

## COST ADVANTAGED PRODUCTION

Cost advantaged production is the cornerstone of NOVA Chemicals' long-term competitiveness and a key driver of our profitability. The Company's primary manufacturing facility in Joffre, Alberta, Canada, benefits from the region's structural cost advantages for the production of ethylene and polyethylene. Due to the "Alberta Advantage," Joffre is the lowest-cost production facility in North America and one of the lowest-cost in the world. Since feedstock

accounts for up to 80% of the total cost to produce ethylene, the Alberta Advantage can lead to enhanced long-term profitability for NOVA Chemicals relative to North American competitors, independent of industry cycles.

The major components of the Alberta Advantage are detailed on page 28 of Management's Discussion & Analysis.

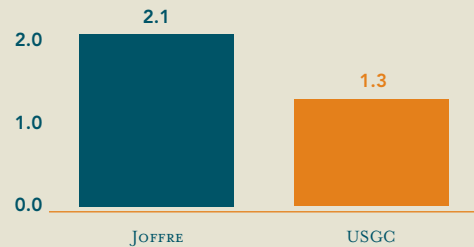
FIG. 3 ETHANE COST, CENTS PER GALLON



Source: CMAI. ■ ALBERTA ETHANE ■ USGC ETHANE

NOVA Chemicals acquires ethane feedstock in Alberta at natural gas cost plus fees for extraction and delivery. In contrast, the U.S. Gulf Coast (USGC) ethane market has many consumers that acquire ethane at the market price - which is usually significantly above cost. This dynamic is a significant contributor to NOVA Chemicals' Alberta Advantage.

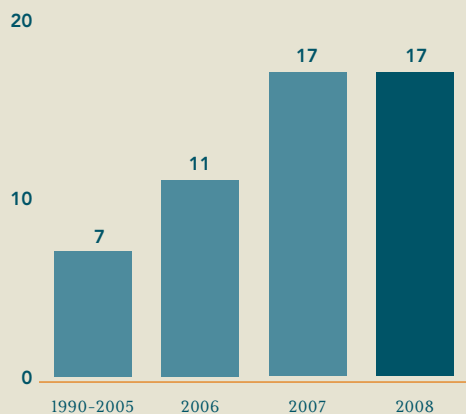
FIG. 4 ETHYLENE CAPACITY, BILLION POUNDS PER YEAR



Source: CMAI.

NOVA Chemicals' Joffre plants are nearly 60% larger than the average USGC plant. These newer, more energy efficient facilities build on NOVA Chemicals' structural feedstock advantage to yield a sustainable ethylene cash cost advantage.

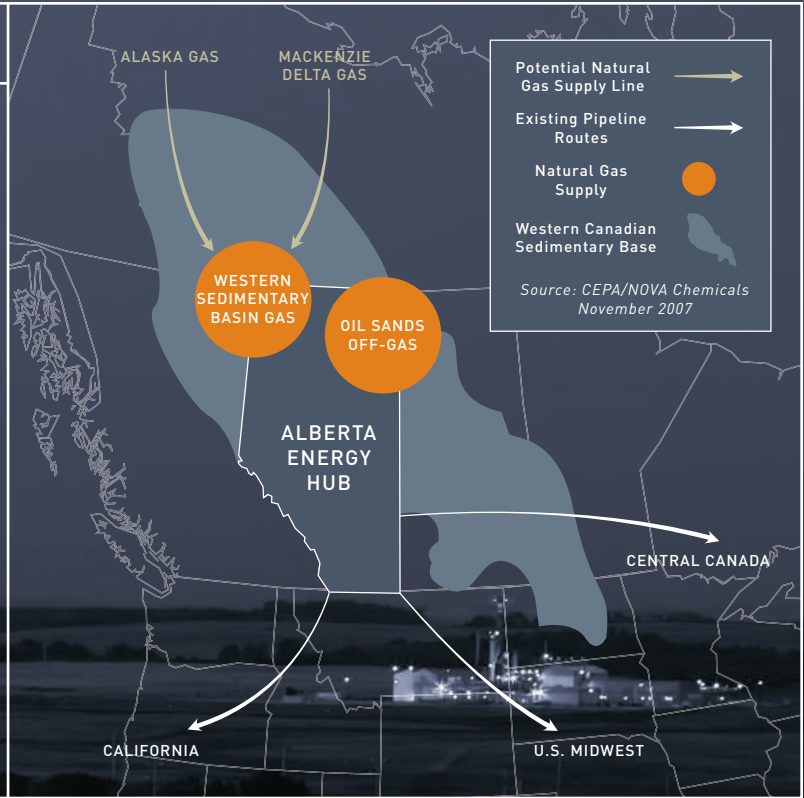
FIG. 5 ALBERTA ADVANTAGE, CENTS PER POUND



Since 1990, the Alberta Advantage has averaged approximately 8 cents per pound, but can be significantly higher in periods of higher energy prices. The Alberta Advantage has a relationship to the price of ethane on the U.S. Gulf Coast, which generally follows crude oil prices; higher crude prices generally mean a larger advantage. Since 2006, the Alberta Advantage has been as high as 35 cents per pound and has averaged 15 cents per pound.

FIG. 6 THE ALBERTA ADVANTAGE

Alberta's large and efficient natural gas and ethane collection and delivery infrastructure enable long-term access to low-cost feedstock. In addition, Alberta is ideally positioned to benefit from new sources of low-cost feedstock from the Canadian Oil Sands and new gas supplies from Western Canada and the Arctic.



NOVA Chemicals realizes the benefit of the ethylene cost advantage on its polyethylene production at the Joffre site — used in everyday consumer staple products like food packaging — and through the sale of ethylene to other Alberta petrochemical manufacturers at varying contractual arrangements below USGC prices.



## VALUE ADDING TECHNOLOGY

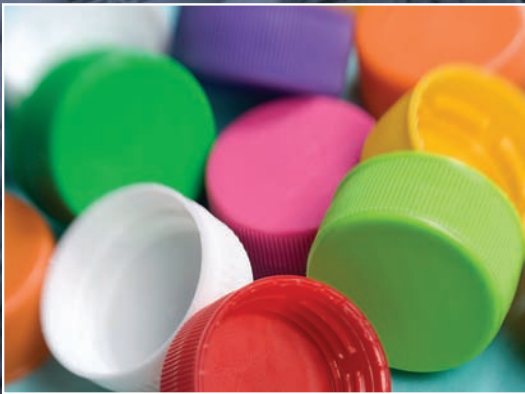
Customers highly value product quality and performance. NOVA Chemicals' product quality and performance receive industry-leading ratings.<sup>(1)</sup>

### ▶ BARRIER FILM FOOD PACKAGING



SURPASS® packaging film resin manufactured with Advanced SCLAIRTECH™ technology provides industry leading moisture-barrier performance and the ability for packaging designers to create thinner packaging to meet both performance and sustainability objectives. Our film resins are found throughout the grocery store in applications, such as cereal liners and fresh produce, meat, cheese and poultry packaging.

### ▶ THIN WALL INJECTION MOLDING



Our polyethylene injection molding products – NOVAPOL®, SCLAIR® and SURPASS performance resins deliver value through process and material efficiencies – providing our customers with an advantage in applications such as food packaging, pallets, crates, caps and closures.

### ▶ ROTATIONAL MOLDING



Carolina Electric Boat Company's Twin Troller x10 electric boats, made exclusively with NOVA Chemicals' SURPASS performance resins, won "Product of the Year" from the Association of Rotational Molders. This innovative design uses SURPASS performance resins to displace traditional materials such as aluminum and wood - delivering a lighter, tougher product to the boating industry.

(1) Source: 2008 market perception study

“In our business, sustainable performance depends on low costs and differentiating technology. NOVA Chemicals has both. We’ve created a technology portfolio that delivers both outstanding value for our customers and higher margins for NOVA Chemicals.”

**CHRIS PAPPAS**

President and Chief Operating Officer, NOVA Chemicals

NOVA Chemicals’ fully proprietary technology extends throughout the value chain from catalyst and process technologies all the way to customer end-use applications. Our technology portfolio includes the freedom to build and operate polyethylene plants using both solution and gas-phase production processes, leading to lower production costs, higher yields and better products.

NOVA Chemicals’ Advanced SCLAIRTECH technology uses proprietary catalyst and process technologies to produce the SURPASS family of polyethylene resins. SURPASS resins are world-class leaders in product performance for high-value film, rotational molding and thin-wall injection molding polyethylene applications.



**ARCEL RESIN**



ARCEL advanced foam resin is a sustainable packaging solution for high-end products that reduces packaging size by as much as 40%. This results in a positive domino effect that cuts energy consumed in the manufacturing of packaging, lowers fuel consumption, transportation costs and emissions throughout the supply chain, and reduces the waste stream.

NOVA Chemicals also produces ARCEL® advanced foam resin and Elemix® concrete additive, unique materials that leverage the benefits of styrenics technology to provide economic, environmental and performance advantages.

We apply proprietary technology to our portfolio of polymers and products to help our customers reduce their environmental impact. Our products provide raw material source reduction and energy efficiency throughout the lifecycle of many consumer and industrial products.



**ELEMIX CONCRETE ADDITIVE**



Elemix concrete additive using NOVA Chemicals’ polymer technology is specially formulated to provide lighter weight and enhanced durability in structural and non-structural concrete applications. Elemix additive was voted the “Most Innovative Product” in the category of Concrete Making Materials at the 2009 World of Concrete tradeshow. A panel of industry experts selected Elemix additive because of the innovation and value it delivers to the industry.

## EXPANDING GLOBAL MARKETS

Demand for basic plastics is growing rapidly. Polyethylene volume demand has grown very consistently, averaging 5% per year since 1990. The impact of prior economic slow-downs on long-term polyethylene demand growth has been minor because of the essential value that consumer staple polyethylene packaging brings to everyday life.

### Value Drives Demand

The products our industry delivers are basic to health, food safety and energy conservation, areas that are critical in developed and particularly developing economies.

The increasing value of plastics is a result of the technology investment that creates products that are consistently better, safer and more cost-effective — lowering the cost of food by reducing spoilage.

### Growing Opportunity

When contrasting the polyethylene consumption of advanced economies to emerging ones, there is a distinct difference. One billion people in advanced economies use 80 pounds of polyethylene per person annually while the majority of the world - 5.7 billion people in emerging regions - are only using 14 pounds of polyethylene per person annually. The use of plastic for food packaging in Western Europe and North America is a primary driver of consumption compared to the lower rates in emerging regions.

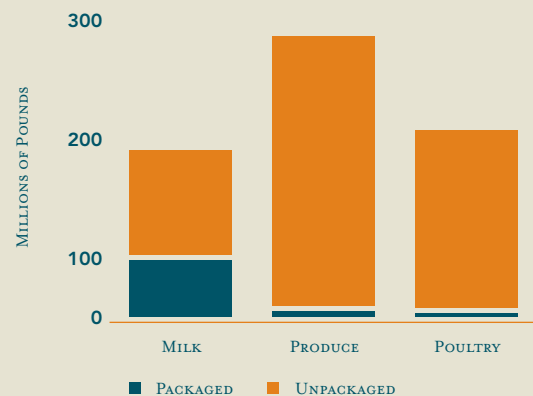
Only a small fraction of the food produced in India, for example, is packaged, resulting in increased spoilage and higher overall food costs (Figure 7). Consultants estimate plastic food packaging can reduce spoilage by 20-40%, creating tremendous market potential for polyethylene in addressing a basic social need.

### GLOBAL OPPORTUNITY



Increased use of food packaging among the 5.7 billion people in developing economies can reduce food spoilage and represents strong potential demand growth for polyethylene. Today, people in these regions consume only 14 pounds per person as compared to 80 pounds per person for the developed world's 1 billion people.

FIG. 7 INDIA - FOOD PACKAGING



Source: Government of India Reports: Business Knowledge Resources, NOVA Chemicals.