



2018 North American Automotive Heavy-duty Diesel Engine
Lubricants New Product Innovation Award



2018
BEST PRACTICES
AWARDS

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Background and Company Performance

Industry Challenges

End-use industries, such as mining and logistics, are increasingly demanding greater performance from engines in their trucks and heavy equipment. While these industries are seeking engines with less maintenance and durability, they demand more power and increased fuel efficiency from their engines as well. Moreover, regulatory bodies and quality standards institutions, such as the US Environmental Protection Agency (EPA), American Petroleum Institute (API), and the National Highway Traffic Safety Administration (NHTSA), have been continuously implementing updated rules for diesel-powered commercial transport vehicles requiring engines have lower carbon emissions and greater fuel efficiencies.

Manufacturers of heavy-duty diesel (HDD) engine lubricants are required to keep abreast of these end-user demands and regulatory changes and proactively develop engine oils that are tailored to specifications of newer engine designs. Additionally, end users and original equipment manufacturers (OEMs) are increasingly looking for HDD lubricant options that can extend the time between oil changes, while ensuring engine wear is minimized, thus enabling engines' longer service life.

Automotive HDD engine lubricant manufacturers need to maintain strong relationships with their distribution partners because the market greatly relies on distribution companies. Lubricant manufacturers need to ensure their customers, such as mining and logistics companies, as well as distribution partners are well equipped to choose the right product for various engines, in terms of viscosity grades and temperature ranges.

Therefore, manufacturers need to offer quality training and technical assistance services to their customers and engage in collaborative product development to create long-term customer relationships, thereby staying ahead of the competition.

New Product Attributes and Customer Impact

Ability to Cater to Customers' Varied Needs

Headquartered in Ontario, Canada, Petro-Canada Lubricants Inc manufactures high-performance HDD engine lubricants under its popular brand DURON™, which encompasses a range of products with varied base oil blends under different grades. By understanding each customer's needs, Petro-Canada ensures its portfolio of HDD engine lubricants can be customized and optimized for various end-user requirements in different environments and climatic conditions, thereby enabling customers to realize optimum properties and characteristics specified for each application.

Because of changing market demands from end users and regulatory authorities, Petro-Canada offers lubricants based on various formulations that cater to a variety of requirements from its customers in the mining, logistics, and other transportation fields.

For instance, Midwest Motor Express, Inc., a leading North American logistics company, partnered with Petro-Canada to use the company's DURON range of products for its carrier fleet and was greatly impressed by the lubricants' performance in terms of offering longer oil drain intervals, which significantly reduced maintenance costs.

Petro-Canada develops products and processes by working with its customers iteratively to identify various properties and specifications required for specific applications. Additionally, the company offers on-site analysis consultations that enable it to make these site-specific, customized recommendations to its customers.

Reliability of Products Enhanced by a Delightful Customer Purchase Experience

Petro-Canada positions itself as an end-to-end service provider: a company that works with its customers throughout the course of their projects, from specifying lubricant properties to on-site consultations to highly skilled customer service. Petro-Canada has established a strong customer base in North America and provides products and services to European and Asian markets through its regional offices and wide distributor network. Moreover, the company is exceedingly valued for its high-quality product portfolio that ensures the most effective solutions for its customers' projects.

For instance, Jepson Petroleum LTD, a leading wholesaler of lubricants and fuels across Alberta, Canada, was looking for the ideal lubricant system to address the recently introduced API CK-4 and FA-4 standards for HDD engines. Petro-Canada had recently introduced its latest range of DURON next-generation lubricants to address these upcoming requirements.

To cater to Jepson Petroleum's need to upgrade its lubricants, Petro-Canada conducted a field trial of its DURON HP 15W-40 on the former's vehicles, testing the oil's performance in a variety of engines. The exercise provided Jepson Petroleum with high confidence regarding product performance and has enhanced the trust it has in Petro-Canada's products and services.

Thoughtful Design

Petro-Canada's recently introduced DURON next-generation product range includes DURON High Performance (HP), DURON Super High Performance (SHP), DURON Ultra high Performance (UHP), and DURON Advanced (API FA-4). Formulated with cutting-edge lubricant technology with the industry's best additives and high-quality base oils, DURON next-generation lubricants are greatly appreciated by leading OEMs for their adherence to advanced engine performance requirements for long-term protection and greater fuel efficiency. Furthermore, Petro-Canada's products were developed to cater to the requirements of API CK-4 and FA-4.

Another key design feature of this new product range is that it can handle extreme temperature variations, thereby enabling smoother operations at customers' facilities, such as mines and construction sites.

Certifying their quality, Petro-Canada's products are approved by leading OEMs, such as Caterpillar, Cummins, DAF, Detroit Diesel, Mercedes-Benz, and Volvo.

Customer Ownership Experience

Petro-Canada's best-in-class technical support is one of the primary benefits enjoyed by its customers. Apart from a strong product portfolio, the company's success can be attributed to its value-added services, including application, testing, and periodic validation. With a team of experienced product development professionals, the company ensures product delivery, with excellent logistics management and highly efficient products.

For instance, Agnico Eagle Mines Limited, a Canada-based gold mining company, has been continuously using Petro-Canada's DURON UHP 0W-30 lubricant for its entire truck fleet because of the longer oil drain intervals provided by this product, thereby significantly reducing its maintenance costs.

Additionally, Petro-Canada recognizes the advantage of extra time saved by these products because of the reduced time spent on preventive maintenance. As a prominent participant in the HDD engine lubricants market, Petro-Canada places an emphasis on selling high-quality lubricants to its target customers, which additionally provides reduced maintenance cost, as well as proactive product development by identifying future needs, thereby creating great value for the company in the minds of its customers.

Customer Service Experience

Petro-Canada strongly believes in enhancing the customer experience by remaining in close proximity to customers during the product development process. The company's capability to develop customized solutions is an inherent skill that defines its committed focus toward enhancing customer value. For instance, Petro-Canada collaborated with Caterpillar on a lubricant development project for developing cost-effective, low-carbon energy technologies in HDD lubricants to support a heavy-duty vehicle (HDV) efficiency program sanctioned by the Energy Technologies Institute.

Similarly, Carrier Centers, a leading transportation dealer in Ontario, Canada, selected Petro-Canada to supply the DURON range of lubricants to all its sites because of the high-quality customer service, product excellence, and exceptional technical support offered by Petro-Canada.

In addition to this strategic approach of optimizing its customer service, Petro-Canada invites customer feedback and often implements customers' suggestions in its newest product offerings.

Apart from positioning itself as a technology leader and research and development (R&D) forerunner in the HDD engine lubricants landscape, Petro-Canada has streamlined its focus on enhancing customer service by taking a comprehensive view of its customers'

operational and enterprise requirements and providing extensive access to its unparalleled technical expertise and industrial knowledge. Furthermore, the company is committed to delivering end-to-end services based on key factors, such as flexibility, proximity to customers, proactivity, global presence, and tailor-made services.

Conclusion

With its keen focus on sustainable innovation and by continuously enhancing customer value, Petro-Canada has introduced its best-in-class DURON next-generation lubricants to the HDD engine lubricants industry. These products provide greater efficiency in terms of engine protection, durability, extended oil drain intervals, and reduced wear of engine components.

In addition, the readiness of the company's products to cater to future market requirements has made them unique, compared to traditional and established products offered by competitors.

For its strong overall performance, Petro-Canada Lubricants Inc. has earned Frost & Sullivan's 2018 New Product Innovation Award.

Significance of New Product Innovation

Ultimately, growth in any organization depends upon continually introducing new products to the market and successfully commercializing those products. For these dual goals to occur, a company must be best-in-class in three key areas: understanding demand, nurturing the brand, and differentiating from the competition.



Understanding New Product Innovation

Innovation is about finding a productive outlet for creativity—for consistently translating ideas into high-quality products that have a profound impact on the customer.

Key Benchmarking Criteria

For the New Product Innovation Award, Frost & Sullivan analysts independently evaluated two key factors—New Product Attributes and Customer Impact—according to the criteria identified below.

New Product Attributes

- Criterion 1: Match to Needs
- Criterion 2: Reliability
- Criterion 3: Quality
- Criterion 4: Positioning
- Criterion 5: Design

Customer Impact

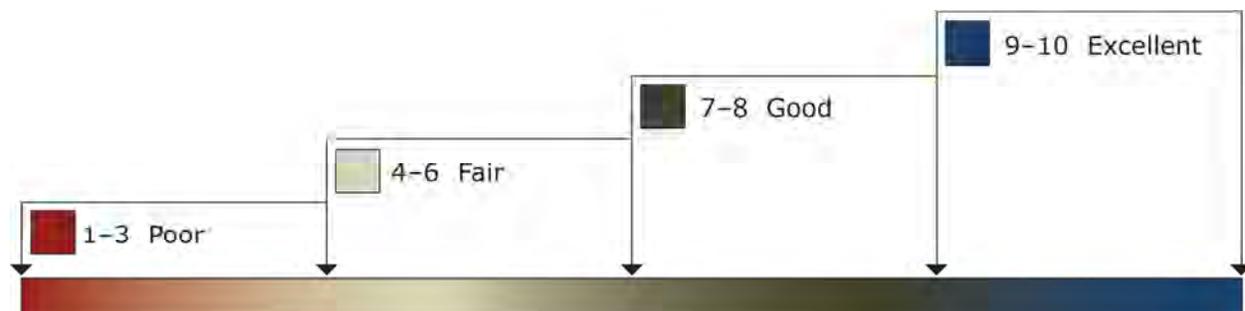
- Criterion 1: Price/Performance Value
- Criterion 2: Customer Purchase Experience
- Criterion 3: Customer Ownership Experience
- Criterion 4: Customer Service Experience
- Criterion 5: Brand Equity

Best Practices Award Analysis for Petro-Canada Lubricants Inc.

Decision Support Scorecard

To support its evaluation of best practices across multiple business performance categories, Frost & Sullivan employs a customized Decision Support Scorecard. This tool allows our research and consulting teams to objectively analyze performance, according to the key benchmarking criteria listed in the previous section, and to assign ratings on that basis. The tool follows a 10-point scale that allows for nuances in performance evaluation. Ratings guidelines are illustrated below.

RATINGS GUIDELINES



The Decision Support Scorecard is organized by New Product Attributes and Customer Impact (i.e., these are the overarching categories for all 10 benchmarking criteria; the definitions for each criterion are provided beneath the scorecard.). The research team confirms the veracity of this weighted scorecard through sensitivity analysis, which

confirms that small changes to the ratings for a specific criterion do not lead to a significant change in the overall relative rankings of the companies.

The results of this analysis are shown below. To remain unbiased and to protect the interests of all organizations reviewed, we have chosen to refer to the other key participants as Competitor 2 and Competitor 3.

<i>Measurement of 1-10 (1 = poor; 10 = excellent)</i>			
New Product Innovation	New Product Attributes	Customer Impact	Average Rating
Petro-Canada Lubricants Inc.	9.3	9.1	9.2
Competitor 2	8.8	9.0	8.9
Competitor 3	8.6	8.8	8.7

New Product Attributes

Criterion 1: Match to Needs

Requirement: Customer needs directly influence and inspire the product’s design and positioning.

Criterion 2: Reliability

Requirement: The product consistently meets or exceeds customer expectations for consistent performance during its entire life cycle.

Criterion 3: Quality

Requirement: Product offers best-in-class quality, with a full complement of features and functionalities.

Criterion 4: Positioning

Requirement: The product serves a unique, unmet need that competitors cannot easily replicate.

Criterion 5: Design

Requirement: The product features an innovative design, enhancing both visual appeal and ease of use.

Customer Impact

Criterion 1: Price/Performance Value

Requirement: Products or services offer the best value for the price, compared to similar offerings in the market.

Criterion 2: Customer Purchase Experience

Requirement: Customers feel they are buying the most optimal solution that addresses both their unique needs and their unique constraints.

Criterion 3: Customer Ownership Experience

Requirement: Customers are proud to own the company’s product or service and have a positive experience throughout the life of the product or service.

Criterion 4: Customer Service Experience

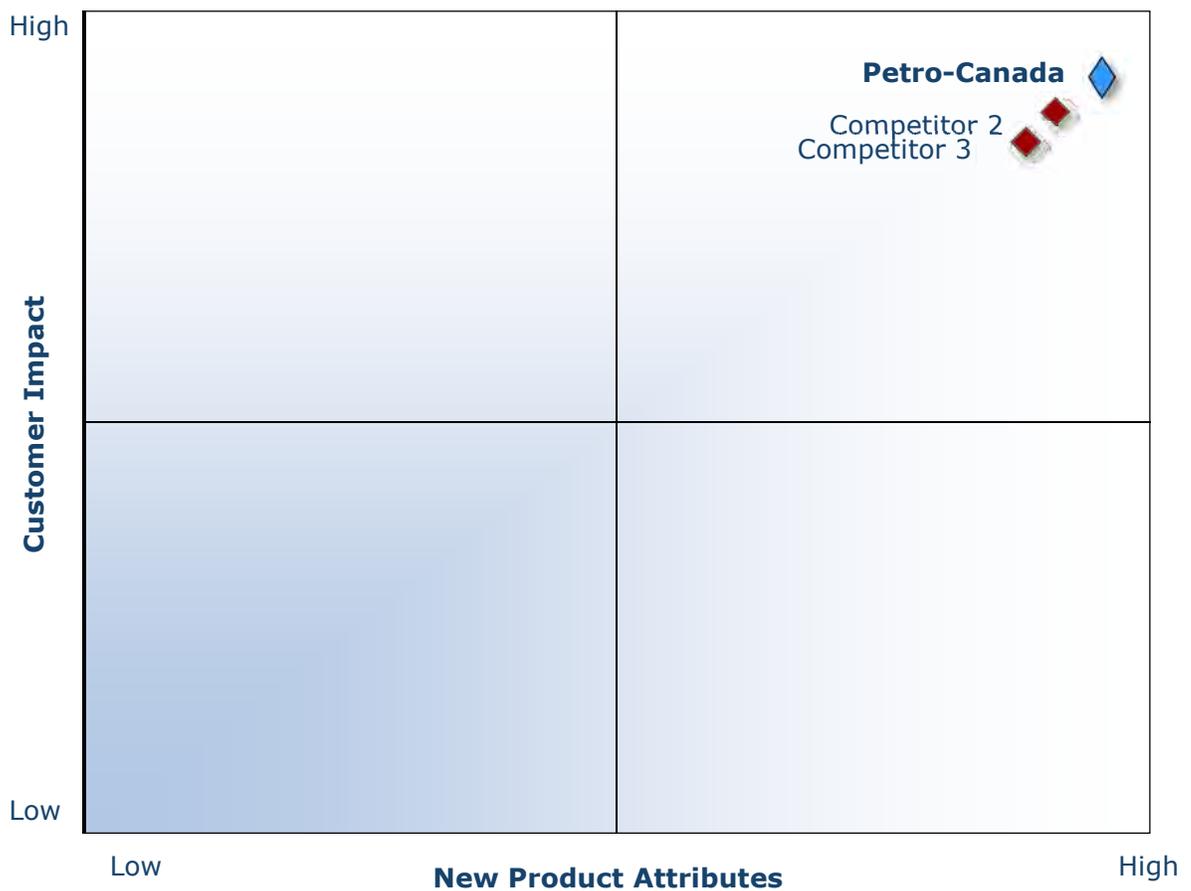
Requirement: Customer service is accessible, fast, stress-free, and of high quality.

Criterion 5: Brand Equity

Requirement: Customers have a positive view of the brand and exhibit high brand loyalty.

Decision Support Matrix

Once all companies have been evaluated according to the Decision Support Scorecard, analysts then position the candidates on the matrix shown below, enabling them to visualize which companies are truly breakthrough and which ones are not yet operating at best-in-class levels.



Best Practices Recognition: 10 Steps to Researching, Identifying, and Recognizing Best Practices

Frost & Sullivan analysts follow a 10-step process to evaluate Award candidates and assess their fit with select best practice criteria. The reputation and integrity of the Awards are based on close adherence to this process.

STEP	OBJECTIVE	KEY ACTIVITIES	OUTPUT
1 Monitor, target, and screen	Identify Award recipient candidates from around the globe	<ul style="list-style-type: none"> • Conduct in-depth industry research • Identify emerging sectors • Scan multiple geographies 	Pipeline of candidates who potentially meet all best-practice criteria
2 Perform 360-degree research	Perform comprehensive, 360-degree research on all candidates in the pipeline	<ul style="list-style-type: none"> • Interview thought leaders and industry practitioners • Assess candidates' fit with best-practice criteria • Rank all candidates 	Matrix positioning of all candidates' performance relative to one another
3 Invite thought leadership in best practices	Perform in-depth examination of all candidates	<ul style="list-style-type: none"> • Confirm best-practice criteria • Examine eligibility of all candidates • Identify any information gaps 	Detailed profiles of all ranked candidates
4 Initiate research director review	Conduct an unbiased evaluation of all candidate profiles	<ul style="list-style-type: none"> • Brainstorm ranking options • Invite multiple perspectives on candidates' performance • Update candidate profiles 	Final prioritization of all eligible candidates and companion best-practice positioning paper
5 Assemble panel of industry experts	Present findings to an expert panel of industry thought leaders	<ul style="list-style-type: none"> • Share findings • Strengthen cases for candidate eligibility • Prioritize candidates 	Refined list of prioritized Award candidates
6 Conduct global industry review	Build consensus on Award candidates' eligibility	<ul style="list-style-type: none"> • Hold global team meeting to review all candidates • Pressure-test fit with criteria • Confirm inclusion of all eligible candidates 	Final list of eligible Award candidates, representing success stories worldwide
7 Perform quality check	Develop official Award consideration materials	<ul style="list-style-type: none"> • Perform final performance benchmarking activities • Write nominations • Perform quality review 	High-quality, accurate, and creative presentation of nominees' successes
8 Reconnect with panel of industry experts	Finalize the selection of the best-practice Award recipient	<ul style="list-style-type: none"> • Review analysis with panel • Build consensus • Select recipient 	Decision on which company performs best against all best-practice criteria
9 Communicate recognition	Inform Award recipient of Award recognition	<ul style="list-style-type: none"> • Inspire the organization for continued success • Celebrate the recipient's performance 	Announcement of Award and plan for how recipient can use the Award
10 Take strategic action	Upon licensing, company is able to share Award news with stakeholders and customers	<ul style="list-style-type: none"> • Coordinate media outreach • Design a marketing plan • Assess Award's role in future strategic planning 	Widespread awareness of recipient's Award status among investors, media personnel, and employees

The Intersection between 360-Degree Research and Best Practices Awards

Research Methodology

Frost & Sullivan's 360-degree research methodology represents the analytical rigor of our research process. It offers a 360-degree-view of industry challenges, trends, and issues by integrating all 7 of Frost & Sullivan's research methodologies. Too often companies make important growth decisions based on a narrow understanding of their environment, leading to errors of both omission and commission. Successful growth strategies are founded on a thorough understanding of market, technical, economic, financial, customer, best practices, and demographic analyses. The integration of these research disciplines into the 360-degree research methodology provides an evaluation platform for benchmarking industry participants and for identifying those performing at best-in-class levels.

360-DEGREE RESEARCH: SEEING ORDER IN THE CHAOS



About Frost & Sullivan

Frost & Sullivan, the Growth Partnership Company, enables clients to accelerate growth and achieve best-in-class positions in growth, innovation and leadership. The company's Growth Partnership Service provides the CEO and the CEO's Growth Team with disciplined research and best practice models to drive the generation, evaluation, and implementation of powerful growth strategies. Frost & Sullivan leverages more than 50 years of experience in partnering with Global 1000 companies, emerging businesses, and the investment community from 45 offices on six continents. To join our Growth Partnership, please visit <http://www.frost.com>.