

DOW

DOWFRIENDS

Newsletter

Great Place To Work® and Fortune names Dow one of the World's Best Workplaces™ in 2023

Great Place To Work® (GPTW) and *Fortune* have honored [Dow](#) as one of the [World's Best Workplaces™ in 2023](#).

Great Place To Work® honors
Dow as one of *Fortune's*

**World's Best
Workplaces™
in 2023**



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Howard Ungerleider to retire from Dow; Jeffrey L. Tate named chief financial officer

Dow has announced that Howard Ungerleider has elected to retire from the Company to pursue new opportunities following 33 years of service with Dow.

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Dow's Board of Directors approves Final Investment Decision for Path2Zero Project

- ◆ *Brownfield investment in Fort Saskatchewan, Alberta, will be the world's first net-zero Scope 1 and 2 emissions ethylene and derivatives complex*
- ◆ *Delivers 2 million MTA of organic growth in attractive, high-end markets while decarbonizing 20% of Dow's global ethylene capacity*
- ◆ *\$1 billion of EBITDA growth expected at full run rates over the economic cycle; expected to be one of Dow's most cost-competitive sites in the world*
- ◆ *Eliminates 1 million MTA of CO₂e by converting hydrogen from cracker off-gas as a clean fuel as well as CO₂ capture and storage*
- ◆ *Best-owner mindset leverages additional \$2 billion of investment from third-parties for circular hydrogen, CO₂ capture, and other infrastructure assets*
- ◆ *Subsidies and incentives from federal, provincial, and local authorities support Dow's targeted returns*



Dow announced that its board of directors has declared Final Investment Decision on the Company's Fort Saskatchewan Path2Zero investment to build the world's first net-zeroⁱ Scope 1 and 2 emissionsⁱⁱ integrated ethylene cracker and derivatives facility in Alberta, Canada.

The \$6.5 billion project, excluding governmental incentives and subsidies, includes building a new ethylene cracker and increasing polyethylene capacity by 2 million MTAⁱⁱⁱ as well as retrofitting the site's existing cracker to net-zero Scope 1 and 2 emissions. The investment is expected to deliver \$1 billion of EBITDA growth per year at full run rates over the economic cycle while decarbonizing 20% of Dow's global ethylene capacity.

This new capacity will enable Dow to capture growing customer demand in high-value markets, such as packaging, infrastructure and hygiene, among others, with potential additional value captured from commercializing low and zero-emissions products. The project builds on Dow's expertise in successfully implementing large projects, such as its TX-9 cracker in Freeport, Texas, which has delivered more than 15% return on invested capital since its 2017 start-up through best-in-class capital intensity, conversion cost, and low emissions intensity.

The board's approval enables the Company to begin construction in 2024. Capacity additions are expected to come online in phases, with the first phase starting up in 2027, adding approximately 1,285 KTA^{iv} of ethylene and polyethylene capacity, and the second phase starting up in 2029, adding an additional approximately 600 KTA of capacity.

To achieve net-zero Scope 1 and 2 emissions, [Linde](#) will supply the Fort Saskatchewan Path2Zero project with the required industrial gasses from a new air separation, pressure swing absorption, and autothermal reformer complex that they will build at the site. This will also recover and convert the site's cracker off-gas to hydrogen, which will be used as a clean fuel in the site's furnaces. In addition, carbon dioxide emissions will be captured and stored, reducing existing emissions by approximately 1 million MTA of CO₂e while abating all emissions from the addition of the site's new capacity.

The Canadian and Alberta Advantage

Dow selected the Fort Saskatchewan site for this investment as Western Canada offers highly cost-competitive natural gas relative to other regions, as well as cost-advantaged ethane, a key feedstock for ethylene production. At full run-rates, the site is expected to be one of Dow's most cost-competitive in the world. The region also features access to existing CO₂ transportation and storage infrastructure with available capacity to fully support decarbonization of the project. It is home to a high-class workforce and Dow has been part of the community for more than 60 years.

Additionally, the governments of Canada, Alberta, and Fort Saskatchewan have made subsidies and incentives available to support this project and to drive innovation in low-emissions manufacturing in Canada. It will be the first project to access Canada's new ITC program.

Dow's investment leverages approximately \$2 billion of investment from third-party companies for circular hydrogen, CO₂ capture, and other infrastructure assets critical to the project execution. Earlier this year, Dow [announced](#) that Linde had been selected as its industrial gas partner for the supply of clean hydrogen and nitrogen for the site, and [Fluor](#) (NYSE: FLR) was selected for front-end engineering and design. Additionally, Dow is partnering with Wolf Midstream, which will provide CO₂ transportation along the Alberta trunk line, and with Ravago which will provide third-party logistics for finished products from the site.

Attributable Quotes

Jim Fitterling, Dow Chair and CEO

- ◆ "The project serves as a leading example that industrial decarbonization is both possible and profitable."
- ◆ "The opportunity to decarbonize our assets while driving growth is central to Dow's business strategy. All our stakeholders benefit from this investment – creating value for our customers and shareholders, new opportunities for our employees, economic growth for the community, and fewer greenhouse gas emissions for the environment."

Karen S. Carter, Dow President, Packaging & Specialty Plastics

- ◆ "This investment paves the way for growth of our entire Packaging and Specialty Plastics portfolio. It gives us the opportunity to become the industry's first provider of zero-emissions products and solutions. Our commitment to innovation and designing products for circularity allows us to meet the evolving needs of our customers across growing sectors such as packaging, infrastructure, and hygiene, among others."
- ◆ "Plastics have long been recognized for their environmental advantages, with a greenhouse gas footprint that is typically less than half of alternative materials. With this strategic investment and our commitment to transform plastic waste to create circular and renewable solutions, we are poised to achieve even greater reductions in emissions, empowering our customers to make significant strides in their sustainability efforts."

Diego Ordonez, Dow Canada President

- ◆ "This project will have a profound positive impact on our employees and the community, creating jobs and economic opportunity while positioning the region to be a leader in low emissions manufacturing. Our collaboration with government officials, the community of Fort Saskatchewan, our Indigenous neighbors, and the host of partner companies involved has been key to enabling this investment to move forward."

Danielle Smith, Premier of Alberta

- ◆ "This investment by Dow is further evidence of the opportunity that exists in Alberta. We are proud that Dow has chosen to build and launch their project here. This project does not just mean net-zero emissions, it means more jobs and a stronger economy. I look forward to the next steps, including construction starting next year."

ⁱ Inclusive of Scope 1 and 2 emissions

ⁱⁱ Carbon emissions refer to GHG emissions in CO₂e

ⁱⁱⁱ MTA refers to metric tonnes per annum

^{iv} KTA refers to kilo tonnes per annum

[Link to online article](#)

Dow reports third quarter 2023 results

FINANCIAL HIGHLIGHTS

- GAAP earnings per share was \$0.42; operating earnings per share (EPS)¹ was \$0.48, compared to \$1.11 in the year-ago period and \$0.75 in the prior quarter. Operating EPS excludes significant items in the quarter, totaling \$0.06 per share, primarily related to costs associated with the Company's 2023 Restructuring Program.
- Net sales were \$10.7 billion, down 24% versus the year-ago period, reflecting declines in all operating segments due to slower global macroeconomic activity. Sales were down 6% sequentially, as volume gains were more than offset by lower local prices.
- Volume decreased 6% versus the year-ago period, mainly due to declines in the merchant Hydrocarbons & Energy sales. Sequentially, volume increased by 1%, and was up 3% excluding merchant Hydrocarbons & Energy sales, with gains across all operating segments.
- Local price decreased 18% year-over-year, with declines in all operating segments and regions, primarily due to lower feedstock and energy costs. Sequentially, local price was down 7%, primarily reflecting lower prices in Europe, the Middle East, Africa, and India (EMEA).
- Currency was flat year-over-year and sequentially.
- Equity losses were \$7 million, compared to equity losses of \$58 million in the year-ago period and \$57 million in the prior quarter, with improved results at all of the Company's principal joint ventures, primarily Sadara.
- GAAP net income was \$327 million. Operating EBIT¹ was \$626 million, down from \$1.2 billion in the year-ago period, primarily driven by lower local prices. Sequentially, Op. EBIT was down \$259 million, driven by declines in Packaging & Specialty Plastics and partially offset by Industrial Intermediates & Infrastructure and Performance Materials & Coatings.

- Cash provided by operating activities – continuing operations was \$1.7 billion, down \$282 million year-over-year and up \$311 million compared to the prior quarter. The Company delivered cash flow conversion¹ of 103% on a trailing 12-month basis.
- Returns to shareholders totaled \$617 million in the quarter, including \$492 million in dividends and \$125 million in share repurchases.

SUMMARY FINANCIAL RESULTS

<i>In millions, except per share amounts</i>	Three Months Ended September 30			Three Months Ended June 30	
	<u>3Q23</u>	<u>3Q22</u>	<u>vs. SPLY</u> <u>[B / (W)]</u>	<u>2Q23</u>	<u>vs. PQ</u> <u>[B / (W)]</u>
Net Sales	\$10,730	\$14,115	\$(3,385)	\$11,420	\$(690)
GAAP Income, Net of Tax	\$327	\$760	\$(433)	\$501	\$(174)
Operating EBIT¹	\$626	\$1,195	\$(569)	\$885	\$(259)
Operating EBIT Margin¹	5.8%	8.5%	(270) bps	7.7%	(190) bps
Operating EBITDA¹	\$1,283	\$1,863	\$(580)	\$1,534	\$(251)
GAAP Earnings Per Share	\$0.42	\$1.02	\$(0.60)	\$0.68	\$(0.26)
Operating Earnings Per Share¹	\$0.48	\$1.11	\$(0.63)	\$0.75	\$(0.27)
Cash Provided by Operating Activities – Cont. Ops	\$1,658	\$1,940	\$(282)	\$1,347	\$311

CEO QUOTE

Jim Fitterling, chair and chief executive officer, commented on the quarter:

“In the third quarter, Team Dow continued to advance our long-term strategy while also taking proactive actions to reduce costs and maximize cash generation in a challenging macro environment. Despite higher sequential feedstock costs, we continued to implement targeted actions to deliver \$1 billion in cost savings in 2023. Operating cash flow of \$1.7 billion improved \$311 million sequentially, and enabled more than \$615 million in returns to shareholders, reflecting our continued disciplined and balanced approach to capital allocation.”

SEGMENT HIGHLIGHTS

Packaging & Specialty Plastics

<i>In millions, except margin percentages</i>	Three Months Ended September 30			Three Months Ended June 30	
	<u>3Q23</u>	<u>3Q22</u>	<u>vs. SPLY</u> <u>[B / (W)]</u>	<u>2Q23</u>	<u>vs. PQ</u> <u>[B / (W)]</u>
Net Sales	\$5,454	\$7,327	\$(1,873)	\$5,940	\$(486)
Operating EBIT	\$476	\$785	\$(309)	\$918	\$(442)
Operating EBIT Margin	8.7%	10.7%	(200) bps	15.5%	(680) bps
Equity Earnings	\$50	\$55	\$(5)	\$19	\$31

Packaging & Specialty Plastics segment net sales in the quarter were \$5.5 billion, down 26% versus the year-ago period. Local price decreased 20% year-over-year, driven by lower polyethylene and olefin prices in all regions, primarily due to lower global energy costs. Currency increased net sales by 1%. Volume declined 7% year-over-year, as polyethylene demand across all regions was more

than offset by lower merchant volume in the Hydrocarbons & Energy business. On a sequential basis, net sales decreased by 8%. This was due to declines in olefin and aromatic merchant sales and lower polyethylene prices primarily in EMEAI, which were partly offset by higher packaging demand in Asia Pacific, Latin America and EMEAI.

Equity earnings were \$50 million, down \$5 million compared to the year-ago period. Equity earnings were up \$31 million on a sequential basis, primarily due to the completion of planned maintenance turnaround activity at Sadara in the second quarter.

Operating EBIT was \$476 million, compared to \$785 million in the year-ago period due to lower integrated polyethylene margins. Sequentially, Op. EBIT decreased by \$442 million, driven by lower integrated polyethylene margins, increased planned maintenance turnaround activity, and lower licensing revenue.

Packaging and Specialty Plastics business reported a net sales decline versus the year-ago period as higher polyethylene demand in all regions was more than offset by the impact of lower energy costs on local prices. Sequentially, net sales decreased as higher demand for industrial, consumer, and flexible food packaging partly offset polyethylene price declines, primarily in EMEAI.

Hydrocarbons & Energy business reported a net sales decline compared to the year-ago period, primarily driven by lower olefin and aromatic sales in EMEAI and the U.S. & Canada. Sequentially, net sales decreased due to lower merchant hydrocarbon sales, primarily in EMEAI.

Industrial Intermediates & Infrastructure

<i>In millions, except margin percentages</i>	Three Months Ended September 30			Three Months Ended June 30	
	<u>3Q23</u>	<u>3Q22</u>	<u>vs. SPLY</u> <u>[B / (W)]</u>	<u>2Q23</u>	<u>vs. PQ</u> <u>[B / (W)]</u>
Net Sales	\$3,035	\$4,059	\$(1,024)	\$3,177	\$(142)
Operating EBIT	\$21	\$167	\$(146)	\$(35)	\$56
Operating EBIT Margin	0.7%	4.1%	(340) bps	(1.1)%	180 bps
Equity Earnings (Losses)	\$(63)	\$(114)	\$51	\$(83)	\$20

Industrial Intermediates & Infrastructure segment net sales were \$3 billion, down 25% versus the year-ago period. Local price declined 17% year-over-year and currency decreased net sales by 1%. Volume was down 7% yearover-year with declines in both businesses, driven by slower global demand. On a sequential basis, net sales declined 4% as volume gains in EMEAI and Asia Pacific were more than offset by local price declines in all regions.

Equity losses for the segment were \$63 million, compared to equity losses of \$114 million in the year-ago period, reflecting higher margins at Sadara. Sequentially, equity losses improved by \$20 million primarily driven by increased volumes at Sadara for propylene oxide derivatives and isocyanates upon the completion of planned maintenance activity in the second quarter.

Operating EBIT was \$21 million, compared to \$167 million in the year-ago period, driven by lower prices and demand in both businesses. On a sequential basis, operating EBIT was up \$56 million driven by volume gains and lower costs, which were partly offset by an unplanned event in Industrial Solutions at Louisiana Operations.

Polyurethanes & Construction Chemicals business reported a net sales decrease compared to the year-ago period, with lower volume from consumer durables demand and declines in local price for propylene oxide derivatives and isocyanates. Sequentially, net sales declined as volume gains in all regions were more than offset by local price declines.

Industrial Solutions business reported a decrease in net sales compared to the year-ago period driven by local price declines, lower demand for industrial applications, and reduced supply availability due to an unplanned event at Louisiana Operations. Sequentially, net sales declined as higher demand for energy and mobility applications was more than offset by lower local prices and lower supply availability.

Performance Materials & Coatings

<i>In millions, except margin percentages</i>	Three Months Ended September 30			Three Months Ended June 30	
	<u>3Q23</u>	<u>3Q22</u>	<u>vs. SPLY</u> <u>[B / (W)]</u>	<u>2Q23</u>	<u>vs. PQ</u> <u>[B / (W)]</u>
Net Sales	\$2,130	\$2,654	\$(524)	\$2,197	\$(67)
Operating EBIT	\$179	\$302	\$(123)	\$66	\$113
Operating EBIT Margin	8.4%	11.4%	(300) bps	3.0%	540 bps
Equity Earnings	\$5	\$1	\$4	\$6	\$(1)

Performance Materials & Coatings segment net sales in the quarter were \$2.1 billion, down 20% versus the year-ago period. Local price decreased 17% year-over-year with declines in both businesses. Volume was down 3% year-over-year, as volume gains in commercial building & construction end-markets were more than offset by lower demand for personal care and coatings applications in residential construction. On a sequential basis, net sales were down 3% as volume gains in both businesses and all regions were more than offset by lower local prices.

Operating EBIT was \$179 million, compared to \$302 million in the year-ago period, driven by local price declines in both businesses. Sequentially, Op. EBIT increased \$113 million, driven by higher operating rates and cost savings.

Consumer Solutions business reported a decrease in net sales versus the year-ago period, as volume gains in commercial building & construction end-markets were more than offset by lower siloxanes prices. Sequentially, net sales declined as higher volumes in all regions excluding Latin America were more than offset by declines in siloxanes prices.

Coatings & Performance Monomers business reported a decrease in net sales compared to the year-ago period, led by local price declines. Sequentially, net sales decreased as higher monomer demand was more than offset by local price declines.

OUTLOOK

“With our continued focus on operational and financial discipline, we are navigating challenging market dynamics and expect to further benefit from rising oil prices that favor our cost-advantaged asset footprint,” said Fitterling. “We remain committed to our disciplined and balanced capital allocation priorities as we advance our strategy. By 2030, our Decarbonize and Grow and Transform the Waste strategies are expected to deliver more than \$3 billion in underlying earnings, reduce greenhouse gas emissions by 5 million metric tons and commercialize 3 million metric tons of circular and renewable solutions annually.”

[Link to the online article](#)

Dow declares quarterly dividend of 70 cents per share

Dow has declared a dividend of 70 cents per share, payable December 8, 2023, to shareholders of record on November 30, 2023.

This marks the 449th consecutive dividend paid by the Company or its affiliates since 1912.

[Link to the online article](#)



Dow’s leading disability hiring and employment practices recognized



Dow was recently honored with a [Leading Disability Employer Seal](#) by the National Organization on Disability (NOD), marking the seventh consecutive year Dow has received the recognition.

NOD spotlights the transformative contributions made by business leaders in promoting employment opportunities for individuals with disabilities. It also honors those organizations that prioritize diversity, equity and importantly, accessibility – setting a high standard for others to follow.

Leading Disability Employer Seal recipients are determined based on data provided by companies on the [NOD Employment Tracker™](#).

The Tracker helps companies understand which employment practices correlate to improved talent outcomes related to hiring, retention and advancement of people with disabilities.

Scoring prioritized practices that are associated with increased disability employment outcomes over time, and companies received additional points based on the percentage of people with disabilities in their workforce. Dow scored highly when considering disability employment strategy, practices and performance.

“This recognition represents Dow’s deep commitment to inclusion and accessibility,” said [John Sampson](#), senior vice president of Operations, Manufacturing and Engineering and executive sponsor for Dow’s Disability Employee Network (DEN). “Every day, we work to create a culture at Dow where every person’s talent can be brought to the table to create value – for our Company, communities and the world.”

In addition to Dow’s HR policies and talent acquisition programs, the DEN employee resource group aims to empower employees with disabilities and to raise awareness and educate about disabilities to create better allies.

"Organizations like Dow understand that by harnessing the talents of people with disabilities, they reap the benefits of a more innovative, diverse and dedicated workforce," said NOD President Carol Glazer. "The Leading Disability Employer Seal honors organizations who have not only embraced inclusivity but have taken concrete steps to break down barriers for individuals with disabilities and create an environment for all to thrive."

Visit [Dow's website](#) for additional information on the Company's commitment to inclusion, diversity and equity and to explore [Dow's 2022 INtersections Progress Report](#).

About The NOD Employment Tracker™

The NOD Employment Tracker benchmarks organizations of any size in six disability and veterans’ inclusion focus areas, including strategy, talent outcome metrics, climate and culture, talent sourcing, people practices and workplace tools and accessibility. All participating companies receive a Tracker Scorecard to develop plans and priorities for improving employment practices and policies. The 2024 Employment Tracker will open this fall; completion of the Tracker is required to qualify for the NOD Leading Disability Employer Seal Award. To learn more, visit www.nod.org/tracker.

About National Organization on Disability (NOD)

The National Organization on Disability (NOD) is a private, non-profit organization that seeks to increase employment opportunities for the 60-percent of working age Americans with disabilities who are not employed. To achieve this goal, NOD offers a suite of employment solutions, tailored to anticipate, and meet leading companies’ workforce needs. NOD has helped some of the world’s most recognized brands be more competitive in today’s global economy by building or enriching their disability inclusion programs. For more information about NOD and how its portfolio of professional services, Leadership Council and Employment Tracker™ can help your business, visit www.NOD.org.

[Link to the online article](#)

Dow announces major step forward for the cosmetic industry as Dow launches two new sustainable SURLYN™ grades for perfume and cosmetic packaging

- ◆ *SURLYN™ REN: made from bio-waste such as used cooking oil*
- ◆ *SURLYN™ CIR: made from mixed plastic waste*

Dow announced the launch of SURLYN™ REN and SURLYN™ CIR, two new sustainable ionomers grades which pioneer the use of renewable and circular feedstocks.

These new grades offer a significant moment for cosmetic industry packaging. The new SURLYN™ grades will enable beauty brands and manufacturers to create sustainable and high-quality cosmetic packaging that stands out on the shelves.

SURLYN™ CIR are ionomers produced from mixed plastic waste and SURLYN™ REN are ionomers produced from bio-waste such as used cooking oil (UCO). Both grades made using these alternative feedstocks continue to deliver the properties that give the unique look, feel and performance that the SURLYN™ material is known for.



LVMH Beauty, a division of luxury conglomerate LVMH, the world leader in luxury and home to 75 iconic brands, will be the first user of these new grades following [the brand's announced collaboration with Dow](#) earlier this year. Dow has started to supply the new sustainable SURLYN™ ionomer grades, which will be integrated into several of the multinational's applications.

“SURLYN™ REN and SURLYN™ CIR are a major step forward in creating sustainable packaging for the cosmetic industry. We are incredibly proud alongside LVMH Beauty to pioneer using renewable and circular materials to manufacture premium cosmetic packaging. These products will not only support LVMH towards their sustainability goals but will also contribute to Dow's bold ambition to transform waste and deliver 3 million metric tons per year of circular and renewable solutions by 2030,” comments Daniella Souza Miranda, global business director for Circular & Renewable Solutions, Dow.

More Product Information

SURLYN™ REN ionomers are produced using bio-waste such as cooking oil. This process utilizes waste residues or by-products from alternative product processes from other industries meaning the raw feedstock materials will not consume extra land resources or compete with the food chain.

SURLYN™ CIR ionomers are created through chemical recycling technologies, breaking down mixed waste plastics into their basic chemical elements, giving plastic waste a second life. This produces a

raw material that is equivalent to those made from virgin fossil feedstock. Circular feedstock such as this can be used in packaging and helps avoid plastic waste going to landfill or being incinerated.

SURLYN™ REN and SURLYN™ CIR's production processes are certified on a mass balance basis by the International Sustainability Carbon Certification (ISCC Plus).

For more about Dow's cosmetic packaging offering, please visit www.dow.inc/LuxePack.

About LVMH Beauty

LVMH's Perfumes & Cosmetics activities benefit from exceptional dynamism that relies on both the longevity and development of key lines, and on the boldness of new creations.

The brands cultivate what makes them unique and is guaranteed to make them stand out for their devotees in a highly competitive global market. The success of the Perfumes & Cosmetics division depends on finding the right balance between major historic Houses such as Parfums Christian Dior, Parfums Givenchy and Guerlain, and young brands with strong potential like Benefit Cosmetics, Fresh and Make Up For Ever...

All are driven by the same values: a quest for excellence, creativity and innovation.

For more information, visit www.LVMH.com

[Link to the online article](#)

Dow and Evonik announce the successful startup and operation of hydrogen peroxide to propylene glycol (HPPG) pilot plant

Innovative technology powered by a flexible business model to better address future customer demand

Dow and Evonik are proud to announce the successful start-up and operation of a pioneering hydrogen peroxide to propylene glycol (HPPG) pilot plant at Evonik's site in Hanau, Germany. Collaboratively developed by Dow, the world's largest producer of propylene glycol, and globally leading hydrogen peroxide manufacturer Evonik, the plant uses the distinct HYPROSYN® method to enable the direct synthesis of propylene glycol (PG) from hydrogen peroxide and propylene.



“At Dow, we believe in collaborating with our customers and other stakeholders to create, innovate and find solutions to big challenges. So, I am delighted to see this plant become operational through this collaboration,” said Andrew Jones, global business director for Chlor-Alkali Vinyl & Propylene Oxide, Propylene Glycol, at Dow. “With this innovative technology and flexible asset and business model, we are well positioned to meet our customers’ needs and growing market demand.”

“At Evonik Active Oxygens, we put sustainability at the core of futurizing our business. This relies not only on innovative technologies, but also the ability to scale these up and bring them to market,” remarked Michael Träxler, head of Evonik’s Active Oxygens business line. “That’s where excellent strategic partnerships come into play. The startup of this pilot plant in Hanau thus not only represents a major technological milestone in our efforts to make industry more sustainable, it is also a prime example of how cross-company collaboration, like this partnership with Dow, is essential to driving sustainable solutions.”

The pilot plant will demonstrate the benefits of the novel technology. In contrast to the traditional process, where propylene is used to make propylene oxide (PO), which is converted to PG through hydrolysis, the HYPROSYN® process uses a novel catalytic system to generate PG directly from propylene and hydrogen peroxide. The integration of all key reaction stages in a single reactor eliminates the need of additional investments in PO capacity and lowers capital requirements. The process also enables a reduced environmental footprint e.g., water consumption is reduced to less than 5% compared to conventional PG methods. In addition, existing PG plants can be retrofitted to benefit from this new technology.

Propylene glycol serves as an essential ingredient such as a high-performing additive, intermediate, or initiator in a wide range of applications — including industrial, food and animal feed, pharmaceuticals, and cosmetics. Over the next few years, the Dow and Evonik teams will continuously evaluate the plant’s operations and capabilities to scale up manufacturing, in support of growing market demand.

For more information please visit: [Dow propylene glycol solutions](#) and [evonik.click/hyprosyt](#)

About Evonik

Evonik is one of the world leaders in specialty chemicals. The company is active in more than 100 countries around the world and generated sales of €18.5 billion and an operating profit (adjusted EBITDA) of €2.49 billion in 2022. Evonik goes far beyond chemistry to create innovative, profitable, and sustainable solutions for customers. About 34,000 employees work together for a common purpose: We want to improve life today and tomorrow. For more information, please visit [evonik.com](#).

[Link to the online article](#)

Collaborating with African youth to drive a sustainable future

*The truth is tomorrow will be too late to begin action.
Each and every one of us needs to take that decisive step today
to ensure we succeed in building the better future we envision.*

Globally, climate change is one of the most pressing issues of our time.

If we do not take action to address climate change, the consequences will be severe, leading to widespread food insecurity, displacement and conflict. Africa, in particular, will be severely affected by such consequences with seven of its countries ranking within the top ten of countries most at risk of climate disaster¹. But climate change is not the only critical issue.

The [Sustainable Development Goals](#) (SDGs), a set of 17 goals adopted by the United Nations in 2015, identify and address what we have collectively agreed as a global community, as the most important issues facing our world today, including poverty, hunger, climate change and inequality.

Taking that important step

If we are to achieve the SDGs, we need to all work together. We need to see the SDGs not as a challenge but as an opportunity to build a better future for ourselves and for generations to come.

We have always been passionate about advancing science and innovation to find solutions that contribute to overcoming challenges impacting us all. The question now is – how can we use our expertise, talents and passions to transform the communities we live and work in?

The answer is not – and never has been – easy, but it provides a great first step is to team up with other like-minded individuals, organizations and communities and that's exactly what we're doing on the African continent as well.

Promoting active citizenship amongst African youth

For the past two years, we partnered with LEAP Africa, Africa's most prominent youth-focused



leadership development organization, to host a Pan-African youth-led social impact campaign, the **Youth Day of Service (YDoS)**.

YDoS is an annual month-long initiative aimed at renewing the spirit of active citizenship among African youth with an emphasis on spreading the culture of service and collective responsibility. The campaign seeks to inspire African youth to be social change agents by fostering the spirit of service to the community and volunteerism, focusing on the SDGs.

YDoS offered a unique opportunity to contextualize our [2025 sustainability goals](#) and supported us to contribute to achieving global goals by raising awareness for the importance of SDGs within the African youth community. By partnering with young members of our society, we created social impact by advancing sustainable solutions, building inclusive communities and developing tomorrow's innovators.

In the past two years, close to 10,000 volunteers registered and implemented over 500 projects during the month-long campaign. The participants represented a broad spectrum of African youth communities from 34 African countries including Nigeria, Kenya, Algeria, Sierra Leone, Mali, Madagascar, Ghana, The Gambia, South Sudan and South Africa.

All 17 SDGs were addressed in one way or another within implemented projects which reached an estimated 10 million individuals. Under goal 1 of the SDGs (No Poverty), more than 10 skill acquisition sessions were organised to empower vulnerable people to earn income. Over 200 people were reached by activities conducted under this particular activity.

Similarly, to address SDG 8: Decent Work and Economic Growth, a group of volunteers in Ghana was responsible for empowering other young people with hard and soft skills to help them start their own businesses. Some of the vocational skills taught during the project include phone repairs, liquid soap production and make-up, after which they were given seed capital as investments.

Over 30 cities and community clean-ups were implemented across countries to address SDG 11: Sustainable Cities and Communities, whilst 4,970 trees were planted in more than five countries. Done in accordance with SDG 13: Climate Action, this was accompanied by over 20 sensitization activities on the causes, consequences, and solutions to climate change.

What you can do today

The truth is tomorrow will be too late to begin action. Each and every one of us needs to take that decisive step today to ensure we succeed in building the better future we envision. Together, we can build a better future for all. Let's apply our products, technology, and expertise for the greater social good and for our planet.

[Link to the online article](#)

Dow Personal Care expands sustainable portfolio with three new product launches at in-cosmetics Asia 2023

Dow will present its latest innovative ingredients at in-cosmetics Asia 2023 in Bangkok, Thailand, from November 7-9 (booth K30). The new product launches, including the debut of the Beauty Rebalanced 2.0 Concepts Collection and Sustainable Hair Care Collection, celebrate one of the largest portfolios in the personal care industry that focuses on sustainable and high-performance solutions.



Additionally, Dow is inviting professionals from beauty OEM, ODM, and Indie Brands to join us at the [Inspire Asia Beauty workshop](#), on November 8, 11:30 a.m. in BITEC 214 meeting room. Dow experts will share industry trends and scientific know-how on driving sustainable beauty through the power of bio-based and biodegradable ingredients and 13 brand new formulations from Dow's Beauty Rebalanced 2.0 and Sustainable Hair Care Collection, exploring waterless beauty, high natural origin formulations and minimalist beauty.

“Dow is celebrating Asia’s diversity and beauty at in-cosmetics Bangkok with three new technologies and new Beauty Rebalanced and Sustainable Hair Care concepts collection. We continue to invest in our bio-based technologies platform to offer high-performing, bio-derived, bio-degradable ingredients that meet green regulatory standards. We want to enable brands to deliver their promise to consumers with formulations that are gentle on the skin, hair, and the environment.” said Isabel Almiro do Vale, Global Strategic Market Director of Dow Personal Care. “With our initiatives, we are strengthening our promise to accelerate the transition towards a low-carbon, circular economy for the beauty industry.”

The latest product launches span across a range of beauty care applications, including skin care, hair care, sun care and color cosmetics. Our new launches and featured formulation concepts include:

- **[EcoSense™ APP-1000 Surfactant](#)**, 100% naturally derived and readily biodegradable surfactant, delivering improved foam quality and foam stability compared to existing surfactants; efficient at removal of silicone (deposit from rinse-off conditioner treatment); demonstrates long-lasting color protection. Shortlisted for in-cosmetics Asia Innovation Zone Best Ingredient Award 2023.
- **[EcoSense™ APP-5000 Formulation Aid](#)**, a bio-based oil-in-water emulsifier that is naturally sourced from sugars and fatty alcohol. It supports consumer demand for natural formulations with 100% natural index per ISO 16128, and 100% renewable carbon content. Suitable for PEG free systems and can emulsify high oil phase content up to 40%. This product will be featured at the show’s Innovation Zone.

- **[DEXCARE™ CD-1 Polymer](#)**, 2023 BIG Innovation Award-winning bio-derived deposition aid to boost the shampoo’s conditioning effectiveness, allowing for increased versatility and improving the natural content of formulations. This product will be showcased at the show’s Spotlight On Zone.
- **Beauty Rebalanced 2.0**, is a collection of seven beauty formulations enhancing eco-conscious choices from different angles. These innovative concepts are designed with a clear focus on sustainability, exploring waterless beauty, high natural origin formulations and minimalist beauty. This collection covers skin care, hair care, sun care and color cosmetics.
- **Sustainable Hair Care Collection**, a collection of six inspirational formulations for complete hair care, innovated with bio-based or biodegradable ingredients and formulations engineered to minimize environmental impact.

“Asia Pacific region continues to drive innovations and new demand in the personal care industry, through in-cosmetics Asia and our Inspire Asia Beauty workshop, we look forward to connecting with industry professionals, showcasing our latest developments, and forging partnerships that will shape the future of the personal care market,” said Cedric Toh, Global Segment Leader and Regional Marketing Manager for Dow Personal Care.

Dow experts and scientists will be available at in-cosmetics Asia 2023 to discuss high-performing technologies, bio-based innovative materials and the fresh, inspiring formulations developed to bring industry-leading ideas to life. To learn more about Dow’s innovations, visit the Innovation Zone and Spotlight On Corner at the show and meet with Dow experts at booth K30.

About Dow Personal Care Solutions

Dow Personal Care offers unique, innovative ingredients that empower customers around the world to create products with exceptional performance and exciting benefits that consumers can trust and believe in. Consumers that seek the confidence of a healthy appearance can see and feel the difference in our products through their lustrous hair or radiant and protected skin. We leverage our understanding of customer needs, deep market knowledge and technical expertise—combined with one of the broadest portfolios of technologies—to deliver personal care solutions with outstanding performance that are safe for people and the planet. We foster these innovations on global and local levels to meet the needs of diverse consumers through business centers, research and development (R&D), manufacturing plants and customer applications centers around the world. Please visit www.dow.com/virtual/beautyexperience/

[Link to the online article](#)

Interview with Cathy Chu: Enhancing energy efficiency through immersion cooling technology

*“This approach not only **reduces a data center’s energy usage by 60%**, but also minimizes water usage compared to traditional cooling Methods, aligning with organizations’ sustainability goals.”*

What brought about the development of immersion cooling technology?

Data centers are central to the storage, processing, and administration of extensive digital information. They underpin critical technologies such as cloud computing and online communication, propelling growth and innovation within the digital economy. Data centers also consume about 1.5% of the world's electricity, resulting in substantial heat generation.

With this in mind, approximately five years ago, forward-thinking customers approached us in search of cutting-edge technologies that enhance thermal conductivity and heat transfer to meet the evolving demands of the next evolution in data center design. They were seeking a holistic solution that encompassed both cooling liquid and thermal management materials.

Traditionally, data centers mainly relied on fluoro-based cooling fluids to meet the intricate cooling needs necessitated by the substantial heat generated within these facilities. However, shifts in the industry landscape have prompted us to explore alternative options. In response to these challenges and our commitment to meeting our customers' evolving needs, we ventured into uncharted territory. This endeavor resulted in the development of a revolutionary liquid cooling technology which possesses the exceptional ability to transfer heat efficiently, supporting high-powered data center designs, all while driving sustainability and cost-effectiveness.

Why is immersion cooling technology more important than ever before?

The rising carbon footprint of data centers, coupled with rising power and heat demands, underscores the need for advanced cooling solutions that combine performance and sustainability. So, how can we achieve this superior level of cooling? The answer lies in harnessing the potential of immersion cooling – a technique involving the complete submersion of electrical and electronic components, including entire servers and storage devices, in a thermally conductive yet electrically insulating liquid coolant. This approach not only **reduces a data center’s energy usage by 60%**, but also minimizes water usage compared to traditional cooling methods, aligning with organizations’ sustainability goals.



Our DOWSIL™ Immersion Cooling technology stands out as a hybrid silicone-organic fluid, boasting exceptional heat conduction capabilities when compared to conventional air-cooling methods. Specifically designed for single-phase immersion cooling applications, this technology can penetrate confined spaces and effectively cool electronic components. Additionally, it supports increased server load densities and enhanced computer performance while substantially reducing both data center space requirements and power usage. In the long-term, these advantages will be critical in enabling technologies heat-intensive technologies shaping future industries, such as 5G+ edge computing centers, high frequency trading, blockchain, crypto mining, AI, and machine learning.

How will immersion cooling technology help organizations advance toward a more sustainable future?

The rapidly evolving technological landscape, driven by the increasing reliance on cloud computing and data centers, has led to a soaring demand for high-performance computing platforms. Notably, AI applications, with their intensive processing requirements, generate substantial heat and demand significant electricity for cooling.

As organizations strive for greater operational efficiency and a positive environmental impact, they must carefully consider the technologies and cooling methods employed in their data centers. DOWSIL™ Immersion Cooling technology, engineered for single-phase immersion cooling applications – where the coolant retains its liquid state throughout -presents a range of benefits. In the single-phase system, the coolant remains in liquid form while efficiently extracting heat through direct contact with server components and then directing it through a heat exchanger. These benefits include reduced operating costs, enhanced hardware stability, minimized environmental, health, and safety risks, and improved scalability for larger data centers.

In a world where sustainable business practices are paramount across all industries, the adoption of immersion cooling in data centers represents an impactful contribution toward a more sustainable future for all.

Cathy Chu, Global Strategic Marketing Director, Consumer & Electronics

[Link to the online article](#)

Collaborating for the planet: how one unlikely material enabled a sustainable luxury golf bag

Premium silicone leather is on the rise as a replacement for traditional leather to create stylish and durable sports accessories, with a conscience. On a mission to reimagine a more sustainable golf bag for a world-class golf event,

*VESSEL and Dow turned to a novel and versatile material solution:
LuxSense™ Silicone Leather*



Sport has the power to drive positive change through sustainable action on the part of athletes, leagues, sports apparel and equipment brands, fans and beyond. As for the golf community in particular, our partner [GEO Foundation for Sustainable Golf](#) explains: “As a global sport with millions of followers, set in nature and with deep community roots, golf can step forward as a leader for sustainability and climate action.” And that includes everything from evolving standards in course management to equipment – such as golf bags.

THE CHALLENGE

On a mission to develop materials that improve performance and sustainability across the world of sport, we were recently presented with a new project: collaborating with premium sport and travel accessories brand VESSEL to engineer a luxury bag specifically for a world-class golf event.

In order to be used by the best female golfers in the world, the bag needed to offer extreme durability and performance, exude a high-end feel, allow for unique levels of color customization and, arguably the most challenging of the requirements, be manufactured with a reduced carbon footprint.

THE SOLUTION

Behind every successful collaboration is the people. Dow and VESSEL team members worked across three time zones to design the vision for this one-of-a-kind golf bag and shape that vision into reality in under six months.

To create this highly customizable golf bag with eco-conscious athletes and consumers in mind, synthetic leather seemed like the right solution. But even though the material has been around for decades, traditional synthetic leather requires the use of volatile organic compounds (VOC) and can have odor issues, poor hand feel, cracking, brittleness as well as a low-quality appearance.

Manufactured without plasticizers, DMF and other VOCs, our new [LuxSense™ Silicone Leather](#) technology, which was originally designed specifically to solve the nuanced challenges of traditional synthetic leather for luxury automotive applications, proved a winning solution for this application. The result was a beautiful, durable golf bag that offered a sensory experience similar to authentic leather.

Collaboration driving sustainability through sport

Ultimately, it's an exciting time for sustainability in sport with collaborations like this one happening between a growing number of brands, leagues and players. This project in particular showcases how

high-performance sporting equipment, apparel and accessories can be developed with innovative and sustainable materials – like versatile LuxSense™ Silicone Leather - that require fewer resources and reduced or even zero carbon emissions. It's just one example proving that when organizations unite around a shared vision, they can spark tangible transformation.

[Learn more about LuxSense™ Silicone Leather](#)
[Learn more about Dow Performance Apparel](#)

[Link to the online article](#)

Dow leaders recognized in 2023 Outstanding LGBTQ+ Role Model Lists

Dow leaders highlighted for their significant contributions to fostering a more inclusive workplace and world

Dow today announced several of its leaders have been recognized in the [Outstanding 2023 Leading LGBTQ+ Role Model Lists](#), a testament to the Company's commitment to fostering a diverse and inclusive work environment.

Compiled by INvolve, a global network that celebrates and supports LGBTQ+ executives and allies, the lists acknowledge the impactful contributions of Dow leaders for demonstrating exceptional advocacy in their respective fields and playing a vital role in championing diversity, equity, and inclusion within the Company.

"These leaders represent the dedication of Team Dow working to create a more inclusive and equitable workplace," said Dr. Alveda

Williams, chief inclusion officer at Dow. "Through their actions within and outside of Dow, they are making a difference in advancing our ambition each and every day and I am proud to work with them."



Top 100 LGBTQ+ Executives

Louis A. Vega, President, North America; Vice President, Government Affairs and Advocacy, #7

Louis A. Vega embodies a holistic approach to fostering inclusion and diversity within the workplace, setting a remarkable standard through his involvement with Dow's LGBTQ+ and ally employee resource group (ERG), GLAD. Serving as the global advisor, Vega has been instrumental in fostering inclusive environments across GLAD chapters worldwide, underscoring his commitment to a

workplace and community where every employee thrives. Vega's impact extends beyond his advisory role, as he stands as a driving force within Dow's President's Inclusion Council and spearheads the Dow Social Justice Council. His influence is also felt at a strategic level, where his insights shape Dow's global business trajectory, people development and growth strategies. Vega's dedication to inclusivity reverberates through his involvement in various civil society groups' boards, emphasizing his role as a catalyst for change. Notably, his ninth consecutive recognition as an Outstanding honoree in 2023 speaks volumes about his unwavering commitment to advancing LGBTQ+ inclusion.

Javier Constante, President, Latin America

Javier Constante's impact as an influential LGBTQ+ executive reverberates through his passionate advocacy for the LGBTQ+ community. An engaged member of Dow's President's Inclusion Council, Constante is a champion in weaving diversity, equity, and inclusion into Dow's Latin America strategy. Beyond the organization, Constante actively contributes to creating a more inclusive Brazil, evidenced by his leadership role at Forum de Empresas e Direitos LGBTI+, a business forum that promotes LGBTI+ rights. His dedication to fostering a more inclusive environment extends to public policy initiatives that promise a better future for Brazil. Four consecutive years on the Outstanding Role Model List underscores his continued commitment to propelling positive change.

Top 50 Ally Executives

Amy Wilson, General Counsel and Corporate Secretary, #15

Amy Wilson's leadership shines as the executive sponsor of Dow's GLAD ERG, demonstrating an unwavering commitment to fostering LGBTQ+ inclusion. Her efforts extend beyond Dow, as she orchestrates events that spotlight critical LGBTQ+ inclusion topics. Wilson's prowess in elevating environmental, social and governance issues and inclusion and diversity conversations in the C-suite and boardroom further underscores her impact. A true advocate, her guidance amplifies diversity, including LGBTQ+ diversity, across all organizational tiers. Recognized as an Outstanding honoree four times, Wilson's legacy in promoting inclusivity and diversity continues to grow.

Neal Sheorey, former Vice President, Coatings & Performance Monomers

During his 20-year tenure with Dow, Neal Sheorey exemplified allyship. He served both as North America Executive Sponsor for Dow's GLAD ERG and the regional executive sponsor for Dow's Asian Diversity Network ERG during his time at Dow. His transformative impact transcended internal conferences to facilitate open conversations on environmental, social and governance priorities. Sheorey's role as a panel host at Dow's SOAR conference showcased his commitment to leveraging sports as a platform for diversity, equity, and inclusion. At Dow, he stood as a pillar of support during challenging times, ensuring the safety and well-being of colleagues and their families. Sheorey's global business strategy prioritized increased female and minority representation, fostering an inclusive culture that celebrates diversity at all levels. He has been recognized as an Outstanding honoree for two consecutive years.

Top 100 LGBTQ+ Future Leaders

Trevor Ewers, Associate R&D Director, #7

Trevor has been an active leader of Dow's LGBTQ+ and ally employee resource group, GLAD, since 2014. Completing his tenure as North America GLAD Leader, Trevor led LGBTQ+ benefit audits supporting improved benefit offerings and the creation of Dow's 2023 comprehensive North America LGBTQ+ Benefit Guide. He drove LGBTQ+ self-ID enhancement for Dow U.S. employees, co-led the annual global Pride Campaign and external volunteering activities, and participated in educational workshops and external speaking events, providing training and best practices for creating and supporting successful ID&E employee resource groups to align company and organizational goals. In 2015, Trevor initiated the Great Lakes Bay Region LGBTQ+ Workplace Summit, training 50 local businesses on the value of workplace inclusion and providing tools to implement inclusive practices within their companies. Trevor remains a passionate mentor, providing opportunities for the next generation of leaders inside and outside of Dow.

Erica Everett, Global Autonomous Vehicles Platform Leader

Erica Everett's trailblazing spirit is evident in her dedicated pursuit of inclusive collaborations at Dow. Everett is the global co-chair for Dow's GLAD, a premier ERG with over 6,000 participants worldwide. Everett works at the intersection of inclusion and innovation driving high-level collaborations with customers and partners to make the largest impact. She has orchestrated impactful projects, including the pioneering launch of a Pride-themed NASCAR car, sending Dow goods around the world in a rainbow shipping container through collaboration with Maersk and launching a durable rainbow crosswalk kit highlighting Dow technology. Everett's advocacy extends to her creation of a support group for LGBTQ+ parents, underscoring her commitment to fostering an inclusive workplace. Her efforts have also led to enhanced fertility and parental benefits for LGBTQ+ colleagues. Everett's passion for transparency and inclusive behavior fuels her commitment to making a meaningful difference. This marks her second consecutive year on the Outstanding list.

Leading the way on inclusion and equality

Dow has consistently demonstrated its commitment to leading the way in diversity, equity, and inclusion. The Company's multifaceted approach includes creating a safe and supportive environment for all employees, regardless of gender, sexual orientation or background. Dow actively engages in educational initiatives, offers mentorship programs and sponsors events that celebrate diversity.

"Today we celebrate not only the achievement of these remarkable Dow people, but also the triumph of authenticity, inclusivity and unity in our global network," said Alberto Pino, Dow global marketing director and co-chair of Dow's GLAD ERG. "The achievements of our team echo a powerful truth – that diversity is our greatest asset. As we applaud the achievements of these outstanding individuals at Dow, let us remember that our true strength lies in empowering the next generation of diverse talent. We are honored to be included in the Outstanding Role Model Lists and look forward to seeing what our winners do next."