GREENSPARKGROUP ONTARIO GREEN SCREEN AMAZON MGM STUDIOS

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Driving Change with Renewable Diesel on Toronto Productions

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Snapshot

The film and television industry is under increasing pressure to reduce its carbon footprint, and fuel is the largest single source of greenhouse gas emissions on a typical production. Renewable diesel (RD) has emerged as a promising near-term solution; a drop-in transition fuel that can reduce life cycle emissions by over 60% compared to fossil diesel, using existing engines and infrastructure with no modifications required. While RD has been adopted on productions in Vancouver, Calgary, Los Angeles, New York, and the United Kingdom, Toronto-based productions had yet to access it, until now.

The Greatest, a limited TV series from Amazon MGM Studios, was the first production filmed in Toronto, Ontario to use renewable diesel. The convergence of available funding, committed production leadership, and technical expertise made *The Greatest* an ideal candidate for this groundbreaking pilot project, which aimed to clarify the pathway, challenges, and workflow to utilize RD on productions. Several challenges including vendor approvals, fueling logistics, and associated costs were overcome throughout the pilot project to successfully use RD in generators and reduce production emissions by about 12% compared to fossil diesel use for the same period. This case study incorporates insights from ground-level stakeholders and project collaborators to provide a roadmap for upcoming Toronto-based productions to successfully adopt RD.

Key Takeaways

Renewable diesel is available to productions in the Greater Toronto and Hamilton Area during warmer months (e.g., May to September) from fuel vendors, with colder-weather blends expected to become increasingly available.

This pilot project on *The Greatest* reduced production-level emissions from fuel supplied by the fuel truck by about 12%, using the PEAR 4.2.9 tool which aligns with the Greenhouse Gas Protocol. If RD had replaced all fuel, production-level emissions could have been reduced by up to 99% following the same methodology. See page 4 for more details.

Productions that want to use RD should begin planning early in prep to solicit all required approvals and department support. Productions require support from studios and production executives, approval from generator and truck rental companies, and collaboration with the Transport department. If a fuel tank will be placed on the studio lot, additional approvals are required from the facility.

Introduction

Why Renewable Diesel?

Fuel used in generators and vehicles is the primary source of greenhouse gas emissions from an average film or TV production[1]. Renewable diesel (also known as RD, HVO, and HDRD[2]) can reduce life cycle greenhouse gas (GHG) emissions by over 60%[3] compared to fossil fuel, due to its plant and/or animal-based feedstocks. It is considered a *transition fuel* because, while life cycle emissions are significantly lower, tailpipe emissions remain. This limitation would ultimately be addressed by a full transition to electrification from renewable energy sources. Major US studios have issued calls to action for the industry to expand RD availability,[4] and several studios require their productions to use RD to meet sustainability standards. Despite its common use in other regions, productions in Ontario had yet to access RD so this pilot project was identified as a potentially transformative opportunity for the industry.

What are Life Cycle & Tailpipe Emissions?

Life cycle emissions account for all GHG emissions associated with a fuel from production to combustion, including feedstock sourcing, processing, and transportation. *Tailpipe emissions* refer only to the GHG released directly from the engine. RD's life cycle emissions are significantly lower than fossil diesel because its biogenic feedstocks absorb CO_2 during growth, partially offsetting what is released at the tailpipe.

Approach

This pilot project was spearheaded by the production's Sustainability Manager with full support from the Line Producer and Production Manager. Early in prep, the Sustainability Manager led conversations with the Production, Transport, Locations, and Electric departments to socialize the idea, gather feedback and concerns, and ultimately gain support. Quotes and RD availability timelines were gathered



Sustainability Team on The Greatest *with an RD delivery truck.*

[1] Sustainable Entertainment Alliance, Carbon Emissions of Film & Television Production: 2020-2022 (2025); Telefilm Canada, Estimating the Carbon Footprint of Canada's Audio-Visual Sector (2023)
[2] Sustainable Entertainment Alliance, "Factsheet: Renewable Diesel"
[3] Natural Resources Canada, National Renewable Diesel Demonstration Initiative (January 2025)
[4] Sustainable Entertainment Alliance (formerly, Sustainable Production Alliance), "RE: Renewable Diesel (R100)" (May 2024)

from fuel vendors, and RD product information was distributed to generator and truck rental vendors to obtain approval for use in their engines. Approval from the studio facility was required to place a temporary fuel storage tank on site, following all safety requirements. Important logistics and safety measures were discussed with the Transport department, specifically the Swamper driving the Fuel Truck who would access RD from the on-site tank following the same safety requirements as refueling from a commercial fuel station. Since *The Greatest* was eligible to apply for Research and Development (R&D) Funding from Amazon MGM Studios, the Sustainability Manager applied to cover costs for the fuel tank, safety equipment, and fuel delivery. Production was required to pay for the RD fuel itself. All fuel use data was tracked in collaboration with the Fuel Truck Driver and fuel supplier throughout the project. Results were summarized and analysed for this report.

Fuel Consumption and Emissions Reduction

Over the run-of-show (~3 months), the Fuel Truck supplied 25,015 L of fuel to production equipment. The Fuel Truck Driver kept daily fuel logs for the generators, and Petro-Canada provided the total amount of fuel purchased using the driver's fuel card. RD was used for the final two weeks of filming, comprising about 11% of the total fuel provided by the fuel truck (Table 1).

Table 1: Fuel consumption and GHG emissions by equipment type, as refuelled by the Fuel Truck.

Equipment Type	Fuel Type	Volume (L)	% Volume	Equivalent Emissions (t CO_2e)*
Trucks	Fossil diesel*	5,934	24%	15.78
Generators	Fossil diesel*	16,379	65%	43.56
	Renewable diesel**	2,702	11%	0.10
Total		**25,015**	**100%**	**59.44**

**Equivalent GHG emissions are 2.66 kg CO_2e / Litre of fossil diesel, aligned with PEAR 4.2.9.*[5]
***Renewable diesel tailpipe carbon dioxide (CO_2) emissions are similar to fossil diesel. However, they are considered biogenic and therefore excluded from a production's required emissions reporting. Equivalent GHG emissions included here are from methane (CH_4) and nitrous oxide (N_2O)*[6]*, aligning with methodology in the PEAR 4.2.9.*

[5] Production Environmental Accounting Report 4.2.9 from Green Production Guide | Sustainable Entertainment Alliance
[6] For guidance about emissions factors, see Table 4.3 from Emission factors and reference values Version 3.0 (Government of Canada, 2025)

In using 2,702 L of RD instead of fossil diesel during this pilot project, emissions were reduced by an estimated 12% following methodology aligned with the Greenhouse Gas Protocol in the PEAR 4.2.9 (Table 2). If the full 25,015 L of diesel used on *The Greatest* had been RD, emissions would be an estimated 0.89 t CO_2e, using the same PEAR 4.2.9 methodology. This value is a significant 99% reduction in fuel emissions attributed to the production, relative to fossil diesel. This scenario is illustrative of a situation ONLY where RD fully replaces fossil diesel.

Table 2: Emissions comparison scenarios between actual, fossil diesel only, and renewable diesel only uses.

Fuel Type	Equivalent Emissions (t CO_2e)	% Change from Actual
Actual (fossil + renewable diesel, per Table 1)	59.44	0%
Fossil diesel only	66.52	12%
Renewable diesel only	0.89	-99%

A note on vendors:

4Refuel proposed several production-specific solutions including on-site fuel delivery to filming locations outside of Toronto. This service would enable Fuel Truck Drivers to access RD without driving potentially long distances back to a fuel tank at a studio. While this approach was not logistically possible for *The Greatest*, it presents an opportunity for future pilot projects.

Petro-Canada brands their RD as "EcoDiesel". Prior to March 2026, providing it to an Ontario-based customer required a tank to be located on the project site. Beginning in 2026, EcoDiesel availability was expanded to allow delivery from two locations, one each in Toronto and Oakville. In July 2026, Petro-Canada added EcoDiesel to a Cardlock pump in Mississauga. This service allows productions to access RD at commercial fuel stations using Petro-Canada fuel cards, similar to existing processes in Vancouver.

Budget Considerations

Two fuel vendors known to provide RD in the Toronto region were approached about fuel availability and costs. The most cost-effective estimate for the production timeline was selected and referenced in the R&D Funding application. Production paid for all upfront costs which were then reimbursed by the R&D Fund, with the exception of the fuel cost.

Table 3: Cost summary comparison to fossil diesel for this pilot project.

Cost Description	Rate	Compared to Using Fossil Diesel	+/- Change
Tank delivery and pick-up fees	Flat, per vendor	Additional cost to production, covered by R&D funding	+ ($ confidential negotiation)
Tank monthly rental fees	Flat, per vendor	Additional cost to production, covered by R&D funding	+ ($ confidential negotiation)
Tank re-positioning fees	Labour rate, per vendor	Additional cost to production, covered by R&D funding	+ ($ confidential negotiation)
Tank electrical hook-up fees	Labour rate, per vendor	Additional cost to production, covered by R&D funding	+ ($ confidential negotiation)
Removal of surplus fuel in tank at wrap	Labour rate, per vendor	*Null for this project as all fuel purchased was used*	~ $0
Tank on-site safety equipment (spill berm, fire extinguisher in water proof cabinet, spill kit, drain protection seal, drip mat)	Per retailer	Additional cost to production, covered by R&D funding	+ ($ confidential negotiation)
Fuel delivery fees	Delivery rate, per vendor	Additional cost for delivery to on-site tank	+ 8-12 ¢/L during the pilot project
Fuel cost	$/L	Including fuel premium	– 18% compared to fossil diesel during the pilot project
Production crew labour	Per schedule	*This pilot project did not identify notable crew labour costs*	~ $0

What is the RD fuel "premium"?

Costs for all fuel types in Canada are regulated by provincial and territorial governments and can be accessed online through Natural Resources Canada[7]. RD is currently a specially imported product and has different manufacturing costs compared to fossil fuels. RD was less expensive per litre than fossil diesel during this pilot project (Table 3), which may not always be the case. Therefore, this "premium" rate difference should be considered alongside delivery fees when budgeting for fuel.

Fueling Logistics for the Transport Department



Temporary above-ground fuel storage tank delivery at Downsview.

Refueling responsibilities are placed under the Transport department, specifically the Fuel Truck Driver or Swamper. Typically for Toronto, the Fuel Truck is a pick-up truck fitted with a 600 Litre or similar-sized fuel tank in the bed. The Fuel Truck Driver drives the Fuel Truck to the nearest retail stations to fill the tank, then refuels generators and trucks on location or at the studio. In this pilot project, RD was only available from a fuel tank at the studio facility. For ease of implementation, the Fuel Truck Driver agreed to refuel using RD from the fuel tank whenever the production logistics and schedule allowed, but would access retail stations for fossil diesel for more distant filming locations. RD and fossil diesel can be mixed in engines, so there are no concerns about blending it in the tank.

> **EcoDiesel works the same as the regular diesel that you could be buying from one of our gas stations.**
>
> *— Brendan Selke, Sales Executive, Wholesale Sales, Suncor Energy Products Partnership*

[7] See Natural Resources Canada, Transportation fuel prices (updated August 11, 2025)

Approval by Generator and Truck Rental Vendors

Renewable diesel is an ASTM D975 standard fuel and has been approved by Original Equipment Manufacturers (OEMs) for use in nearly all diesel engines.[8] However, many people confuse renewable diesel with biodiesel, which is not usable in most diesel engines. As a result, it is necessary to educate vendors about this difference to obtain comfort and approval with using RD. Both Petro-Canada and 4Refuel can provide further information about chemical compositions of the RD products they provide.

On *The Greatest*, trucks were rented from several local owner-operators as well as larger rental companies. While most large rental companies had existing policies and experience with RD, smaller vendors lacked this background and were cautious about approving the fuel. A few small-scale vendors did not approve RD during this pilot project, so their trucks were fueled at commercial stations rather than by the Fuel Truck Driver. Logistically, this outcome did not overburden the Transport Department because the trucks were primarily used by off-set teams.



Check out the panel, SPF25 Toronto | Driving Change: Renewable Diesel in Production for more information on types of diesel.

As more large rental companies approve RD, smaller vendors are likely to follow. Large rental companies often set the standard for equipment specifications and fuel policies across the industry, and their endorsement of RD serves as a practical proof point that smaller operators can point to when assessing risk. Furthermore, they can act as experts and educators to support industry capacity growth. As familiarity with RD grows across the vendor community, approvals are expected to become more routine. In the meantime, it's worth educating vendors on a key difference: RD typically has a higher cetane number than fossil diesel, meaning it ignites faster and burns cleaner. This can loosen ash residue left behind by fossil diesel, so engine filters may need to be changed shortly after making the switch.

[8] Clean Fuels Alliance America, "Original Equipment Manufacturer Positions On Biodiesel & Renewable Diesel, (November 2025) (reference list only - contact the fuel supplier for updated OEM approval lists)

Biodiesel versus RD and fossil Diesel

Biodiesel is also known as FAME, which stands for Fatty Acid Methyl Ester. It has a different chemical composition than RD and fossil diesel. Biodiesel is commonly blended at 5% (B5) or 10% (B10) mixtures in commercial fuels. However, using higher blends of biodiesel requires engine modifications because its chemical structure is different from fossil diesel. In contrast, RD is chemically similar to fossil diesel and can fully replace it in engines.

The approach included:

- Identifying all rental vendors and listing out their equipment on production
- Providing resources from the fuel vendor about OEM approvals and fuel safety
- Obtaining written approval from the vendors to use RD
- Indicating which equipment is approved for RD and ensuring that equipment which is not approved is fueled with fossil diesel

> **If it's good fuel, it's good fuel, and we had no problem with it at all in any of our vehicles.**
>
> *— Mark Angel, Founder & CEO, Krypton Rental Group, Inc.*



Swamper refuelling equipment on *The Greatest*.

[7] See Natural Resources Canada, Transportation fuel prices (updated August 11, 2025)

Fuel Tank Safety Requirements from the Studio Facility

The temporary above-ground fuel storage tank was provided by a rental company with the appropriate legal authority to install, assess, and refuel the tank with diesel. They are legally obligated to place the tank in a risk-free area, and to reassess risks before fueling takes place. A full Code of Practice for fuel storage tanks is available from the Government of Canada.[11] In addition, studio facilities may have specific policies and site restrictions about the use of fuel tanks on their lots, so it is critical to engage with them as early as possible if a fuel tank is of interest to your production. *The Greatest* filmed at the Downsview Hangars facility in North York, managed by The MBS Group. In addition to the Fuel Truck Driver following standard fuel handling procedures, safety requirements at this facility during the pilot project were:

- Tank to be situated on a stable base
- Vehicular impact protection (A in photo)
- Spill containment berm (B in photo)
- Spill kit (inside C in photo)
- Rubber catch basin mat (inside C in photo)
- "No Smoking" signage (D in photo)
- Fuel resistant ground protection mat (E in photo)
- 10 lb. fire extinguisher (F in photo)

This information is provided for context specific to this case study only. Safety requirements from studio facilities are variable and evolving, so it is important to request specific and updated requirements.

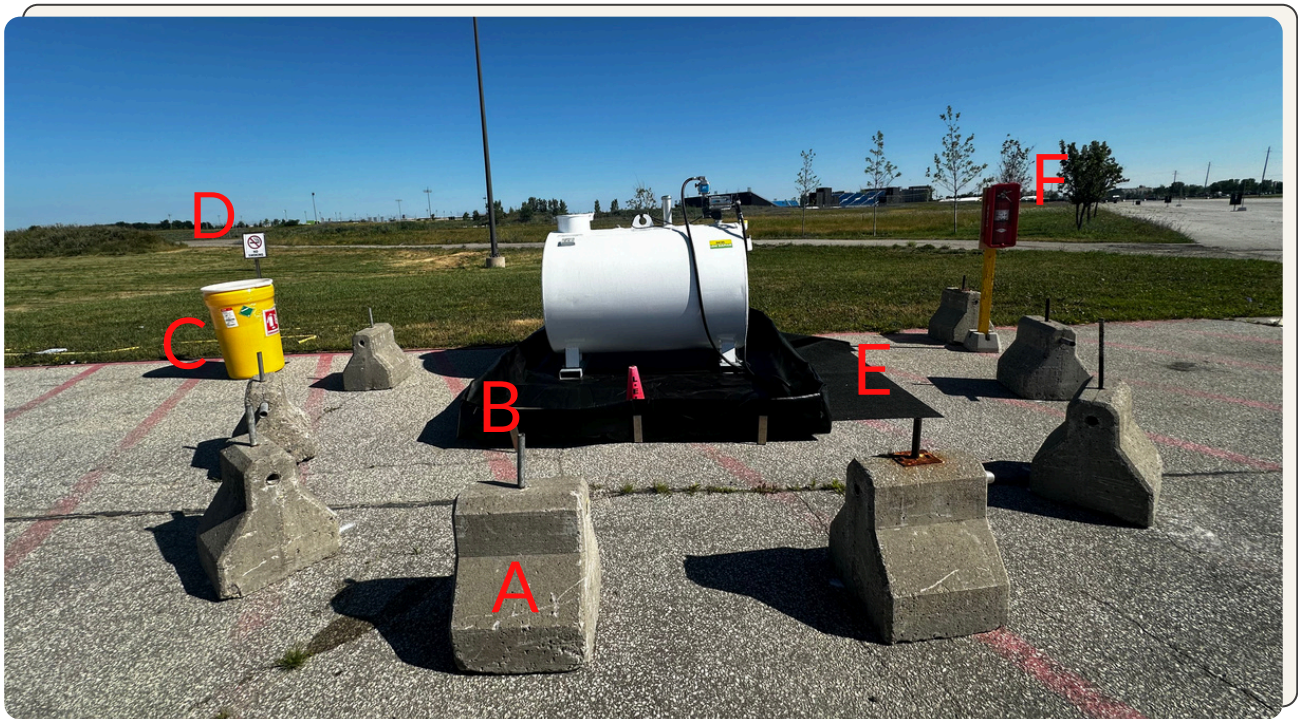


Photo Credit: Naomi Rao, Sustainability Coordinator on The Greatest.

[11] Code of Practice for storage tank systems containing petroleum and allied products: chapter 7 - Canada.ca

How to Implement Renewable Diesel on your Production

Renewable diesel was successfully piloted on *The Greatest*, with several departments and vendors collaborating to overcome challenges. This approach was novel in Toronto, Ontario, and required time, engagement, and collaboration for over two months to begin using the fuel (see Appendix - Pilot Project Timeline). With this case study, productions in the Toronto area can learn from these experiences and streamline their use of RD moving forward.

> **The goal of this initiative was to find those stress points, and even if it meant that we got renewable diesel in the last week or two, we succeeded in getting it up and running. We found the stress points, so the next time it's us or it's one of you, hopefully what we did starts you three or four steps ahead of the process.**
>
> — *Chris Agoston*, *Producer/Line Producer*, The Greatest

Sustainability Coordinators: Checklist for Using RD

01: *Contact fuel vendors for fuel and tank rates and availability:*

- Petro-Canada (branded as EcoDiesel)
- 4Refuel

02: *Consider the following costs:*

If using a fuel tank on site:

- Tank rental (if appropriate and allowed by your facility)
- Fuel delivery fees to the tank (per fuel vendor)
- Safety equipment as required by your facility

Fuel:

- Current production budget for diesel (trucks and generators)
- Estimated daily or weekly diesel consumption for all equipment
- RD premium costs, which fluctuate alongside fossil fuel prices

Labour and time:

- Fuel Truck Driver travel and refueling times between locations
- An efficient approach could be for the Fuel Truck Driver to prioritize RD when it logistically makes sense, but to use fossil diesel as usual for any further location filming days. RD and fossil diesel can be mixed with no issues.

03: *Develop an approach to track impacts:*

- Daily or weekly fuel consumption by trucks and generators
- Fuel card statements and RD fuel invoices

> **The priorities to me are what I call 'big bites'... opportunities where if five or ten people buy in, we can make a massive difference. Renewable diesel seemed like one of those big bites.**
>
> — *Chris Agoston, Producer/Line Producer, The Greatest*

How to Support Productions

Studios and Facilities

01: Review policies about temporary fuel tank storage on your lots

02: Share these safety requirements with productions

Truck and Generator Rental Vendors

01: Recognize that RD meets the same ASTM D975 standards as fossil diesel. All diesel engines can use this fuel with few exceptions.

- Petro-Canada (branded as EcoDiesel)
- 4Refuel

02: Review engine specifications and confirm with productions that your equipment can use RD.

- Consult updated Original Equipment Manufacturer Positions On Biodiesel & Renewable Diesel for resources from your engine manufacturers.

03: Monitor equipment as RD is used. RD burns cleaner than fossil diesel, so you may need to change filters soon after transitioning as the engine is cleaned out.

Studios and Production Executives

01: Familiarize yourself with RD as a transition fuel and ask production for availability in their area and their plan for use.

02: Enable production companies to budget for RD, including potential costs for tank rental and fuel delivery.

03: Require fuel consumption data collection across productions, especially for RD.

04: Educate and engage vendors, crews and departments in fact-based experiential training, including guided case-study presentations.

Appendix: Pilot Project 2025 Timeline

This timeline provides an overview of the actions undertaken for this pilot project.

March

- Production department discussion and planning, including facility engagement
- Fuel vendor outreach
- Truck and equipment rental vendor engagement

April

- Filming begins
- Fuel vendors prepare cost estimates and RD availability timeline

May

- RD becomes available
- Fuel vendors provide cost estimates; the most cost-effective estimate was selected
- Sustainability Team applies for Amazon MGM Studios R&D Funding

June

- R&D Funding is approved
- Production departments are re-engaged to implement the plan
- Truck and equipment rental vendors are re-engaged about the RD usage timeline to gain final approvals for use in their equipment
- Fuel purchase and tank rental forms are completed by the production company

July

- Fuel tank is delivered to the studio lot and hooked up to the electrical grid by the Rigging Gaffer and fuel tank rental company
- On-site safety equipment required by the studio facility is obtained and installed around the fuel tank
- RD fuel is delivered to the fuel tank
- Fuel Truck Driver uses RD fuel in production equipment
- Filming ends and the tank is picked up
- Fuel use data is collected and analysed

Further Information

- Check out the panel about this case study at SPF25 Toronto | Driving Change: Renewable Diesel in Production
- See this Factsheet for Renewable Diesel from the Sustainable Entertainment Alliance.
- The Sustainable Entertainment Alliance has written an open letter requesting collaboration from vendors RE: Renewable Diesel (R100)
- Learn more from Petro-Canada: Our suite of Diesel Products and 4Refuel: Renewable Diesel Delivery