

Frequently Asked Questions In-Use Off-Road Diesel Vehicle Regulation

Best Available Control Technology (BACT) Exemptions July 2013

Q – What is BACT and when is it required?

A – BACT stands for Best Available Control Technology. In the context of ARB's In-Use Off-Road Diesel Vehicle Regulation (Off-Road Regulation), BACT means one way of satisfying the regulation's compliance requirements. A fleet can meet the BACT requirements through either turnover (i.e., retiring a vehicle, designating a vehicle as permanent low-use, repowering a vehicle with a higher tier engine, or rebuilding the engine to a more stringent emissions configuration) or installation of a verified diesel emission control strategy (VDECS). Each year, a fleet must determine if it will be able to meet the fleet average requirements in the Off-Road Regulation for the next January 1st compliance date (beginning 2014 for a large fleet, 2017 for a medium fleet, and 2019 for a small fleet). If not, it must meet BACT requirements by turning over or installing VDECS on a percentage of its total fleet horsepower (hp) that is subject to BACT requirements. The Off-Road Regulation's required annual BACT rates for each fleet size are as follows:

- Large fleets (those with 5,000+ hp):
 - 2014: 4.8 percent
 - 2015 to 2017: 8 percent
 - 2018 to 2023: 10 percent
- Medium fleets (those with 2,501-5,000 hp):
 - 2017: 8 percent
 - 2018 to 2023: 10 percent
- Small fleets (those with up to 2,500 hp)¹:
 - 2019 to 2028: 10 percent.

Example: For the January 1, 2014 compliance date, a large fleet with 10,000 total hp would be required to either meet the fleet average requirements or turn over (or install VDECS on) 480 hp in the twelve months prior to January 1, 2014. Turnover could consist of retiring vehicles, designating vehicles

¹ Small fleets with 500 hp or less may comply with the small fleet requirements listed above, or may comply with an optional compliance path which requires the fleet to phase out Tier 0 and Tier 1 vehicles by 2029: 25% by January 1, 2019, 50% by January 1, 2022, 75% by January 1, 2026, and 100% by January 1, 2029.

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as permanent low-use, repowering vehicles with a higher tier engine, or rebuilding the engines to a more stringent emissions configuration.

Q – What vehicles are exempt from BACT requirements?

A – Vehicles exempt from the performance requirements of the Off-Road Regulation are automatically exempt from BACT requirements. This includes vehicles used more than 50 percent of the time for agricultural purposes, dedicated snow removal vehicles, designated low-use vehicles, vehicles used solely for emergency purposes, and Job Corps vehicles.

Additionally, for all fleet sizes, a vehicle is exempt from the BACT requirements if it qualifies for one or more of the criteria below, as stated in section 2449.1(b)(2) of the Off-Road Regulation:

- On the compliance date, the vehicle is less than 10 years old from the date of manufacture;
- The vehicle meets all of the following specialty vehicle requirements:
 - The fleet has turned over all other vehicles first;
 - No repower is available for the specialty vehicle, as demonstrated to the Executive Officer;
 - A used vehicle with a cleaner engine is not available to serve a function and perform the work equivalent to that of the specialty vehicle, as demonstrated to the Executive Officer; and
 - The specialty vehicle has the highest level PM VDECS installed.
- The vehicle had a Level 2 or 3 PM VDECS installed within the last six years and such VDECS was the highest level available at the time of the installation;
- The vehicle's engine is equipped with an original equipment manufacturer diesel particulate filter that came new with the vehicle, or the vehicle has a Tier 4 interim or Tier 4 final engine; or
- The vehicle has the highest level PM VDECS installed (and operating as intended) prior to January 1, 2013, except that this exemption may be applied to no more than 15 percent of a fleet's total hp as of December 31, 2012.

For small fleets, in addition to the exemptions above, a vehicle is exempt from BACT requirements if it qualifies for one or more of the criteria below, as stated in section 2449.1(b)(3) of the Off-Road Regulation:

- There is no highest level VDECS available for the vehicle's engine as of 10 months prior to the compliance date;

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- The vehicle's engine has already been retrofitted with a Level 2 or 3 VDECS that was the highest level PM VDES available at the time of installation, even if that installation occurred more than six years prior.

Q – I have a vehicle that meets the criteria to be exempt from BACT requirements but is not otherwise exempt from the performance requirements; is the vehicle still included in my total fleet size determination and fleet average calculations?

A – Yes; only vehicles that are exempt from performance requirements (vehicles used more the 50 percent of the time for agricultural purposes, dedicated snow removal vehicles, designated low-use vehicles, vehicles used solely for emergency purposes, and Job Corps vehicles) are excluded from the fleet size determination and fleet average calculations. Additionally, vehicles exempt from BACT are still included in the total max horsepower (hp) on which the BACT requirements are calculated.

***Example:** Fleet L has 4,600 hp in vehicles that are not exempt from BACT and one 500 hp vehicle that is exempt from BACT because it is less than 10 years old. The fleet is considered large because it has a total of 5,100 hp, and the fleet's BACT requirement for January 1, 2014 would be 245 hp (4.8% of 5,100 hp). The 500 hp vehicle is exempt from the BACT requirements (not required to be turned over or retrofitted) for the January 1, 2014 compliance date, but the vehicle's hp is still included in the fleet size determination, the fleet average calculations, and the calculations to determine the BACT requirement each year. The fleet must either meet the fleet average or turn over or retrofit 245 hp in other vehicles that are not exempt from BACT in order to meet their BACT requirement by the compliance date.*

Q – I have a two-engine vehicle. Do both engines have to qualify for a BACT exemption in order for the vehicle to be exempt from the BACT requirements?

A – For a two-engine vehicle to qualify for an exemption, BOTH engines of the vehicle must meet the applicable BACT exemption criteria, unless the vehicle itself meets the criteria. For example, a two-engine vehicle that is less than 10 years old would be exempt from BACT. But a two-engine vehicle that has had highest level PM VDECS installed on only one engine would not be exempt from BACT unless there were no Level 2 or Level 3 VDECS available for the second engine.

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Additionally, section 2449.1(b)(2)(E) of the regulation allows large and medium fleets to claim an exemption from future BACT requirements for a vehicle if the vehicle is equipped with the highest level PM VDECS prior to January 1, 2013. This exemption is capped at 15 percent of the horsepower in the fleet as of December 31, 2012. To be eligible for the exemption, both engines of the two-engine vehicle must be retrofitted if VDECS are available. A vehicle would, however, still qualify for the exemption if no highest level VDECS were available for one of the vehicle's engines, but the other engine has been retrofitted prior to January 1, 2013. In this case, the horsepower from both engines must be counted towards the 15 percent exemption cap. If a fleet has already exceeded its 15 percent cap, a qualifying two-engine vehicle would still be able to obtain a six year BACT exemption for the entire vehicle under section 2449.1(b)(2)(C).

Q – Is there an application process for exempting a vehicle from BACT requirements?

A – Except in the case of a specialty vehicle that meets the criteria mentioned previously in this document, the BACT exemption is automatic, and no application process is required. Specialty vehicles require approval from the Executive Officer in order to be exempt from BACT requirements, since the fleet must demonstrate that no repower is available for the specialty vehicle, and that a used vehicle with a cleaner engine is not available to serve a function and perform the work equivalent to that of the specialty vehicle.

Q – If I remove a VDECS that was installed to comply with or earn credit for BACT requirements, is the vehicle still exempt from BACT requirements?

A – No; once a VDECS is removed, the vehicle will no longer be exempt from BACT requirements, unless another VDECS is installed or the vehicle meets one of the other BACT exemption criteria described above.

Q – What if there are no retrofits (VDECS) available for my vehicle? Am I required to replace the vehicle?

A – If the vehicle is part of a small fleet (less than 2,500 total horsepower), and there are no VDECS available at least 10 months prior to the required compliance date (the first compliance date for a small fleet is on January 1, 2019), then the vehicle is exempt from BACT requirements and is not required to be turned over (replaced, retired, or repowered). However, the BACT requirements still apply to any other vehicles in the fleet that are not exempt.

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If the vehicle is part of a medium or large fleet, and there are no VDECS available for the vehicle, it would not be exempt from BACT requirements unless it meets one of the other criteria (stated previously in this document) for BACT exemption. The fleet could choose to install VDECS on, or turn over, a different vehicle to meet their BACT requirements for the compliance date.

Example 1: *Fleet S, a small fleet, has ten 200 hp vehicles for a total of 2,000 hp, and has a BACT requirement of 200 hp on January 1, 2019. As of March 2018, there were no VDECS available for one of the fleet's 200 hp vehicles, making that vehicle exempt from BACT requirements. If the fleet does not meet the fleet average requirements, the fleet must turn over (or retrofit with VDECS) one of the other nine vehicles in order to meet their BACT requirement by January 1, 2019.*

Example 2: *Fleet M, a medium fleet, has ten 350 hp vehicles for a total of 3,500 hp, and has a BACT requirement of 320 hp on January 1, 2017. As of March 2016, there were no VDECS available for one of the fleet's 350 hp vehicles, but because it is a medium fleet, the vehicle does not qualify for a BACT exemption. If the fleet does not meet the fleet average requirements, the fleet must turn over (or retrofit with VDECS) one of their ten vehicles in order to meet their BACT requirement by January 1, 2017.*

Q – Does a vehicle that is exempt from BACT requirements count towards meeting my BACT requirement for a compliance date?

A – No; the BACT requirement will not be reduced when a vehicle is exempt from BACT. For example, a large fleet with 5,500 total max hp has a BACT requirement on January 1, 2014 of 264 hp ($4.8\% \times 5,500 \text{ hp} = 264 \text{ hp}$). If the fleet has vehicles totaling 800 hp that are exempt from BACT for the January 1, 2014 compliance date, then the fleet would still be required to apply BACT to 264 hp of their other vehicles that are not exempt from BACT in order to meet the requirements for January 1, 2014.

Q – What if all of my vehicles are exempt from the BACT requirements? Do I still have to do something more to comply with the performance standards that year?

A – No; if all vehicles in a fleet are exempt from the BACT requirements for a given compliance date, the fleet will be considered to be in compliance with the performance standards for that compliance date. For example, if a fleet consisted solely of vehicles less than 10 years old on a compliance date, all its vehicles would be exempt from the BACT requirements and hence, the fleet would be in compliance with the performance standards for that compliance date.

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