



PETROLEUM: FUELING OUR LIVES

 **ENBRIDGE™**
Where energy meets people



THE WORLD'S MOST VITAL SOURCE OF ENERGY

For more than 150 years, petroleum products have been transforming our way of life — from how we fuel our cars to how we heat our homes, from the clothes we wear to the household products we buy, as well as how our food is grown, harvested, and delivered to our tables. Even with the welcomed development of alternative fuels, petroleum will continue to fuel 70-80 percent of our energy needs for decades to come, according to the U.S. Energy Information Administration.

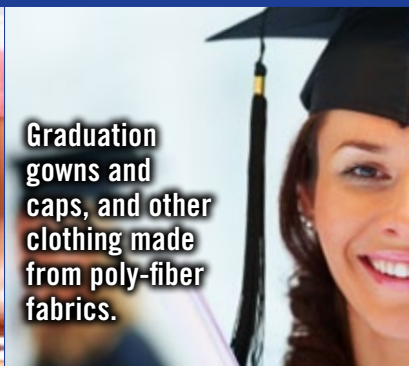
Refineries receive crude oil delivered by pipeline, railway, and ship with the vast majority of crude oil in the Midcontinent delivered by pipeline. The crude oil can then be turned into gasoline, diesel, jet fuel and many other useful petroleum products. Products we use and depend on every day are delivered to us using petroleum. It would be hard to imagine a world without petroleum — one where gasoline, electronic devices, aspirin, and plastic containers would not exist.



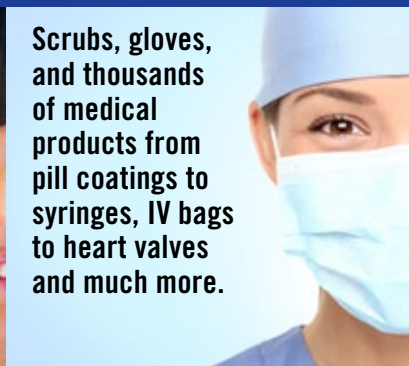
Asphalt is one of many products that is refined from heavy crude oil and covers 94 percent of the paved roads in the U.S. and anywhere a smooth, durable driving surface is required.



Balloons, candles, toys, and the carpet where the crumbs land.



Graduation gowns and caps, and other clothing made from poly-fiber fabrics.



Scrubs, gloves, and thousands of medical products from pill coatings to syringes, IV bags to heart valves and much more.



Eye glasses, sun glasses, safety glasses, and other light-weight, durable reading tools.

LIFE AS WE KNOW IT TODAY WOULD NOT BE POSSIBLE WITHOUT PETROLEUM.

Enbridge safely transports more than 2 million barrels of crude oil a day, delivering it to refineries around the Great Lakes, Oklahoma, and the U.S. Gulf Coast. These refineries turn this crude oil into various petroleum products.

One barrel of crude oil (42 gallons), when refined, can produce about 19 gallons of gasoline and 10 gallons of diesel fuel, both of which can be used to harvest food, transport products, heat homes, and sustain our military. The remainder of that barrel of oil can be made into other some 6,000 other possible products from petroleum feedstock. Just a few examples are shown in this handout.

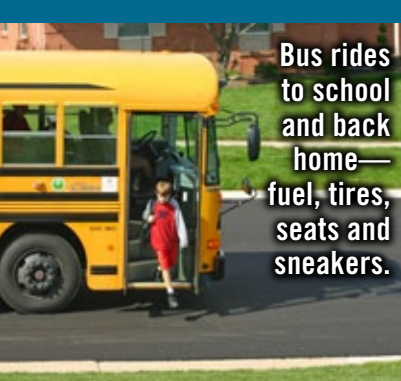
Many things beyond gasoline come from products derived from petroleum.

A LOT MORE THAN GASOLINE...
According to the U.S. Energy Information Administration, on average, Americans use nearly 20 million barrels of petroleum products every day.

Oil and natural gas contribute to our health and well-being through a myriad of medicines, medical supplies and health and safety products. Other products made from petroleum by-products can be found virtually everywhere in healthcare including prosthetics and implants, sanitizing cleaners, and even the ambulance that needs to get you to the hospital fast.

An estimated 900 million tubes of lipstick are sold around the world every year. Not only is lipstick derived from petroleum, the PVC pipe in homes and about 50 percent of the new Boeing Dreamliner's™ primary structure, including the fuselage and wing, is made of modern composite materials originating from oil and natural gas.

Without petroleum your car would not run and would be a lot less safe. Laminated windshields, nylon air bags, and polyester seat belts provide added safety. Other features like stereos, speakers, and computers make those road trips a lot more fun.



Bus rides to school and back home—fuel, tires, seats and sneakers.



Car seats, seat belts, air bags, and lots of things that keep us safe when we're on the go.



Light-weight and strong bike frame and helmet... rubber wheels, too.



Jet fuel, airplane components and a fighter pilot's protective gear.

MORE THAN HALF OF THE CRUDE OIL REFINED IN THE UPPER MIDWEST IS DELIVERED TO REFINERIES BY THE ENBRIDGE PIPELINE SYSTEM.

So what's in a barrel of oil? More than you think...

Enbridge transports more than 80 different liquid petroleum commodities across North America including natural gas liquids and heavy, medium, and light grades of crude oil. As an interstate common carrier, all of the products we transport must meet strict pipeline quality specifications posted with the Federal Energy Regulatory Commission (FERC).

Light grades of crude that Enbridge transports are produced in western and central Canada, although a growing amount comes from the Bakken Formation primarily in western North Dakota, and can be refined into:

- gasoline,
- diesel, and
- jet fuel.

These fuels make it possible to transport food, school children, travelers, and workers.

Heavy grades are transported in batches with various grades of medium crude oil by Enbridge from western Canada's conventional and oil sands resources. Heavy crude is produced throughout the world from California to Venezuela to Mexico, and it offers the most versatile product refining including:

- ingredients for countless products from fertilizers to plastics;
- fuels, heating oil, lubricants; and,
- asphalt for roads, roofs, runways, and the like.

Canadian heavy crude oil has been a secure, reliable and growing resource for refineries in America's heartland for decades. Its key components are similar to heavy crude oil from California, Nigeria and other locations around the world.

ALL OF THESE PRODUCTS ARE MADE FROM HIGHLY VERSATILE HEAVY CRUDE



Learn more about petroleum products at:

- **American Petroleum Institute** api.org/oil-and-natural-gas-overview.aspx
- **U.S. Energy Information Administration** Energy Explained at www.eia.doe.gov/energyexplained

enbridge.com
enbridgeus.com

