TOM FORD
PLASTIC INNOVATION PRIZE
POWERED BY 52HZ

COMPETITION GUIDELINES

EXECUTIVE SUMMARY

THE TOM FORD PLASTIC INNOVATION PRIZE

The Tom Ford Plastic Innovation Prize is a two-year innovation competition powering the creation of the best replacement for thin-film plastic; one that can be used as an alternative to everything from polybags (the fashion industry's current packaging of choice) to single-use, resealable sandwich bags. Winners of the Tom Ford Plastic Innovation Prize will be capable of producing scalable thin-film plastic alternatives that can help address the plastic crisis facing our environment. The Tom Ford Plastic Innovation Prize is powered by 52HZ, an advisory services arm of Lonely Whale.

THE PROBLEM WITH THIN-FILM PLASTIC

Thin-film plastic is a common term for everyday items such as single-use and resealable plastic sandwich and storage bags (SRPBs) and "polybags" used in the fashion industry when they ship clothes, cosmetics, or other items. What most hold in common is they are made from the same base material, low density polyethylene (LDPE). Due to lack of appropriate facilities, challenging economics, and entrenched industry interests, thin-film plastic is almost never recycled. Instead, it ends up in landfills or polluting our lands and waterways.[1]

The scope of our usage of polybags and SRPBs is staggering. Almost 180 billion polybags[2] are produced annually; only 15% are collected for recycling. The average U.S. family uses between 500 and 1,500 disposable SRPBs every year – equating to between 40 and 125 billion thrown out annually.[3] Of those, few are recycled. When you add it up, every year approximately 125 billion plastic sandwich and storage bags are thrown out, an estimated 4.5 billion of which end up in the ocean.[4] The COVID-19 pandemic, which has led to a push to leverage single-use plastics, is expected to exacerbate these trends.

Plastic films represent only 19% of all plastic produced yet make up 5 million metric tons of ocean leakage, or a full 46% of all ocean plastic leakage. With the volume of new plastic entering the ocean every year expected to nearly triple to 29 million metric tons by 2040, plastic will only continue to endanger countless species and ecosystems already affected by increased warming, acidification, and other stressors.

[1] "No online shopping company can figure out how to quit this one plastic bag." Vox. https://www.vox.com/the-goods/2019/1/31/18203972/polybags-plastic-online-shopping-meal-kits-patagonia

[2] Fashion for Good https://fashionforgood.com/our_news/fashion-for-good-launches-a-pilot-to-produce-a-circular-polybag/

[3] Recycle Nation https://recyclenation.com/2014/10/recycle-Ziploc®-bags/ and EcoLunch Boxes study https://ecolunchboxes.com/pages/lunch-study/

[4] 500 bags per family. 128M households. 64B bags used. 7% ocean leakage of thin films according to Pew = 4.48B

WHY IS A PRIZE NEEDED?

The world needs a scalable, affordable alternative to thin-film plastic, and it needed one yesterday; industry has failed to provide it. The major obstacles preventing the development of solutions for the thin-film plastic crisis, coupled with the sheer scale of the problem, necessitate a fresh approach that can drive needed innovation and systems change. Current alternatives are limited and simply cannot compete with traditional thin-film plastic. Recycling is unlikely to address the challenge; in most parts of the world, the infrastructure for recycling plastic bags and films does not exist; public policy is often ineffective, and most consumers are not empowered to recycle responsibly or effectively.

Innovation prizes have been used throughout history to incentivize and reward solutions to important yet intractable problems. The Tom Ford Plastic Innovation Prize is designed to harness this power to help address the thin-film plastic crisis by supporting scalable innovations and focusing attention on their adoption.

COMPETITION OVERVIEW

The Tom Ford Plastic Innovation Prize is a two-year competition, followed by three years of support for competition finalists, focused on the advancement of *scalable and truly biologically degradable* plastic alternatives that are capable of replacing thin-film plastic at scale in current supply chains. Tom Ford and 52HZ are offering $1.2 million towards the solutions that best achieves this objective.

While there are existing “biodegradable'' thin-film replacements in the marketplace, the prize is focused on best-in-class solutions that address the limitations of many of these materials, and that are positioned for the scale and market adoption commensurate with the thin-film plastic problem.

The Tom Ford Plastic Innovation Prize embodies three core strategic components as it seeks to catalyze the adoption of these desperately needed innovations:

Focus: Material Innovation Solutions for Thin-Film Plastic

The prize specifically focuses on upstream replacements (new materials or packaging redesigns). While recycling technology, reusable solutions, and new business models are also critical, we believe the most impactful approach for solving the thin-film plastic crisis is through material innovation.

Validating Performance via Third-Party Testing

Competition finalists will submit samples of their materials for rigorous third-party analysis against a set of testing protocols developed in conjunction with the prizes’ Scientific & Technical Advisory Board.

Facilitating Scale, Not Just Innovation

The prize will catalyze new innovation but is also designed to accelerate the trajectory of companies already working on thin-film plastic alternatives, bringing visibility to the issue, vetting solutions, and facilitating scale.

The Tom Ford Plastic Innovation Prize is structured into two rounds occurring over approximately two years.

TECHNICAL SUBMISSION ROUND: Entrants will first complete an initial Technical Submission, which will be reviewed by the Scientific & Technical Advisory Board and the Judging Panel, who will then select a set of competition finalists.

FINAL TESTING ROUND: Finalists will submit samples of their innovations for lab and field testing. The Advisory Board and Judging Panel will use the results of these analyses, together with additional materials provided by the finalists, to choose the prize winners.

ELIGIBILITY & JUDGING CRITERIA

Given the focus on scalable innovation and the use of lab testing to validate the performance of the materials submitted by competing teams, the innovations submitted to the competition must be beyond the idea stage at the time the initial submission is made. Innovations must, at a minimum, have a working prototype (TRL 4 and above).[5] All initial competition submissions must be submitted in English and received by October 24, 2021.

Outlined below are detailed descriptions of the judging criteria used to evaluate competition submissions. For the Final Testing Round, 52HZ will collaborate with the Scientific & Technical Advisory Board to define specific thresholds and detailed testing protocols that will be used to evaluate the product submissions provided by finalists. These testing protocols will be published as part of the final Rules & Regulations distributed in advance of the start of the Final Testing Round.

[5] https://www.nasa.gov/directorates/heo/scan/engineering/technology/technology_readiness_level

JUDGING CRITERIA - TOM FORD PLASTIC INNOVATION PRIZE

CRITERIA	DESCRIPTION
BIOLOGICAL DEGRADATION AT END-OF-LIFE	Materials must be capable of demonstrating soil and marine biological degradation under conditions that closely approximate natural environments. Biological degradation will be evaluated under controlled soil and marine conditions, as well as in a field ocean environment. Analyses will be conducted to examine the presence of toxicity and microplastics among the remaining mass. Bonus points will be awarded for solutions that incorporate an element of circularity (i.e. end-of-life components could theoretically become input feedstocks in production). Note that materials that are designed to break down solely under idealized controlled conditions, such as industrial or home composting, will not meet the final criteria.
ENVIRONMENTAL & SOCIAL IMPACTS OF PRODUCTION	Materials must minimize negative social & environmental impacts arising from their production. Materials will be assessed against a set of environmental & social metrics to measure the impacts of production. Such measures may include, but are not limited to: ● Net carbon emissions and/or the use of offsets ● Input feedstocks (e.g. biobased vs. non-biobased) ● Supply chain / raw material sourcing practices
PRODUCT PERFORMANCE	Products must meet industry standard performance specifications to ensure solutions are capable of meeting the technical requirements for packaging system integration and for consumer end-use. Performance criteria may include, but are not limited to: ● Strength ● Flexibility ● Water vapor transmission ● Optical properties (in particular transparency & scannability)
SCALABILITY	Solutions must be scalable to meet the massive scope of the thin-film plastic pollution challenge. Factors affecting scalability include, but are not limited to: ● Raw material / feedstock input constraints ● Barriers to integrating materials within existing manufacturing operations ● Marketability and appeal to both brands and end consumers ● Minimization of unintended consequences for existing waste management systems
COST	Solutions must have a clear pathway to becoming reasonably cost competitive with traditional thin-film plastics.

COMPETITION TIMELINE

Below is a simplified version of the competition timeline. A detailed version, including further information on specific activities and deliverables, is included in the body of the report.

PHASE	DATES
SUBMISSION PORTAL OPENS	**MAY 18, 2021**
INITIAL SUBMISSIONS DUE	**OCTOBER 24, 2021**
SUBMISSION REVIEW	**OCTOBER 2021 - JANUARY 2022**
ANNOUNCEMENT OF FINALISTS	**FEBRUARY 2022**
SAMPLE SUBMISSION & TEAM SUMMIT	**FEBRUARY - MARCH 2022**
FINAL TESTING	**MARCH - DECEMBER 2022**
TEAM ENGAGEMENT & FINALIST FEATURE CAMPAIGN	**APRIL - DECEMBER 2022**
REVIEW OF FINAL SUBMISSIONS & TESTING RESULTS	**Q1 2023**
WINNERS ANNOUNCED	**Q1 2023**
ACCELERATOR SUPPORT & SCALING INNOVATIONS	**Q2 2023 - Q4 2025**

The competition is broken into two rounds over approximately two years, followed by an extended accelerator support phase through 2025:

TECHNICAL SUBMISSION ROUND

The first phase of the competition involves an initial submission where teams will be required to complete a detailed Submission Template about their company and their innovation and how it matches the competition criteria. Teams will have the opportunity to submit white papers (where available), video footage, and other supporting documentation. All materials must be submitted via the competition's submission portal, linked here.

FINAL TESTING ROUND

At least five teams (up to a maximum of 10 teams) will be selected to move forward into the final round of the competition. Shortly after their selection, finalist teams will be required to provide a finalist submission packet that includes the following:

- **Final Submission Template:** Finalists will be asked to provide an updated overview of their solution with more specific details about how it meets the prize judging criteria, in particular those elements of the criteria not assessed as part of the lab and field testing protocols.

- **Product Samples:** Finalists will be required to provide a set of product samples to undergo lab and field testing to demonstrate their performance against the biological degradation and product performance judging criteria.

The lab and field testing will include the following components:

ANALYSIS	PURPOSE
SOIL RESPIROMETRY **MARINE RESPIROMETRY**	• Respirometry measures the rate and process by which materials break down and degrade under controlled conditions. • Respirometry is used in assessing biological degradation under various biodegradation standards protocols from organizations such as TUV and ASTM. • The prize will include analyses conducted in both soil and seawater "inoculum" to understand biological degradation under conditions analogous to the two most important mismanaged end-of-life environments.
GERMINATION	• Germination analysis is designed to measure the toxicity of the remaining soil inoculum left after soil respirometry is completed.
MICROPLASTICS ANALYSIS	• Soil and marine respirometry inocula will be analyzed using microscopy and spectroscopy to test for the presence of microparticles and microplastics after the process of biological degradation of each sample is completed.
MARINE FIELD TESTING	• Marine field testing will be conducted to analyze biological degradation and impacts in environmental conditions where the products may end up under mismanaged waste scenarios.
PRODUCT PERFORMANCE	• In-lab product performance testing will consist of a series of tests to assess the strength, flexibility, and water vapor permeability of the samples. • Tests conducted may include, but are not limited to: Tensile Testing and Water Vapor Transmission Rate analyses.

Detailed testing protocols will be outlined in the Rules & Regulations, which will be released at least 30 calendar days prior to the official commencement of the final round of the competition (defined as the date by which finalist teams are required to submit samples of their materials for analysis).

It should be noted that although the testing protocol outlined above is designed to be rigorous and challenging, the Advisory Board will develop the final testing standards to encourage the participation of early stage companies; while product end-of-life performance is a main focus of the prize, the judging criteria are designed to be holistic and comprehensive to ensure that a variety of factors inform the final decision-making process.

ACCELERATOR SUPPORT

After the final determinations are made regarding prize winners, the competition will transition into an accelerator phase where 52HZ, together with the network of partners engaged on the prize, will work to drive market adoption for the innovations sourced through the competition. Services will be tailored to the specific needs of the Prize winners and are envisioned to include, but will not be limited to, the following:

- **Mentorship & Strategic Support**
- **Introductions & Partnership Facilitation**
- **Market Engagement**
- **Solution Storytelling**

Note that in addition to the services provided to prize winners, 52HZ may at its discretion extend portions of the accelerator support services to other high-performing competition entrants who were not selected as a prize winner.

PRIZE PURSE & AWARDS

The total prize purse available for competitors in the Tom Ford Plastic Innovation Prize is $1.2 million, divided as follows:

Milestone Awards

Finalist teams will share equally in a $200,000 milestone prize purse to encourage the development of their solutions. At least five teams (up to a maximum of 10 teams) will be selected to move forward to the final round of the competition.

Grand Prize Awards

The $1 million grand prize purse will be awarded as follows:

- *Grand Prize Winner:* $600,000
- *2nd Place:* $250,000
- *3rd Place:* $150,000

These amounts will be deployed as investment capital in the form of a Simple Agreement for Future Equity (SAFE), the details of which are linked in the Competition Submission Agreement required to be completed by prize entrants.[6] This approach was chosen in order to encourage the scaling of innovations put forward in the competition and to crowd-in outside investment capital.

[6] In the unlikely event that one of the prize winners is a publicly-traded company, the prize award investment will be made in the form of a purchase of the prize winner's publicly traded securities.

In addition to the milestone and grand prize awards, 52HZ, together with the prize Judges, Advisory Board, Investment Alliance, and other partners with relevant expertise, will support finalists as they continue to raise capital and build relationships to help scale their innovations. The value of such services are not factored into the above figures.

PRIZE STAKEHOLDERS

The success of the prize is made possible by the engagement and support of a variety of stakeholder groups, some of whom have been discussed above.

PRIZE JUDGES

Composed of industry leaders, influencers, and scientists who will champion market adoption of the thin-film alternatives sourced through the prize, judges for the Tom Ford Plastic Innovation Prize serve as a high-level review body tasked with selecting competitors best positioned for growth. Judges for the prize are capable of bringing world-changing influence and spotlighting solutions in a way that traditional approaches can rarely attain.

SCIENTIFIC & TECHNICAL ADVISORY BOARD

The prize Scientific & Technical Advisory Board is tasked with ensuring that winning solutions meet clear environmental standards at both production and end-of-life and are positioned for market adoption by meeting performance and scalability criteria.

As such, the Advisory Board for the competition will be composed of a diverse set of individuals from academia, NGOs, industry, and the investment community, who bring to bear world-leading expertise in areas such as materials science, marine science and marine pollution, packaging design and materials, corporate supply chains and manufacturing, and product adoption and investment.

Along with helping drive decision-making for the two judging rounds of the competition, advisory board members will also provide input on the prize judging criteria and third-party testing protocols, as well as serving as a resource for competitors.

PRIZE INVESTMENT ALLIANCE

The Prize Investment Alliance consists of business and technology leaders with expertise in venture capital, finance, impact investing, entrepreneurship, marketing, and technology commercialization. The Alliance will advise the Judges on the market viability of finalist submissions, and will help provide investment capital for the prize winners.

IMPLEMENTATION PARTNERS

The prize has engaged a broad network of partners, including impact investors, NGOs, scientific experts, corporations, and major brands, to help support the activities outlined above to accelerate adoption of competition technologies through outreach, business

mentorship, and supply-chain partnerships. 52HZ continues to actively recruit business implementation partners to drive engagement for the scaling and market adoption phase of the prize.

52HZ
The Tom Ford Plastic Innovation Prize is powered by 52HZ, an advisory services arm of Lonely Whale. 52HZ helps NGOs, brands, and influencers create strategies for building movements in support of our ocean and environment. Leveraging Lonely Whale's experience building strategic, data-driven campaigns, 52HZ is helping others spark global shifts in behavior and attitude by making issues culturally relevant and inspiring.

HOW TO GET INVOLVED

ENTER THE COMPETITION
Do you have the solution to the thin-film plastic crisis? Enter the competition by visiting https://plasticprize.org and clicking 'Submit' to begin your submission, or jump straight to the competition's submission portal by clicking here.

All initial competition submissions must be received by October 24, 2021.

BECOME A PARTNER
Are you or your organization using thin-film plastic in your supply chain? Are you an investor interested in themes around material innovation, ocean health, and/or climate change? Do you represent an NGO working on plastic pollution? Reach out to us at info@plasticprize.org.

SPREAD THE WORD
Care about plastic pollution? Help us spread the word and make sure innovators around the globe know about this opportunity. You can stay engaged with the prize on social media (below), and make sure to sign up for the ***prize newsletter*** by visiting https://plasticprize.org.

- Instagram
- Facebook
- Twitter
- LinkedIn

For the ocean.

COMPETITION GUIDELINES

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INTRODUCTION

This document is designed to outline the purpose of the Tom Ford Plastic Innovation Prize and to summarize the high-level requirements, rules, and structure of the competition.

In addition to these Competition Guidelines, 52HZ will provide competition finalists with a detailed Rules & Regulations document at least 30 calendar days prior to the official commencement of the final round of the competition (defined as the date by which finalist teams are required to submit samples of their materials for analysis). The Rules & Regulations document will outline the final submission procedures, detailed testing protocols (with specific technical thresholds), and other logistics governing the final round of the competition. The Rules & Regulations will be developed by 52HZ in consultation with the competition's Scientific & Technical Advisory Board.

Final dates for the first round of submission judging and the announcement of competition finalists will be communicated directly with entrants prior to the first round submission deadline.

52HZ may revise these Guidelines at any time during the course of the competition to provide additional information or to improve the quality of the competition. Unanticipated issues that arise may require modifications to these Guidelines. 52HZ reserves the right to revise these Guidelines as it, in its sole discretion, deems necessary. All eligible teams will be notified of revisions in a timely manner.

Please send any questions about this competition and/or feedback regarding the Competition Guidelines to info@plasticprize.org.

WHY THIN FILM?

WHY THIN FILM?

A burgeoning awareness around the environmental threat posed by single-use plastic water bottles, shopping bags, and straws, largely driven by data from global beach clean-ups and global campaigns, have made using them—or choosing alternatives to them—a lifestyle choice. But, there is another less conspicuous plastic item that often goes unnoticed: thin-film plastic (TFP).

WHAT IS THIN-FILM PLASTIC?

Thin-film plastic is a common term for everyday items such as single-use and resealable plastic sandwich and storage bags (SRPBs) and "polybags" used in the fashion industry when they ship clothes, cosmetics, or other items. What most hold in common is they are made from the same base material, low density polyethylene (LDPE). They are almost never recycled.

Theoretically this material is recyclable but most curbside recycling programs today lack facilities with the necessary infrastructure for recycling TFPs. In fact, TFPs collected in curbside recycling bins can interrupt and slow down the recycling process because they get caught in and clog up machines used in recycling facilities.[7] Recycled TFP also carries a low value in the marketplace because virgin plastic is often cheaper and more uniform[8], which means there are few (if any) end-buyers for the material.[9] Instead, it ends up in landfills or polluting our lands and waterways.[10]

IMPACTS OF THIN-FILM PLASTICS

Plastic films represent only 19% of all plastic produced yet make up 5 million metric tons of ocean leakage, or a full 46% of all ocean plastic leakage. Currently it is estimated that there are 14 million metric tons of plastic on the ocean floor that will be nearly impossible to extract. With 11 million metric tons of new plastic entering the ocean every year since 2016 and expected to nearly triple to 29 million metric tons by 2040 (the equivalent of 241 Washington Monuments), plastic will only continue to endanger countless species and ecosystems already affected by increased warming, acidification, and other stressors.

While the ocean plastic problem is not limited to TFPs like polybags and SRPBs – nearly 100% of sea turtle hatchlings contain tiny pieces of plastic that "affect nutrient absorption and gut

[7] https://www.plasticbaglaws.org/get-involved/plastic-bag-recycling/
[8] "No online shopping company can figure out how to quit this one plastic bag." Vox. https://www.vox.com/the-goods/2019/1/31/18203972/polybags-plastic-online-shopping-meal-kits-patagonia
[9] https://www.wastedive.com/news/plastic-film-bag-takeback-chemical-recycling-coronavirus/592503
[10] "No online shopping company can figure out how to quit this one plastic bag." Vox. https://www.vox.com/the-goods/2019/1/31/18203972/polybags-plastic-online-shopping-meal-kits-patagonia

function"[11] and whales too often wash up dead on shore, their stomachs full of everything from fishing nets and rope to plastic cups[12] – marine species can't tell the difference between thin-film plastic in the ocean and food.[13] And it's not difficult to imagine why: buffeted by an ocean current, a polybag or an SRPB make a pretty convincing doppelganger for a jellyfish. Plastic has become so much a part of our world that microplastic traces have even been documented in the placentas of unborn human babies.[14]

THE TWO BIG OFFENDERS IN OUR DAILY LIVES

POLYBAGS

Almost 180 billion polybags[15] are produced annually; only 15% are collected for recycling. These bags are used by the fashion industry to ship individual items such as clothing, shoes and cosmetics, but they aren't limited to the fashion industry alone. Polybags are ubiquitous around the world in the shipping of all types of merchandise, from clothing to electronics to food. And the universal function of polybags, their raison d'etre, is key to understanding the challenge of inventing a scalable, biologically degradable replacement for them.

What is the function of a polybag? Polybags protect products as they make their way through the supply chain.[16] They are cheap, lightweight, and efficient. The environmental cost of neglecting to protect an article of clothing, which has a broad range of material inputs in its production (water, polyester, cotton, etc.), is greater than the environmental cost of the single package it arrives in.[17] But polybags and other TFPs are still terrible for the environment, given their ubiquity and the lack of accessible recycling options. According to the Environmental Protection Agency (EPA), US residents use more than 380 billion plastic bags (created with 12 million barrels of oil) every year.[18] **Single-use plastic weighing the equivalent of 80,000 elephants is thrown away by the fashion industry each year in the form of polybags alone.**[19]

An alternative must, therefore, retain the protective function of polybags but also represent a solution to the environmental crisis created by polybags and other TFPs.

[11] https://psmag.com/environment/baby-sea-turtles-are-full-of-plastic
[12] https://www.cbc.ca/news/technology/whale-plastic-100kg-1.5381205
[13] "Animals Eat Ocean Plastic Because it Smells Like Food." National Geographic. https://www.nationalgeographic.com/news/2016/11/animals-eat-ocean-plastic-because-of-smell-dms-algae-seabirds-fish/
[14] https://www.theguardian.com/environment/2020/dec/22/microplastics-revealed-in-placentas-unborn-babies
[15] Fashion for Good https://fashionforgood.com/our_news/fashion-for-good-launches-a-pilot-to-produce-a-circular-polybag/
[16] https://www.vox.com/the-goods/2019/1/31/18203972/polybags-plastic-online-shopping-meal-kits-patagonia
[17] https://www.vox.com/the-goods/22214017/online-shopping-pandemic-packaging-ecommerce-waste-plastic
[18] https://blog.epa.gov/2016/11/01/confronting-plastic-pollution-one-bag-at-a-time/
[19] https://www.commonobjective.co/article/fashion-s-polybag-addiction-can-it-be-overcome

SINGLE-USE AND RESEALABLE PLASTIC SANDWICH AND STORAGE BAGS (SRPBS)

The average U.S. family uses between 500 and 1,500 disposable SRPBs every year – equating to between 40 and 125 **billion** thrown out annually.[20] Of those, few are recycled. These bags are used every day to pack our children's lunches, store leftovers, and travel with our toiletries.

They have become so ubiquitous in our daily lives that we use them with little consideration of the negative environmental impact they are having today. In market research conducted in May 2020[21], 75% of American adults self-identify as "frequent" users, and only 3% say they "never" use them. Storing food/leftovers and packing lunches are the top reported uses for these baggies with 82% of adults saying they use these bags for work/school lunches. For most, these bags have been a part of everyday life for as long as they can remember. A majority have never even tried, nor perhaps even heard of, an alternative.

When you add it up, every year approximately 125 billion plastic sandwich and storage bags are thrown out, an estimated 4.5 billion of which end up in the ocean.[22]

Our planet is literally wrapped in plastic.

COVID-19 - EXPONENTIALLY INCREASING THE PROBLEM

The global COVID-19 pandemic has resulted in an industry push to make plastic "the great protector." From social posts showcasing curtains of plastic keeping loved ones safely together to traditional and social media bringing "single-use" back to the lexicon in order to ensure personal health and safety, we have witnessed a sudden shift in the plastic narrative since the onset of COVID-19.

- "Reusable bags are notoriously dirty and may spread the virus," the Wall Street Journal editorial board opined in mid-March 2020.[23]
- "As the COVID-19 virus spreads across the country, single-use plastics will only become more vital," wrote[24] Plastics Industry Association CEO Tony Radoszewski in March.[25]

Coupled with the plastic industry rhetoric that COVID-19 lingers longer on reusables made from cotton and paper products (an assertion determined to be false based on research

[20] Recycle Nation https://recyclenation.com/2014/10/recycle-Ziploc®-bags/ and EcoLunch Boxes study https://ecolunchboxes.com/pages/lunch-study/

[21] Nationwide Online Survey of Adults in the U.S. May 2020 by EMC Research, commissioned by Lonely Whale. Available upon request.

[22] 500 bags per family. 128M households. 64B bags used. 7% ocean leakage of thin films according to Pew = 4.48B

[23] https://www.wsj.com/articles/the-plastic-bag-ban-backfires-11584399666

[24] https://www.plasticsindustry.org/article/plastics-industry-essential-first-line-defense-products-fight-coronavirus

[25] "It's Official: Resusables are Safe During COVID" https://grist.org/climate/its-official-reusables-are-safe-during-COVID-19/

published in *The Lancet*)[26], single-use plastics that were being banned in cities, states and countries pre-pandemic began to make a come-back.

ALTERNATIVES TO THIN-FILM PLASTIC

Presently there are very few alternatives to either SRPBs or polybags and even fewer that are low cost, scalable to meet the current demand, and that can eliminate negative impacts on the environment.

SUPPORT EXISTS FOR FINDING SUITABLE ALTERNATIVES

Regarding SRPBs, 76% of adults in North America[27] agreed that SRPBs are bad for the environment, with 28% in strong agreement. Yet 52% believe "most" plastic storage bags are recycled, and the factors of cost and convenience remain big challenges to changing behavior away from SRPBs.

YET MAJOR CHALLENGES HINDER THE DEVELOPMENT OF SOLUTIONS

A range of factors have so far limited the development of solutions and contributed to the ongoing impact of thin-film plastics:

Changing From Linear to Circular Consumption

While circular economy models have continued to proliferate, the pace of adoption has been limited and inconsistent, with wide variations across products, geographies, and industries. Replacing traditional linear consumption patterns (take -> make -> dispose) with circular models that emphasize reuse, remanufacture, and recycling, is particularly challenging given the ubiquity and low value of thin-film plastic.

Slow Pace of Developments in Materials Science

Advances in materials science are beginning to generate new opportunities for product design and the inclusion of circular economy principles, but the level of investment pales in comparison with the trillions of dollars of goods designed for a linear economy. Thin-film plastics face additional obstacles preventing new innovations given the extremely low economic value of thin films when compared with other polymers.

Policy & Economic Challenges Facing Waste Management Systems

Effective waste management systems require addressing a range of complex policy and economic challenges, and the interplay between them. Waste management

[26] According to the CDC there have been no documented cases of COVID-19 caused by touching a contaminated surface. https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html. Further, COVID-19 lasts the longest on plastic – up to six days – about the same as stainless steel, and longer than paper, cardboard, glass, or cloth. https://www.thelancet.com/journals/lanmic/article/PIIS2666-5247(20)30003-3/fulltext, https://grist.org/climate/its-official-reusables-are-safe-during-COVID-19/

[27] Nationwide Online Survey of Adults in the U.S. May 2020, by EMC Research, commissioned by Lonely Whale.

systems are implemented within political and geographical units, and their effectiveness is highly contingent on attaining economies of scale, the behavior of consumers, and participation in sometimes unpredictable end-markets for recycled materials. These factors combine in the case of thin-film plastics such that few waste management systems can process thin-film plastics for recycling.

The Entrenched Petrochemical Industry

Chemical companies, as well as the oil and gas industry, have clear vested interests in maintaining the status quo, with the petrochemical industry having spent more than $200 billion on chemical and manufacturing plants in the United States over the past decade.[28] Furthermore, COVID-related reductions in demand for oil have left these companies looking for new revenue streams.[29]

Even when companies and brands recognize the impact of the materials in their supply chain, doing things differently presents real challenges. Recognizing the increasing impact of polybags on the environment and expectations from consumers about implementing more sustainable practices, brands have begun to align on developing alternatives to polybags and/or testing programs to collect and recycle polybags.[30] To date, the issues outlined above have conspired to limit the effectiveness and adoption of such approaches and the volume of thin-film plastics entering the ocean is projected to rise rapidly over the coming decades.

The major obstacles preventing the development of solutions for the thin-film plastic crisis, coupled with the sheer scale of the problem, necessitate a fresh approach that can drive needed innovation and systems change. Such efforts can pay dividends for other sources of plastic pollution and catalyze changes in the plastic industry, however the scale of the thin-film plastic challenge necessitates a specific focus on this waste stream. Currently, with few cost effective alternatives available in the market, and no easy and efficient way to collect and recycle SRPBs and polybags at the scale required given its potential impact, these bags are set to become the next most dangerous plastic species in the water.

[28] Ibid.

[29] "Major forecasters agree: No oil demand recovery until at least 2022" World Oil.
https://www.worldoil.com/news/2020/8/14/major-forecasters-agree-no-oil-demand-recovery-until-at-least-2022

[30] "The State of Fashion 2019." McKinsey.
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THE TOM FORD PLASTIC INNOVATION PRIZE

PRIZE STRUCTURE & JUDGING CRITERIA

The Tom Ford Plastic Innovation Prize is designed to harness the power of innovation prizes, which have been used throughout history to incentivize and reward solutions to important yet intractable problems, to help address the thin-film plastic crisis by supporting scalable innovations and focusing attention on their adoption. Through an open innovation process, rigorous scientific and technical analysis, and in-depth partnership and facilitation activities, the prize will catalyze the use of scalable, biologically degradable thin-film plastic alternatives.

PRIZE VISION & OVERVIEW

The Tom Ford Plastic Innovation Prize is a two-year competition, followed by three years of support for competition finalists, designed to incentivize the development and adoption of alternatives to thin-film plastic. The core objective of the Plastic Innovation Prize is the advancement of *scalable and truly biologically degradable* plastic alternatives that are capable of replacing thin-film plastic at scale in current supply chains. While there are existing "biodegradable" thin-film replacements in the marketplace, the prize is focused on best-in-class solutions that address the limitations of many of these materials, and that are positioned for the scale and market adoption commensurate with the thin-film plastic problem. The solutions sourced through the prize competition must:

- *Meet meaningful criteria for* ***end-of-life and biological degradation***
- ***Minimize unintended consequences*** *in terms of their production, use, and end-of-life breakdown*
- ***Be scalable and positioned for market adoption****, aligning with the technical requirements of modern supply chains and packaging systems*

Tom Ford and 52HZ are offering a total of $1.2 million towards the solutions that best achieve these objectives (see the Prize Purse & Awards section of this document for a detailed breakdown of the prize awards).

By 2025, we envision a world where competition finalists and other innovators are supplying thin-film plastic alternatives at a scale sufficient to begin to reduce the over 300 billion single-use resealable plastic bags and polybags used annually around the globe. In this future state, consumers have real choices and are able to direct their dollars to brands that seek out these innovations, where insufficient solutions that don't tackle the core problem of thin-film plastic waste are discarded as we transition to more sustainable alternatives.

PRIZE COMPETITIONS AS INNOVATION CATALYSTS

Innovation prizes have long been used as a tool to motivate both traditional and non-traditional actors to generate radical change in a variety of fields. Such prizes involve announcing to the public the offering of a large monetary award for a solution to a particular problem. This announcement and the financial incentive of the prize, accompanied by clearly defined performance criteria for winning, are designed to encourage entrepreneurs and innovators to focus their attention on solving the intractable problem targeted by the prize and catalyze solutions that would not occur without the prize or that would take too long to arrive under normal circumstances.

Providing a monetary third-party incentive has successfully led to the creation and implementation of foundational discoveries such as longitude at sea (Longitude Prize, 1714), margarine (Napoleon Prize, 1869), and non-stop transatlantic flight (Orteig Prize, 1919). While history is punctuated by a multitude of innovations spurred by various prizes, perhaps the most notable for us, given its relevance to the challenges we face today, is the Phelan & Collender Prize in 1863. Seeking an alternative to the increasingly scarce ivory used to make billiard balls, New York manufacturer Michael Phelan offered a $10,000 prize to anyone who could create a wholly comparable substitute. Incentivized by this prize, valued today at $370,000, in 1869 John Wesley Hyatt came forward with his invention, celluloid, or as we now know it, the world's first plastic.

It is only fitting that 152 years later, the same modality used to create plastic now serves as a solution to the unforeseen but widespread destruction it has since caused.

PRIZE STRATEGY & FOCUS

Every innovation prize takes a unique approach to solving a particular problem, based on the topic area focus, the structure of the competition, the criteria and methods for evaluating solutions, and the desired future state the competition seeks to achieve.

The Tom Ford Plastic Innovation Prize embodies three core strategic components as it seeks to catalyze the adoption of new innovations that can help address the crisis of thin-film plastic:

> ***Focus: Material Innovation Solutions for Thin-Film Plastic***
> The prize specifically focuses on upstream replacements (new materials or packaging redesigns). While recycling technology, reusable solutions, and new business models are also critical, we believe the most impactful approach for solving the thin-film plastic crisis is through material innovation.

Validating Performance via Third-Party Testing

Competition finalists will submit samples of their materials for rigorous third-party analysis against a set of testing protocols developed in conjunction with the prizes' Scientific & Technical Advisory Board.

Facilitating Scale, Not Just Innovation

The prize will catalyze new innovation but is also designed to accelerate the trajectory of companies already working on thin-film plastic alternatives, bringing visibility to the issue, vetting solutions, and facilitating scale.

Although the prize has a specific focus on material innovation and the scaling of thin-film plastic alternatives, we recognize that the crisis of plastic pollution must be tackled from multiple angles and are supportive of a range of methods that other organizations may be putting forth. We welcome partnerships with individuals and organizations advancing alternative approaches.

ELIGIBILITY CRITERIA

Given the focus on scalable innovation and the use of lab testing to validate the performance of the materials submitted by competing teams, the innovations submitted to the competition must be beyond the idea stage at the time the initial submission is made. Innovations must, at a minimum, have a working prototype (TRL 4 and above).[31] Competition submissions must be submitted in English. All initial competition submissions must be received by October 24, 2021, as outlined in the Competition Timeline section below.

As potential entrants ponder whether to submit to the competition, two key points of clarification regarding eligibility:

SUBMISSIONS DO NOT NECESSARILY NEED TO BE A DIRECT DROP-IN REPLACEMENT FOR THIN-FILM PLASTIC

Competition submissions must be capable of replacing SRPBs and polybags by reaching similar levels of product performance, however there is no specific requirement that these solutions replicate the look and feel of thin film. Solutions that, for example, involve paper-based materials with biocoatings are equally compelling. Technologies that are more direct, drop-in replacements for thin films are likely to score higher in judging areas such as scalability, however this may be offset by fewer points in other areas depending on the production method, performance, etc.

[31] https://www.nasa.gov/directorates/heo/scan/engineering/technology/technology_readiness_level

HIGH-SCORING SUBMISSIONS MAY NOT ACHIEVE HIGH MARKS ON EVERY ELEMENT OF THE JUDGING CRITERIA

We do not expect that high-scoring submissions will do well on every aspect of the judging criteria. For example, there are inherently trade-offs between product performance and the rate at which the material will break down in the natural environment. The judging criteria are designed to be holistic and comprehensive such that the competition rewards solutions that are best positioned to succeed in the marketplace, rather than simply perform well on a limited set of metrics.

JUDGING CRITERIA

Outlined below are detailed descriptions of the judging criteria used to evaluate submissions to the Tom Ford Plastic Innovation Prize. For the initial Technical Submission, competitors' digital submissions will be reviewed directly against these criteria. For the Final Testing Round, 52HZ will collaborate with the Scientific & Technical Advisory Board to define specific thresholds and detailed testing protocols that will be used to evaluate the product submissions provided by finalists, which will be published as part of the final Rules & Regulations distributed in advance of the start of the Final Testing Round.

CRITERIA	DESCRIPTION
BIOLOGICAL DEGRADATION AT END-OF-LIFE	Materials must be capable of demonstrating soil and marine biological degradation under conditions that closely approximate natural environments. Biological degradation will be evaluated under controlled soil and marine conditions, as well as in a field ocean environment. Analyses will be conducted to examine the presence of toxicity and microplastics among the remaining mass. Bonus points will be awarded for solutions that incorporate an element of circularity (i.e. end-of-life components could theoretically become input feedstocks in production). Note that materials that are designed to break down solely under idealized controlled conditions, such as industrial or home composting, will not meet the final criteria.
ENVIRONMENTAL & SOCIAL IMPACTS OF PRODUCTION	Materials must minimize negative social & environmental impacts arising from their production. Materials will be assessed against a set of environmental & social metrics to measure the impacts of production. Such measures may include, but are not limited to: ● Net carbon emissions and/or the use of offsets ● Input feedstocks (e.g. biobased vs. non-biobased) ● Supply chain / raw material sourcing practices
PRODUCT PERFORMANCE	Products must meet industry standard performance specifications to ensure solutions are capable of meeting the technical requirements for packaging system integration and for consumer end-use. Performance criteria may include, but are not limited to: ● Strength ● Flexibility

	● Water vapor transmission ● Optical properties (in particular transparency & scannability)
SCALABILITY	Solutions must be scalable to meet the massive scope of the thin-film plastic pollution challenge. Factors affecting scalability include, but are not limited to: ● Raw material / feedstock input constraints ● Barriers to integrating materials within existing manufacturing operations ● Marketability and appeal to both brands and end consumers ● Minimization of unintended consequences for existing waste management systems
COST	Solutions must have a clear pathway to becoming reasonably cost competitive with traditional thin-film plastics.

COMPETITION TIMELINE

The Tom Ford Plastic Innovation Prize is structured into two rounds occurring over approximately two years, followed by approximately three years of support and accelerator services for competition winners and other high-performing teams. The timeline for the competition is outlined below, along with activities, deliverables, and milestones (the latter two listed in **bold**).

PHASE	DATES	ACTIVITIES
SUBMISSION PORTAL OPENS	**MAY 18, 2021**	● Recruitment of potential competition entrants ● Informational webinars and other events for potential entrants and other stakeholders ● Announcements of additional prize partners
INITIAL SUBMISSIONS DUE	**OCTOBER 24, 2021**	● Submissions are due by 11:59 PM PDT via the competition's submission portal. ● Entrants must complete a **Submission Template** and provide information about their innovation and how it meets the competition criteria (see 'Technical Submission Round' below). ● Each Team Leader must complete the **Competition Submission Agreement** at the time of the submission. Other Team Members will sign this agreement electronically after the submission is complete. ● Teams are welcome to submit other supporting materials during the submission process.
SUBMISSION REVIEW	**OCTOBER 2021 - JANUARY 2022**	● Eligibility screening of competition submissions (52HZ) ● Review of eligible submissions, initial assessment and scoring, and judging panel summary (Scientific & Technical Advisory Board) ● Review of submissions and Advisory Board summaries (Prize Judges) ● Prize Judges, together with the Scientific & Technical Advisory Board, will convene in early 2022 to discuss the submissions and select competition finalists. ● Competition finalists will be notified before any public announcement, after eligibility verification.

ANNOUNCEMENT OF FINALISTS	**FEBRUARY 2022**	• Finalists will be announced as part of an ongoing campaign by Lonely Whale and 52HZ to highlight the competition and the solutions of competition finalists. • 52HZ will publicly release the final **Rules & Regulations** at the time of this announcement. • This document will outline specific details for the final round of the competition and will describe in detail the third-party testing protocols, including thresholds and specific metrics used to evaluate submissions.
SAMPLE SUBMISSION & TEAM SUMMIT	**FEBRUARY - MARCH 2022**	• Finalists must submit a set of **Product Samples** for lab and field analyses, the requirements for which will be outlined in the Rules & Regulations. • 52HZ will convene a **Team Summit** event to provide an opportunity for finalist teams to connect with each other and ask clarifying questions about the remainder of the competition. • See 'Final Testing Round' below for a detailed overview of the final competition round.
FINAL TESTING	**MARCH - DECEMBER 2022**	• Lab testing will be conducted in partnership with the Bioseniatic℠ Laboratory at the UGA New Materials Institute (NMI). • NMI will also help conduct the field testing in conjunction with other partner organizations, which will be announced in 2021 and detailed in the Rules & Regulations. • Prior to the end of the Final Testing Round, finalists will also complete a **Final Submission Template** with additional details about their innovation.
TEAM ENGAGEMENT & FINALIST FEATURE CAMPAIGN	**APRIL - DECEMBER 2022**	• While the final testing round is being conducted, 52HZ will spotlight competition finalists through an ongoing content series conducted in collaboration with competition partners. • The 52HZ team may conduct site visits with finalists to facilitate content capture and prize engagement. • 52HZ will also facilitate virtual pitch events, investor engagement, and corporate partnerships to provide additional support to competition finalists.
REVIEW OF FINAL SUBMISSIONS & TESTING RESULTS	**Q1 2023**	• Review of lab and field testing results, review of other final submission materials, initial assessment and scoring, and judging panel summary (Scientific & Technical Advisory Board) • Review of final submissions and Advisory Board summaries (Prize Judges) • Prize Judges, together with the Scientific & Technical Advisory Board, will convene in early Q1 2023 to discuss the finalists and make their selection of the prize winners. • At least three finalist teams will be invited to deliver a final pitch to the judges as part of the judges' final decision-making process.
WINNERS ANNOUNCED	**Q1 2023**	• The announcement of competition winners will be a significant media event, highlighting the potential of the innovations the winners put forth in the competition.

ACCELERATOR SUPPORT & SCALING INNOVATIONS	**Q2 2023 - Q4 2025**	• Prize winners will receive support from 52HZ, together with the network of partners engaged on the prize, to drive market adoption for the innovations sourced through the competition. • Such services, outlined in the 'Accelerator Support' section below, will include: mentorship and strategic support, introductions and partnership facilitation, market engagement, and solution storytelling. • 52HZ will continue to spotlight competition winners, in collaboration with competition partners, throughout the scaling support period.

Over the two rounds of the competition, teams will be asked to complete prize-specific application materials, provide supporting documentation, and participate in webinars, events, and prize marketing efforts to highlight the competition and their participation. Finalist teams will be required to submit samples for laboratory and field testing, and to participate in prize marketing efforts dedicated to spotlighting their participation and their innovation journey towards developing scalable thin-film alternatives.

Final dates for the first round of submission judging and the announcement of competition finalists will be communicated directly with entrants prior to the first round submission deadline. Dates for the final round of the competition will be announced as part of the competition Rules & Regulations.

TECHNICAL SUBMISSION ROUND

The first phase of the competition involves an initial submission where teams will be required to complete a detailed Submission Template regarding their innovation, submit white papers (where available), video footage, and supporting documentation that demonstrate teams' solutions in accordance with the competition criteria. All materials must be submitted via the competition's submission portal, linked here.

Potential competition entrants should note that all competing teams will solely own all of their intellectual property rights to their technology. Entering the competition does not transfer any right or ownership of any intellectual property to Tom Ford or 52HZ. All competition materials will remain confidential throughout the course of the competition and beyond, and all individuals and organizations formally engaged as part of the competition process will be required to disclose any potential conflicts of interests, and recuse themselves from relevant decision-making processes if deemed necessary based on these potential conflicts. Potential entrants should review the relevant sections of the Competition Submission Agreement for specific details as to the above.

Each team will need to designate a team leader who will register their team and manage the completion of the submission steps on the website. The team leader will be required to sign

and upload the prize Competition Submission Agreement at the time of their submission. Team members listed during the submission process will be emailed a copy of the Competition Submission Agreement to digitally sign after the submission is completed. Submissions must be received by October 24, 2021, 11:59 PM PDT. All team members must agree to the Competition Submission Agreement in order for the team to be eligible to be selected as a finalist and win a prize.

The Submission Template will ask teams for information about their company and for details about their innovation, such as:

- Company background and history
- Current operational scope
- Capital raised to-date (equity rounds, grants, etc.)
- Business plan / revenue model
- Overview of the proposed technology
- Current use-cases for the material and plans for future expansion
- Existing customers and partners
- Theoretical basis for why the material would meet the end-of-life requirements of the prize
- Details of any end-of-life or environmental analyses conducted to-date (biological degradation testing, lifecycle assessments, etc.)

Submissions will be reviewed by the Scientific & Technical Advisory Board and the prize Judging Panel, which is responsible for making the final decisions on advancing teams into the final round and selecting prize winners. Advisory Board members will review submissions to provide initial assessments pertaining to the technical and scientific elements of the submissions, summarizing their findings for use by the Judging Panel, who will review these materials and convene during a Judging Summit event in early 2022 to select competition finalists.

FINAL TESTING ROUND

At least five teams (up to a maximum of 10 teams) will be selected to move forward into the final round of the competition. Finalist teams will share equally in a $200,000 milestone prize purse to encourage the development of their solutions. Before being officially designated as a finalist and receiving a portion of the milestone prize purse, finalists will be subject to verification of eligibility and will sign a basic media release (details of this are available in the Competition Submission Agreement).

Shortly after their selection, finalist teams will be required to provide a finalist submission packet that includes the following:

- **Final Submission Template:** Finalists will be asked to provide an updated overview of their solution with more specific details about how it meets the prize judging criteria, in particular those elements of the criteria not assessed as part of the lab and field testing protocols.
- **Product Samples:** Finalists will be required to provide a set of product samples to undergo lab and field testing to demonstrate their performance against the biological degradation and product performance judging criteria.

The lab and field testing will include the following components:

ANALYSIS	PURPOSE
SOIL RESPIROMETRY	• Respirometry measures the rate and process by which materials break down and degrade under controlled conditions. • Respirometry is used in assessing biological degradation under various biodegradation standards protocols from organizations such as TUV and ASTM. • The prize will include analyses conducted in both soil and seawater "inoculum" to understand biological degradation under conditions analogous to the two most important mismanaged end-of-life environments.
MARINE RESPIROMETRY	
GERMINATION	• Germination analysis is designed to measure the toxicity of the remaining soil inoculum left after soil respirometry is completed.
MICROPLASTICS ANALYSIS	• Soil and marine respirometry inocula will be analyzed using microscopy and spectroscopy to test for the presence of microparticles and microplastics after the process of biological degradation of each sample is completed.
MARINE FIELD TESTING	• Marine field testing will be conducted to analyze biological degradation and impacts in environmental conditions where the products may end up under mismanaged waste scenarios.
PRODUCT PERFORMANCE	• In-lab product performance testing will consist of a series of tests to assess the strength, flexibility, and water vapor permeability of the samples. • Tests conducted may include, but are not limited to: Tensile Testing and Water Vapor Transmission Rate analyses.

Respirometry and field analyses will be conducted over an eight-month period. The germination analysis is conducted over a 30-day period following respirometry, and the remaining tests are point-in-time analyses. Submission requirements for product samples and detailed testing protocols will be outlined in the Rules & Regulations, which will be released at least 30 calendar days prior to the official commencement of the final round of the competition (defined as the date by which finalist teams are required to submit samples of their materials for analysis). These testing protocols will include specific details for the respirometry analyses, including the composition of the inocula and the temperature utilized in the analysis, as well as details about the marine field testing, including the location(s) and

testing parameters. It should be noted that although the testing protocol outlined above is designed to be rigorous and challenging, the Advisory Board will develop the final testing standards to encourage the participation of early stage companies; while product end-of-life performance is a main focus of the prize, the judging criteria are designed to be holistic and comprehensive to ensure that a variety of factors inform the final decision-making process.

The Judges will select a Grand Prize Winner, as well as 2nd and 3rd place prize winners, in consultation with the Scientific & Technical Advisory Board as well as the Prize Investment Alliance (defined below in the 'Prize Stakeholders & Review Bodies' section). The decision-making process for Judges will hew to the process utilized for the first round of the competition, with the Advisory Board conducting a detailed review of the technical elements of the submissions, including the results from lab and field testing. Judges will review these assessments and also consult with the Prize Investment Alliance as to the market viability and business planning of the finalist teams. This decision-making process will culminate in a final Judging Summit event, where at least three finalist teams will be invited to deliver a final pitch to the judges prior to the final prize winner determinations.

ACCELERATOR SUPPORT

After the final determinations are made regarding prize winners, the competition will transition into an accelerator phase where 52HZ, together with the network of partners engaged on the prize, will work to drive market adoption for the innovations sourced through the competition. Companies will work closely with the 52HZ team to tap into relevant resources that can help ensure successful market adoption and rapid scaling before the end of 2025.

These services conducted by 52HZ and prize partners will be tailored to the specific needs of the Prize winners and are envisioned to include, but will not be limited to, the following:

- **Mentorship & Strategic Support** - Serve as a trusted advisor to competition teams as they navigate the complexities of scaling their leadership presence and management team, technologies and manufacturing capabilities, and other areas of need to ensure their company and solution can effectively scale.
- **Introductions & Partnership Facilitation** - Connect prize innovators with potential partners to help address challenges and build new business relationships. This includes connecting with investors, subject matter experts, NGOs, potential brand partners, providers of business advisory services, etc.
- **Market Engagement** - Provide consumer and market insights, support development of strategic marketing and communications plans, facilitate B2B introductions, consult on digital and social engagement, campaigns, events, activations, etc.

- **Solution Storytelling** - Ensure a focus remains on the Prize winners and their efforts after the competition phase concludes. This is envisioned as a series of written and video case studies on each Prize winner that tells the story of the team and the winning solution, working with digital partners and media outlets to facilitate distribution of these stories. Provide a platform for competing teams to connect with supporters (customers, partners, investors, etc.) through webinars, virtual and in-person pitch events, etc.

The above activities will commence after prize winners are selected and will continue through 2025, with the details of specific activities based on both the needs of individual participants as well as the state of the overall market and the adoption of competitor technologies. Note that in addition to the services provided to prize winners, 52HZ may at its discretion extend portions of the accelerator support services to other high-performing competition entrants who were not selected as a prize winner.

PRIZE PURSE & AWARDS

The total prize purse available for competitors in the Tom Ford Plastic Innovation Prize is $1.2 million, divided as follows:

Milestone Awards
Finalist teams will share equally in a $200,000 milestone prize purse to encourage the development of their solutions. Up to 10 teams will be selected to move forward to the final round of the competition.

Grand Prize Awards
The $1 million grand prize purse will be awarded as follows:

- *Grand Prize Winner:* $600,000
- *2nd Place:* $250,000
- *3rd Place:* $150,000

These amounts will be deployed as investment capital in the form of a Simple Agreement for Future Equity (SAFE), the details of which are linked in the Competition Submission Agreement required to be completed by prize entrants.[32] This approach was chosen in order to encourage the scaling of innovations put forward in the competition and to crowd-in outside investment capital.

[32] In the unlikely event that one of the prize winners is a publicly-traded company, the prize award investment will be made in the form of a purchase of the prize winner's publicly traded securities.

As outlined above in the Accelerator Support section, in addition to the milestone and grand prize awards, 52HZ, together with the prize Judges, Advisory Board, Investment Alliance, and other partners with relevant expertise, will support finalists as they continue to raise capital and build relationships to help scale their innovations. The value of such services are not factored into the overall prize purse amounts provided by the competition.

PRIZE STAKEHOLDERS & REVIEW BODIES

The success of the prize is made possible by the engagement and support of a variety of stakeholder groups, some of whom have been discussed above. Below we provide more details on the respective roles and composition of each of these stakeholders. In addition to their formal role on the prize, these groups, together with the broader ecosystem of partners engaged on the prize, will help support the prize through:

Amplification & Team Recruitment
Highlighting the prize opportunity within complementary networks and helping encourage innovators to join the competition.

Advisory Services & Team Support
Advising teams and supporting their innovation journey by participating in events, mentorship, facilitating introductions, and other services.

Market Adoption & Scaling
Partnering with prize winners to implement their thin-film alternatives into existing supply chains and manufacturing, collaborating on marketing and policy engagement, and facilitating further investment and revenue growth.

PRIZE JUDGES

Composed of industry leaders, influencers, and scientists who will champion market adoption of thin-film alternatives, judges for the Tom Ford Plastic Innovation Prize serve as a high-level review body tasked with selecting competitors best positioned for growth. Judges for the prize are capable of bringing world-changing influence and spotlighting solutions in a way that traditional approaches can rarely attain.

The prize judging panel will be tasked with not just assessing the prize submissions against a set of criteria, but more importantly will be called upon to help identify pathways for scaling the promising innovations that emerge through the competition and to raise awareness about the issues surrounding thin-film plastic. As such, the judging panel for the competition will be composed of individuals who are positioned to bring to bear expertise surrounding the practicalities of influencing consumer behavior change and policy reforms, integrating new solutions into existing supply chains and business models, and raising capital.

Judges will be responsible for choosing prize finalists and winners, in conjunction with the prize Scientific & Technical Advisory Board, who will conduct an initial review and summary

of the prize submissions. The Prize Investment Alliance will also provide input as to competitors' market viability during the final round of the competition.

SCIENTIFIC & TECHNICAL ADVISORY BOARD

The prize Scientific & Technical Advisory Board is tasked with ensuring that winning solutions meet clear environmental standards at both production and end-of-life and are positioned for market adoption by meeting performance and scalability criteria.

As such, the Advisory Board for the competition will be composed of a diverse set of individuals from academia, NGOs, industry, and the investment community, who bring to bear world-leading expertise in at least one key area:

- Materials Science
- Marine Science & Marine Pollution
- Packaging Design & Materials
- Corporate Supply Chain Logistics & Manufacturing
- Product Adoption & Investment

The composition of the Advisory Board will constitute an approximately equal mix of individuals from the above categories, with some accounting for the fact that members may have expertise in multiple areas.

This expert body will be tasked with conducting an initial analysis of prize submissions and reviewing the results of third-party testing conducted during the final round of the competition.

Along with helping drive decision-making for the two judging rounds of the competition, advisory board members will also provide input on the prize judging criteria and third-party testing protocols, as well as serving as a resource for competitors.

PRIZE INVESTMENT ALLIANCE

The Prize Investment Alliance consists of business and technology leaders with expertise in venture capital, finance, impact investing, entrepreneurship, marketing, and technology commercialization. The Alliance will advise the Judges on the business model, market viability, and financing of finalist submissions, and will help provide investment capital for the prize winners.

In addition, the Alliance will enhance the visibility of the competition within industry and the investor community, and provide advice on developing partnerships with major brands and investors to help facilitate the scaling and adoption of finalist technologies.

IMPLEMENTATION PARTNERS

The broader ecosystem of potential partners and supporters have a critical role to play in helping the prize drive market adoption, scale, and ultimately achieve a meaningful impact on the volume of thin-film plastic reaching our oceans.

The prize has engaged a broad network of partners, including impact investors, NGOs, scientific experts, corporations, and major brands, to help support the activities outlined above to accelerate adoption of competition technologies through outreach, business mentorship, and supply-chain partnerships.

52HZ continues to actively recruit business implementation partners to drive engagement for the scaling and market adoption phase of the prize. Early adopters of the thin-film alternatives that emerge through the competition are integral to its success. Trials, tests, proof of concept activities, and advance market commitments, can demonstrate market demand for these alternatives and provide innovators with a pathway for business partnerships with organizations on the vanguard of corporate sustainability.

Implementation partners have the unique opportunity to drive impact at scale within their own supply chains and beyond. Early adopters will make a commitment to implement the alternative material and will receive a host of benefits over the cycle of the prize to include:

- Brand/product inclusion in a press release
- Social media activations across our social networks
- Logo inclusion in online and print materials
- Earned media, thought leadership and speaking opportunities over the cycle of the prize

52HZ

The Tom Ford Plastic Innovation Prize is powered by 52HZ, an advisory services arm of Lonely Whale. 52HZ helps NGOs, brands, and influencers create strategies for building movements in support of our ocean and environment. Leveraging Lonely Whale's experience building strategic, data-driven campaigns, 52HZ is helping others spark global shifts in behavior and attitude by making issues culturally relevant and inspiring.

HOW TO GET INVOLVED

ENTER THE COMPETITION

Do you have the solution to the thin-film plastic crisis? Enter the competition by visiting https://plasticprize.org and clicking 'Submit' to begin your submission, or jump straight to the competition's submission portal by clicking here.

All initial competition submissions must be received by October 24, 2021.

BECOME A PARTNER

Are you or your organization using thin-film plastic in your supply chain? Are you an investor interested in themes around material innovation, ocean health, and/or climate change? Do you represent an NGO working on plastic pollution? Reach out to us at info@plasticprize.org.

SPREAD THE WORD

Care about plastic pollution? Help us spread the word and make sure innovators around the globe know about this opportunity. You can stay engaged with the prize on social media (below), and make sure to sign up for the ***prize newsletter*** by visiting https://plasticprize.org.

- Instagram
- Facebook
- Twitter
- LinkedIn

For the ocean.

Version 1.0, published 18 May 2021