or when a more extreme set of instruments becomes available and legitimate, the legal and regulatory infrastructure exists to use them.[1]

G1 / TIME -- FINAL POSITION, AUTUMN 2036

The institutions are moving. The production curve is not. The gap between those two facts is not the programme's failure. It is the programme's subject matter.

[1] The tobacco litigation took thirty years from the first cases to the 1998 Master Settlement Agreement. The programme's litigation track, in eleven years of simulation, reached the Dutch liability finding and the California causation hearing. The question is whether the production curve has thirty years to wait.