

## Three simultaneous global crises need solutions



- Eastman is leading the way in providing solutions to three global crises that are occurring simultaneously. Starting with plastic waste, each year more than 300 million tons of plastic are produced globally and only about 15 percent is recycled today. Estimates are that roughly 25 percent is incinerated, about 40 percent is landfilled, and about 20 percent leaks into the environment including into our oceans. This problem is too big for one stakeholder to solve industry, government, NGOs, and others must work together to solve this crisis. Eastman is well positioned to contribute to the solution by showing what is possible with innovation, proving that molecular recycling is scalable, economically viable, and can reduce carbon emissions.
- On climate change, the debate is over the question is what we together are going to do to address this crisis. Last August, our Board of Directors committed Eastman to take action to be in accordance with the Paris Climate Agreement. And in our 2020 Sustainability Report issued in December of last year, we committed to achieving carbon neutrality by 2050. We have already made substantial progress by reducing our greenhouse gas intensity from our 2008 baseline by 20 percent in 2019. We have a more aggressive goal to reduce our absolute greenhouse gas emissions by 30 percent by 2030, and our molecular recycling technologies are part of the solution.
- And on population growth, once again Eastman is contributing to the solution. Our products are helping to hydrate, feed, and care for the growing population in a sustainable way.



- Interrelated to these global crises are the macro trends you see on this slide. These topics are not new for Eastman – in fact, for over a decade, we've placed sustainability at the heart of how we innovate new products.
- Starting with caring for society, as the global population drives inevitably towards 10 billion people, we remain dedicated to the transparency and product safety of all our materials. One example is Eastman Tetrashield<sup>™</sup> protective resin, which enhances the performance of bisphenol-A non-intent (BPA-NI) metal food and beverage packaging coatings. We have also recently launched several specialty products to support feeding a growing population, including Keitex<sup>™</sup> feed preservation additive for Salmonella control, which replaces formaldehyde-based products, and encapsulated butyrate and phytogenic products for antibiotic-free gut health solutions. And we are leading with low substance of concern resins for adhesives.
- We are addressing climate change with both the actions we are taking to reduce our carbon footprint in our operations and by providing products that enable our customers and consumers to reduce their carbon footprint. As we set our path to support the Paris Climate Agreement, we expect to achieve one-third of our target by 2030. These reductions will be driven by continued energy efficiency – and we are an eight-time 'Partner of the Year' with the EPA's ENERGY STAR® program. One of the ways that we've achieved this recognition is by switching out power boilers from coal to natural gas. Also driving the carbon reductions are process transformations, including the impact of our molecular recycling technologies, as well as renewable energy which we use today and are also supporting the development of offsite renewable projects. And finally, we are partnering with universities and national laboratories to enable the development of nascent and breakthrough technologies that can be deployed at scale to meet the demands of industrial decarbonization.
- We are also contributing to our customers achieving their goals to reduce greenhouse gas emissions. For example, our interlayer products are enabling the lightweighting of cars, our films are reducing the air conditioning load, and our tire additives are improving fuel efficiency. Each of these products will be even more important in electric vehicles. Our films are used to improve the energy efficiency of buildings, and we are launching a new bio-based cellulosic building insulation to replace expanded polystyrene insulation (EPS) that will also have recycled content.
- On circularity, we recognize that there is a need to provide solutions to the plastic waste issue. We have therefore launched two molecular recycling technologies at scale and are in launch with multiple products in many markets leveraging our scale and integration to enable a truly circular economy. We will talk more about this in subsequent slides.

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- While there is a significant debate about the role of plastics in our society, plastics are recognized to be a critical contributor to improving our overall quality of life. This contribution is even more powerful when combined with a focus on the 3R model of Reduce, Reuse, and Recycle. And plastics are fundamental to addressing some of the most pressing global problems.
- For example, there are over 2.2 billion people today who don't have access to clean drinking water, and as population growth continues, this number is expected to grow. Even though we exited the PET single-use packaging business about a decade ago, we recognize that there are single-use plastic applications that are important in this space. The durability of many of Eastman's products enable the 'Reuse' part of the 3Rs in applications such as our Tritan™ Renew in hydration bottles, which are playing an important role in reducing single-use plastic.
- Feeding a growing population is also a fundamental need, and advanced packaging technologies can help get food to people and keep it fresh preventing spoilage, which is a major source of greenhouse gases. According to *The Economist*, for every ton of food wasted, the equivalent of 1 to 2 times as much carbon dioxide is emitted as the packaging itself. Similar to hydration, we are focused on reusable food storage products, but we also recognize that advanced single-use packaging reduces food spoilage. Plastics have also been critical to facilitating innovation in medical devices and driving down the cost of health care.
- Lastly, substituting plastic with other materials such as aluminum, glass and multilayer paper packaging is not necessarily the best solution for the environment. Aluminum and glass processes in many applications are more energy intensive compared to plastic on a volume basis despite higher recycling rates. And if industry can drive molecular recycling to scale, the greenhouse gas footprint for plastics would become significantly better than aluminum and glass. Multilayer paper packaging usually includes coatings and plastic film layers that make it very difficult to recycle and increase the carbon footprint. One other point is that plastics are more affordable than glass, aluminum, or multilayer paper for the parts of the global population that are economically disadvantaged – a serious challenge as we improve the quality of life for everyone around the world.
- For these reasons, in many applications, plastics are the preferred choice for the environment.



- There are many companies and organizations that recognize they must contribute to addressing the global plastic waste crisis. One important example is the New Plastics Economy Global Commitment led by the Ellen MacArthur Foundation. Signatories include companies, governments, NGOs, and others. Eastman is a signatory, as are many of the global brands that are represented on this slide. You'll see that many different markets are represented – from fast-moving consumer goods to technology to transportation to textiles.
- Each of these companies is making a meaningful commitment to increase the amount of recycled plastics in their products – and many of these goals are expected to be achieved by 2025. There are many more companies that have made commitments from many other industries. As a result, we estimate the total market for recycled plastic products beginning in a few years is in the hundreds of billions of dollars. And while Eastman's entitlement within that market is relatively small on a percentage basis, there is a significant opportunity to drive growth for our specialty products in durables end markets – and play a leadership role in addressing the plastic waste crisis by showing the world what is possible.
- One of the greatest challenges in achieving these goals and going further is
  accessing plastic waste in a usable form. We will need an all-of-the-above solution
  to build out the recycling infrastructure.

## Both mechanical and molecular recycling are required to eliminate waste and create a truly circular economy

	MECHANICAL RECYCLING Most carbon efficient when possible	+	MOI	<b>LECULAR RECYCLING TECHNOLOGY</b> ecessary to renew material and avoid end of life
Ò	Optimal GHG footprint, existing infrastructure		D)	Eastman technologies deliver an improved GHG footprint when compared to processes using fossil feedstocks
ÎÌ	Limited to clean sources; majority must be downcycled or not recycled at all			Can recycle materials that have little value or can not be mechanically recycled
	Performance and quality limitations		<b>A</b> →	No performance tradeoffsupcycles the material back to premium quality / performance
	Quality degrades with each cycleeventually, everything becomes waste	C	$\infty$	Enables infinite ability to recycle polymer for a truly circular economy
				ΕΛSTΜΛΝ

- To enable a truly circular economy and for brands to meet the commitments they are making to reduce plastic waste, both mechanical and molecular recycling are required. As was indicated earlier, today only about 15 percent of waste plastic is recycled. When possible, mechanical recycling should be used first as it is the most carbon efficient recycling method. Given the scale of the crisis, mechanical recycling is without question a necessary part of the solution. However, there are limitations to how much mechanical recycling can solve. First, if you want to recycle material back into high-value products, you are limited to using clean and mono plastic sources, and the rest will still become waste. Second, there are serious performance and quality limitations to this method, which is part of the reason that more plastic waste isn't recycled today. Most importantly, each time plastic waste is used in a mechanical recycling process it, degrades. The result is that eventually material that is mechanically recycled becomes waste itself.
- Molecular recycling technology addresses the majority of plastic waste that has little value or can't be mechanically recycled, and therefore is necessary to renew all material and avoid end of life. Although not as advantaged as mechanical recycling, the carbon footprint for some molecular recycling technologies can be attractive when compared with using fossil feedstocks. For example, our polyester renewal technology reduces greenhouse gas emissions by between 20 and 30 percent compared with processes using fossil feedstocks. Our molecular recycling technology can also use plastic waste that is thought to have little value or can't be mechanically recycled. Molecular recycling returns plastics to purified intermediates that are identical to the fossil feedstock-based approach, so the recycled plastic is identical to what customers are currently using, making transition very easy and affordable. We are upcycling material with our molecular recycling technology to its highest value - for us, this means durable applications where the product is reused repeatedly, keeping our natural resources in use longer. And, by taking the plastic back to intermediates, there is no degradation, which means that there is an infinite ability to recycle plastic for a truly circular economy.
- Molecular recycling is required to enable a circular economy. A mechanical-only recycling system is an improvement over today, but it can't displace the functionality of virgin material.



## Over the past year, as we've been discussing our molecular recycling technologies with investors, one consistent question has been whether we can achieve a price premium to fund our solutions to the plastic waste and climate challenges. Given the recognition by consumers and others of the plastic waste crisis, the actions that governments have taken and are considering taking, plus the commitment that global brands are making, we believe that consumers will pay a premium for products with recycled content.

- There are many examples of this, and we've depicted several of them on this slide. The first is a comparison of the price of Western European food-grade recycled PET to virgin PET derived from fossil feedstocks. Back in 2018, recycled PET was at a discount to virgin PET. In 2019, this changed to about a 40 percent premium, and in 2020 the premium had grown to about 75 percent. This is a clear indication that the market is willing to pay more for a recycled alternative.
- There are several other examples on the right side of the slide. The first compares two water bottles from our customer, Nalgene. The one on the left is made with Eastman Tritan® copolyester and the one on the right is made with Tritan® Renew. You can see there is a 25 percent retail price premium for the bottle with Tritan® Renew. The next example compares coffee makers from Philips, with the energy efficient version using 50 percent post-consumer recycled content priced at a 20 percent premium. And finally, for the two Nike shirts, the one with 50 percent recycled PET is commanding a 25 percent retail premium price. These are just a few examples of the price premium that is already in the market today and we are confident is sustainable.



- While we have two different technologies, today we are going to focus on our polyester renewal technology (PRT). This is a technology that Eastman has about 40 years of experience with, beginning back in the 1970s. On the front end, we use PET waste not typically used by mechanical recycling as a feedstock, including colored PET, films, and fibers from textiles, carpets and other sources. We then return this waste back to the monomers. Those monomers are then used to manufacture Eastman polymers.
- Our polyester renewal technology reduces greenhouse gas emissions by between 20 and 30 percent when compared to processes using fossil feedstocks. And we have completed a life cycle analysis (LCA) for our polyester renewal technology that is currently being reviewed by a third party. We expect this review will be completed in the first quarter of 2021.
- Depicted on the right side of the slide is how PRT will accelerate our growth in both existing and new markets. Since the launch of our first commercial product with recycled plastic waste over one year ago, there has been very strong customer engagement. We are in over 100 customer trials and have had several brand launches such as Nalgene and CamelBak. We are on track for many more customer launches this year. In existing markets such as hydration, cosmetic packaging, food storage, appliances, and medical, we are winning new applications, accelerating our growth in current applications, and achieving premiums. Our recycled offers are also opening doors in new markets such as electronics, toys, and automotive. At the heart of our innovation-driven strategy is delivering above-market growth with high-value products, upgrading our mix. As a leader in the circular economy, we are translating and extending our competitive advantage.

Eastman to build one molecular recycling fa Taking the next step on our c	of the world's l acilities ircular economy jour	argest plastic to	o plastic
2021-2022: ~\$250	M capital investment	ROIC >15%	
<ul> <li>Polymer intermediate capacity to make 150 – 200 kmt of polymer</li> <li>Unique ability to use low-quality / low-cost feedstocks</li> </ul>	<ul> <li>Begin construction mid-year 2021</li> <li>Mechanical completion expected by year-end 2022</li> </ul>	<ul> <li>Advantaged scale and integration, including carbon renewal technology</li> <li>Product mix upgrade over time</li> <li>Option to add capacity as adoption gains momentum</li> </ul>	
Expect molecul >\$600M of new	ar recycling initiatives business revenue in th	to contribute to e coming years	EASTMAN
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- We have made great progress with our circular economy initiatives over the past two years, and we believe the time is right for Eastman to take the next major step. Today, we are announcing a significant capital investment for a new methanolysis facility to be built at our largest manufacturing site located in Kingsport, Tennessee.
- This facility will provide intermediates that will enable production of between 150 and 200 kmt of polymer production, depending on product mix. Given the demand for recycled material, the flexibility of this technology to use a variety of plastic waste as a feedstock, the attractive greenhouse gas footprint relative to deriving the monomers from fossil feedstocks, and importantly, the price premium that consumers are willing to pay, we feel the time is right.
- The feedstock for this facility will be hard-to-recycle plastic waste. We are confident that we can procure this feedstock given that we will use diverse plastic waste and that we have identified sources for procuring it. As we add additional capacity over time, we will continue to work with a variety of stakeholders in this area to increase and improve the recycling infrastructure for the sorting and distribution of plastic waste.
- We expect construction to begin in the middle of this year and for the facility to be mechanically complete by year-end 2022. The investment is expected to be approximately \$250 million, and the state of Tennessee has agreed to incentivize the construction of this facility in Kingsport. As a result, we believe Tennessee will become a leader in enabling the circular economy and an example for others to follow.
- Eastman is uniquely positioned to leverage our existing integration, which remains an important source of value. For this project, our highly integrated site in Kingsport, including the co-location of our polyester renewal and carbon renewal technology assets, results in our ability to take lower-quality polyester waste for our PRT facility and use the material which isn't polyester in our CRT facility – no one else has this advantage. In addition, our integration and scale are enabling the reduction of our capital costs versus our competitors that don't have our integration advantage.
- Given our experience in specialty markets and the ability to use excess capacity in packaging, we expect to be able to start this facility at a higher-than-normal utilization level. We will then upgrade the mix of the markets we serve over time. Taking into account all of the contributors to attractive economics for this investment, we expect the return on capital to be above the high end of the 10-15 percent range that we expect for all of our investments.
- In addition, we expect our circular economy initiatives to make a meaningful contribution to corporate revenue growth going forward, and as a result we expect our corporate new business revenue to be greater than \$600 million in the coming years.
- With this investment, we expect to demonstrate to all stakeholders that a solution to the plastic waste crisis is possible with an attractive return.



- As indicated previously, Eastman is committed to the Paris Climate Agreement, and our molecular recycling technologies are an important component of how we intend to achieve our goals. By using over 110 kmt of plastic waste as a feedstock, we are keeping it from being disposed in landfills, from being incinerated, or from ending up in the environment. It's the equivalent of almost 11 billion water bottles, 790 million polyester shirts, or 2.7 billion shampoo bottles.
- Also, by reducing greenhouse gas emissions by between 20 and 30 percent compared to processes using fossil feedstocks, we are removing more than 45,000 metric tons of CO2 – the equivalent of CO2 emissions from 115 million miles driven. All of this occurs while the end product from this process is essentially the same as a product produced from traditional fossil feedstocks – so there is no compromise on product functionality or quality. And the recycling process enables an infinite ability to recycle polymers for a truly circular economy.
- We also recognize that the global challenges of plastic waste and climate change are much greater than can be addressed with our first molecular recycling facility. As you would imagine, there are potential partners around the world who are very interested in collaborating with us on how to bring our innovative solutions to other regions, particularly in Europe. We will provide additional details as we have new developments.



- We are excited about the contribution that Eastman is making to enable a truly circular economy today. Eastman is uniquely positioned to lead by demonstrating that there are credible solutions to the plastic waste crisis we are doing it at scale today and proving it is economically viable.
- With this investment, we are taking a significant step forward in what will be a journey to solve this crisis. And this is just the beginning. We are actively working on our next step forward with our circular economy initiatives, including collaborations with others and direct investments in Europe and Asia.
- We expect to use ~250 million pounds of plastic waste annually by 2025 and ~500 million by 2030. While we are focused on the plastic waste crisis, we are also focused on the climate crisis. To that end, we are committed to reducing our absolute greenhouse gas scope 1 and 2 emissions by one-third by 2030 to achieve carbon neutrality by 2050. And we will not move forward with a technology that does not have a better carbon footprint than traditional technologies.
- This facility will help us to address all three of the macrotrends that we highlighted earlier and we can make an attractive return on our investment while doing so.