

BMW Advanced Diesel Technology - FAQ

- **Is the widely varying Cetane level of U.S. diesel fuel, as compared to European diesel fuel, a problem?** How does the engine compensate for this difference? Although a Cetane level of 51 will produce optimum performance in BMW Advanced Diesel models, the engine software is capable of adapting to various Cetane levels.
- **What is the emission control level for the diesel engine?**
The two BMW Advanced Diesel models meet Tier 2 Bin 5 standards.
- **You meet Tier 2 Bin 5, the toughest standards in the world, but those standards will tighten in the future. Seeing as how difficult -- and expensive -- it has been to meet the current standards, what problems do you anticipate in meeting the standards yet to come?**
The two 50 State BMW Advanced Diesel models meet EPA Tier 2 Bin 5 standards. It is too early to make these projections publicly, but BMW engineers work closely with the regulatory bodies, suppliers, and other automakers when necessary to ensure BMW vehicles always lead the industry from the standpoint of balance between performance and "emissions signature."
- **Have the spring rates been modified, specifically in the ZSP (Sport Package)?**
And has the DSC been adjusted for the change in weight balance compared to other models? BMW's commitment to ensure each model lives up to its "The Ultimate Driving Machine®" slogan means each model must be custom-tailored by the engineers. Such adjustments include suspension and DSC calibration, among other things.
- **What percentage of bio diesel is allowed?**
Missouri is going to use 5% bio diesel in the near future? BMW recommends a maximum of 5% bio diesel for its Advanced Diesel models.
- **If the Urea supply is depleted and not able to be refilled immediately, will the engines still operate normally?**
As covered in the online news conference, diesel models will give the driver about 1000 miles of warning before the diesel exhaust fluid is totally depleted. This should give most drivers ample warning before engine restart is not possible.
- **Discuss durability of diesel engines vs. gasoline engines please. Diesels have a long history of durability because the fuel is more similar to oil than gasoline and far less cylinder wall wear is typical. There are no spark plugs and the electronics are designed to be trouble free. A diesel engine is built more robustly to take the higher combustion pressures so overall they are expected to last a long time. Price per gallon of the ad-blue?**
Urea is derived from natural gas so the price will vary. A range may be \$6 to \$12 depending on market value and container size, but we don't have the actual over-the counter price yet.
- **Will the ad-blue tank use up the spare tire space?**
The SCR tanks on the 335d replace the shallow storage space located in the luggage compartment in the gasoline models. Current 3 Series vehicles don't carry a spare tire. On the X5 xDrive35d, the SCR tanks are located within the vehicle where it doesn't compromise the existing spare tire space.
- **How involved is replenishing the exhaust cleaning fluid tank?**
At the oil change the old DEF will be drained and new DEF poured into a filler neck under the hood (X5) or in the trunk, a process similar to adding washer fluid.

- **Some other manufacturers say their injection pressures are higher than the 18,000psi stated. Comment - Bosch 3rd generation CRD system?**
As stated in the news conference, our new diesels operate at 1800 bar, or approximately 26,000psi. Higher operating pressures are constantly in development.
- **Are the maintenance requirement intervals similar for BMW gasoline and diesel engines?**
Yes.
- **What is the expected lifetime of the fuel injectors?**
It's too early to answer this question, but keep in mind the injectors are not considered maintenance items.
- **Are fuel injectors susceptible to fouling over time?**
This is unlikely if clean fuel that meets industry specifications is used.
- **Is diesel a clean enough fuel source so that we don't have to worry about it degrading/affecting the performance of the fuel injection system?**
Clean fuel from a reliable source is very important for any engine.
- **Does BMW foresee meeting future emissions requirements without SCR, by improving combustion/engine-out emissions?**
BMW is working hard to make improvements that save costs and minimize consumer inconvenience, but for now the catalysts are still needed.
- **How will you cope with the wide variety in Cetane ratings in ULSD fuels across the US, Canada, Mexico?**
The systems will adjust up to certain ranges but buying fuel from a clean and reliable source is very important.
- **What added technology (or technologies) needs to exist before diesel engines will be clean enough to pass 50-state emissions regulations without the need for a Urea fluid sprayed into the exhaust stream?**
Currently, selective catalytic reduction (SCR) via injection of Diesel Exhaust Fluid is the best available technology for controlling NOX emissions on diesel vehicles.
- **Is BMW developing diesel technology that could meet emissions rules without needing urea, even in larger engines?**
"Cleaner and more efficient" is a core principal of BMW EfficientDynamics, but there are no breakthroughs to announce at this time.
- **How often will the particulate filter need to be changed?**
It's a maintenance-free device that regenerates automatically as needed, depending on driving conditions. Use of Ultra Low Sulfur Diesel fuel from a reliable source is very important.
- **How will scheduled maintenance be different (schedule wise, etc) than gasoline?**
It will be very similar.
- **Will the X5 diesel have a water separator?**
No.
- **Can you talk about European Delivery? What are the options/availability? I would like to purchase a 335d using ED, but the current gossip is that these types of sales will come out of our local dealership's allocations (unlike other vehicles in the ED program)**
The 335d is eligible for the ED program. Future allocation and availability of the 335d is not known at this time.
- **What is the U.S. on-sale date? When are the 335d and X5d available at BMW Centers?**
The first vehicles will arrive at BMW centers in December.
- **Will there be any difference in standard options between the X5 xDrive30i and the X5 Diesel?**
Can I order the Diesel with Sport Package and 20" wheels? The X5 xDrive35d standard and optional equipment profile will be identical to that of the x5 xDrive30i, with the exception

of Active Steering, which will not be available on the X5 xDrive35d. 20-inch wheels will be available as a dealer-installed option through BMW's Accessories catalog.

- **Is it possible to build a diesel hybrid?**

Does BMW have R&D under way on hybrid diesel? BMW has not announced plans to build a diesel hybrid. The combination of both of these efficient technologies could potentially be produced; however there are many factors that need to be considered including complexity, weight, costs, etc.

- **Checked cost of diesel over gasoline on Sunday and it was \$1 more than gas. At a 30% gain in fuel economy, since the cost of gas has gone down, that wipes out the fuel economy advantage. Isn't this going to make it more difficult to sell diesels in the U.S.?**

BMW gasoline engines require premium therefore the increase to diesel is not quite as much. Diesel has in the recent past been the same price as premium gasoline.

- **What is depreciation on diesels?**

Typically diesel models have a higher resale value than gasoline models due to their efficiency advantages and robustness of their components. At this time we do not have depreciation figures to communicate for the BMW Advanced Diesel models.

- **Is "BMW Advanced Diesel with BluePerformance" a unique branding for North America only?**

What's the short version of that name that people can remember? BMW is rolling out this nomenclature for its Diesels world wide that have similar emissions technologies.

- **What are the key regions of North America - including Canada - that will get the two diesels?**

Do all dealers get at least one? Typically BMW launches new models by allocating at least one model for each dealer. At this time we do not have details of BMW's allocation strategy.

- **What sort of impact will these two big diesels have on BMW NA's CAFE rating?**

These models have class leading efficiencies which could potentially lower BMW's CAFÉ figure. This also depends heavily on the volume sold.

- **Is this diesel initiative meant to help shore up BMW's overall bottom line really?**

Or is it more so an investment in the future for once the recession has ended? BMW feels there are many advantages of offering diesel models in the US: to satisfy the needs of customers migrating to more fuel efficient vehicles and the ability for BMW to reduce the overall fleet CO2 output.

- **AMERICA wants a 2 door diesel car. The 1 or 3 series with a manual transmission is the answer. IS BMW WILLING TO LISTEN TO US?**

We look forward to seeing how American customers respond to the first two BMW Advanced Diesel models. We're considering the next steps, but it's too soon to predict what comes next. A big part of BMW's success is the willingness to consider customer feedback in all of BMW's future model plans.

- **Will there be a tax incentive on these vehicles like on the VW Jetta TDI?**

BMW is currently in the process of filing the necessary paperwork with the IRS and this process is not yet final. We anticipate a tax incentive on each Advanced Diesel model and will confirm the results upon receiving them.

- **Will BMW be focusing on diesel technology now instead of creating an efficient hybrid system or at least expand the hydrogen technology?**

On the contrary, BMW Advanced Diesel is just one element of BMW's overall EfficientDynamics initiative. We're taking a broad approach. We showed BMW's first ActiveHybrid Concept destined for the production, the X6 ActiveHybrid in Detroit. In LA, we'll show a hybrid concept based on BMW's all new 7 Series, which is also destined for production. In LA, we'll also show the MINI E, our first production battery-electric vehicle and, of course, BMW's work on hydrogen is ongoing.

- **Will BMW concentrate on relatively small inline diesel engines, or will you eventually**

bring a V-8, high-performance diesel for the 5 Series and 7 Series?

It's hard to know what the future holds. Right now, given the performance of BMW's 3.0-liter inline six with 265 horsepower and 425 lb-ft of torque, it's hard to imagine the need for a larger engine. We're also getting great power from BMW's smaller engines. If act BMW's 2.0-liter twin-turbo diesel four puts out over 200 horsepower and nearly 300 lb-ft of torque.

- **Are you adding more vehicle options to justify the \$5.5K increase in cost of the BMW Diesel vs. the Gasoline 6 Cylinder vehicles?**

The price difference is \$3800 between the 335i and 335d (only \$2475 if the 335i is equipped with automatic transmission), and \$4100 from X5 xDrive30i to X5 xDrive35d. BMW's Advanced Diesel is a performance enhancement, providing V8-levels of power with the efficiency of a six-cylinder.

- **Why is the price of the BMW Diesel vs. the BMW Gasoline 6 Cylinder (almost \$5K) so expensive compared to the Mercedes Benz Diesel vs. the Mercedes Benz Gasoline 6 Cylinder, which is only \$1,500?**

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- **Are you adding more vehicle options to justify the \$5.5K increase in cost of the BMW Diesel vs. the Gasoline 6 Cylinder vehicles?**

The price difference is \$3800 between the 335i and 335d (only \$2475 if the 335i is equipped with automatic transmission), and \$4100 from X5 xDrive30i to X5 xDrive35d. As a standard feature the Diesel models bring a tremendous blend of performance and efficiency not yet possible with gasoline engine technology.

- **First I hope BMWNA will re-evaluate pricing. In light of the fact that diesel runs 1.00 more per gallon right now, it is hard to justify nearly a 5k premium. Wouldn't 3000 to 3500 over the 3.0 make much more sense?**

The price difference is \$3800 between the 335i and 335d (only \$2475 if the 335i is equipped with automatic transmission), and \$4100 from X5 xDrive30i to X5 xDrive35d. The better efficiency of BMW Advanced Diesel models will bring a further reduction in operating cost for most consumers.

- **What are the sales projections for each of these vehicles?**

BMW prefers to avoid quoting projections in advance of a model launch, and will wait to see how the market demands play out for each of the new Advanced Diesel models.

- **Average miles from one gallon of ad-blue?**

As discussed in the online news conference, diesel exhaust fluid (DEF or AdBlue) consumption is projected to roughly parallel the oil-service interval for these vehicles, but driving habits and other circumstances (such as high elevation operation, towing, or motorsport-style driving) may increase demand for DEF. Jugs of DEF/AdBlue will be available to consumers through various outlets and the filling process is similar to adding windshield washer fluid to your existing vehicle.

- **How have you prepared BMW service technicians in the U.S. for diesel engines, an engine type with which they are not familiar?**

BMW of North America has taken a 3-level approach to train technicians for BMW Advanced Diesel. In autumn 2007, we rolled out web-based training on basic diesel operation (Level 1). For Level 2, we brought technicians in for an instructor-led two-day course on basic diesel operation, wherein we discussed mechanical differences between the two engine types, and provided systems training on turbochargers, common rail direct injection, exhaust emissions treatment, etc. Finally, starting in July 2008, technicians have been attending the "Advanced Diesel" instructor-led course (2 days). To-date we have trained more than 1 technician per center to this 3rd level. The Advanced Diesel course specifically concentrates on systems unique to the BMW 335d and X5 xDrive35d. Diagnostics, vehicle operation, and specific services and repairs are covered at this level. Simultaneously, non-technical personnel (Service Advisors, etc.) have attended the web-

based (Level 1) version of this technical training by way of training requirement

- **Has the IRS approved tax credits for your diesels?**

How much for the 3 series and how much for the X5? BMW is currently in the process of filing the necessary paperwork with the IRS and this process is not yet final. We anticipate a tax incentive on each Advanced Diesel model and will confirm the results upon receiving them.

- **Do you see other EfficientDynamics solutions offered in Europe moving to the US market (i.e. start stop)?**

BMW's EfficientDynamics strategy is an important part of its entire product lineup, and each EfficientDynamics innovation is evaluated for implementation wherever possible. While many EfficientDynamics features are already in place on US models, it is likely that several more such features will arrive stateside as the vehicles evolve.

- **Will the 335d have the same finance rates as the 335i?**

BMW Financial Services will announce finance rates for BMW Advanced Diesel models closer to the vehicles' delivery dates.

- **With all of the benefits diesel has to offer over gasoline, do you ever see a point in the future where gasoline becomes obsolete for BMW?**

As you may know, diesel drivetrains account for roughly half of BMW's annual vehicle sales in Europe, thanks to the benefits you referenced. Only time will tell what the regulatory and market-driven mandates will be for the future of diesel vehicles. For now, BMW feels diesel vehicles are a good way to offer US consumers a fresh choice: vehicles that feature V8 performance with the operating efficiency of a 6-cylinder.

- **Will owners of the BMW diesel products be eligible for tax credits?**

BMW is currently in the process of filing the necessary paperwork with the IRS and this process is not yet final. We anticipate a tax incentive on each Advanced Diesel model and will confirm the results upon receiving them.

- **Are you looking at the price comparison as \$44,725 for 335d vs. the 335i \$42,800 with A/T or the 328i \$36,100?**

Which is closer on performance and MPG? The price difference is \$3800 between the 335i and 335d (only \$2475 if the 335i is equipped with automatic transmission) BMW's Advanced Diesel is a performance enhancement, providing V8-levels of power with the efficiency of a six-cylinder. With 425 lb-ft of torque, the 335d price and performance skew closer to those of the 335i sedan (automatic) than the 328i sedan (automatic). The efficiency, at 36mpg highway, is considerably better than both gasoline models.

- **As mentioned BMW plans to have a hybrid version in the future, if so when is the planned introduction to the line-up?**

BMW will show more ActiveHybrid concepts in the coming months, but production and on-sale timelines have not been announced.

- **Could you compare the performance of the Diesels with their Petrol counterparts?**

With 425 lb-ft of torque, the 335d performance skews closer to that of the 335i sedan (automatic) than that of the 328i sedan (automatic). The efficiency, at 36mpg highway, is considerably better than both gasoline models. The X5 xDrive35d model has a similar relationship to its gasoline X5 counterparts.

- **Many people are expecting a diesel engine for the X3, is this something BMW looked at?**

A smaller SAV with a diesel engine might be a great boost in the X3 sales before the model change. We look forward to seeing how American customers respond to the first two BMW Advanced Diesel models. We're considering the next steps, but it's too soon to predict what comes next. A big part of BMW's success is the willingness to consider customer feedback in all of BMW's future model plans.

- **Why not bring over your more efficient single turbo diesel to maximize fuel economy, at least as an option?**

The twin-turbo, direct injection, aluminum 6-cylinder diesel engine currently provides the best balance between responsive, V8-like performance and increased fuel efficiency. BMW will continue to explore multiple engine options for the US market.

- **Is the 335d going to be offered with a manual transmission as well in the near future?**

There are no plans to do so at this time. The twin-turbo diesel engine is best suited to the sporting characteristics and torque-handling capacity of the automatic transmission from BMW's V8 engines.

- **Will BMW offer a four cylinder in the US?**

The Green Car of the year 118d would promote even higher efficiency than the 335d. We look forward to seeing how American customers respond to the first two BMW Advanced Diesel models. We're considering the next steps, but it's too soon to predict what comes next. A big part of BMW's success is the willingness to consider customer feedback in all of BMW's future model plans.

- **Four-cylinder diesel is big volume in Europe, and could mimic V-6 power U.S. customers are accustomed to -- at much better fuel economy. Don't you agree?**

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- **Any chance for 4-cyl. Diesel for U.S.?**

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- **What about the 123d?**

Can you tell us what's going on with that also? We have no confirmed plans beyond the 335d and X5 xDrive35d however many parties, including the US EPA, have recognized the role that diesel can play in reducing both reliance on foreign sources of oil and reduction of greenhouse gas emissions. Given BMW's well-established diesel expertise, we have a number of options to draw from if the market demands.

- **Will BMW also eventually offer a 4-cylinder diesel in the 1 and 3 series?**

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- **Would we see a four-cylinder diesel twin-turbo engine in the U.S?**

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- **How much weight does this entire system add in comparison to the standard gasoline 3-liter twin-turbo I-6?**

The curb weight for the 335i (automatic) is 3606 lbs and for the 335d is 3825 lbs.

- **Why not a four-cylinder diesel?**

You use that technology in Europe. We look forward to seeing how American customers respond to the first two BMW Advanced Diesel models. We're considering the next steps, but it's too soon to predict what comes next. A big part of BMW's success is the willingness to consider customer feedback in all of BMW's future model plans.

- **With the 335d available with a manual transmission?**

The twin-turbo diesel engine is best suited to the sporting characteristics and torque-handling capacity of the automatic transmission from BMW's V8 engines. So the automatic is the only transmission specified at this time.

- **Why no manual option?**

I've driven the manual 3-series diesel in Europe and it works well. Likewise, the Jetta TDI with manual is delightful. The twin-turbo diesel engine is best suited to the sporting characteristics and torque-handling capacity of the automatic transmission from BMW's V8 engines.

- **What will be the MSRPs for both vehicles, and how much of a premium is that above a comparable BMW model?**

How much will they cost, including transportation? \$44,725 for the 335d and \$52,025 for the X5 xDrive35d. Both prices include destination & handling.

- **What is the U.S. income tax credit for both vehicles in 2009?**

BMW is currently in the process of filing the necessary paperwork with the IRS and this process is not yet final. We anticipate a tax incentive on each Advanced Diesel model and will confirm the results upon receiving them.

- **What percentage of the U.S. market do you project diesel models achieving in coming years?**

This era of modern clean diesel in the US is new territory for a number of manufacturers. Volumes will be driven by demand. It is difficult to predict but clearly consumers are more open to clean and efficient alternatives than ever before. JD Power sees Diesel models accounting for about 15% of light duty passenger cars by the year 2015.

- **You don't typically talk volumes, but in this case it's a little less risky to do so. How many 335ds and X5 35ds will be brought over initially?**

This era of modern clean diesel in the US is new territory for a number of manufacturers. Volumes will be driven by demand. It is difficult to predict but clearly consumers are more open to clean and efficient alternatives than ever before. JD Power sees Diesel models accounting for about 15% of light duty passenger cars by the year 2015.

- **Does BMW NA expect the Diesel range to grow in the coming years in the US market?**

If so what models are we likely to see with a diesel engine? We look forward to seeing how American customers respond to the first two BMW Advanced Diesel models. We're considering the next steps, but it's too soon to predict what comes next. A big part of BMW's success is the willingness to consider customer feedback in all of BMW's future model plans.

- **What are the prospects for your more civilian-level and more efficient European diesels such as the four-cylinders coming to North America also?**

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- **Can we please know all of the particular standard equipment specifications that come on 335d and X5 xDrive35d for North America?**

Please reference www.bmwusa.com for complete information.

- **Were the dealers a key part of finally getting your diesel powertrains into North America?**

Or was it a company decision and the dealers needed convincing? BMW dealers and customers have encouraged the introduction of BMW Advanced Diesel to the US market.

- **Fuel prices are all over the place. How does this affect BMW's ability to commit to a full-range diesel effort and make the financials of it work?**

BMW's middle name is "motor" and BMW has the ability to offer different drivetrain types to suit consumer demand. BMW will continue to explore multiple engine options for the US market.

- **Does BMW really feel confident in a high-volume diesel rebirth in North America, or will you also be bringing us hybrid variants?**

BMW diesel engines are efficient, powerful, and well-established worldwide, but hybrid

vehicles can also bring specific advantages in the areas of dynamic performance and efficiency.

- **Why have you stuck with the top-end x35d engine instead of bringing the outstanding new 3.0d engine some of us tried recently in Europe in the new 330d?**

We have no confirmed plans beyond the 335d and X5 xDrive35d however many, including the US EPA, have recognized the role that diesel can play in reducing reliance on foreign sources of oil and reduction of greenhouse gas emissions. Given BMW's well established diesel expertise, we have a number of options to draw from if the market demands.

- **Will the new 3.0L I-6 diesel be offered in the U.S. in the new 7-Series?**

At this time the only drivetrain specified for the new 7 Series in the US is the 4.4L twin-turbo V8 with direct injection, rated at 400 horsepower and 450 lb-ft of torque.

- **Is the towing capacity of the X5d the same as in the X5 gasoline models?**

The towing capacity of the X5 xDrive35d is the same 6,000 lbs. As with other X5 models, and the X5 xDrive35d shares technologies like Trailer Stabilization making it an impressive and efficient tow vehicle.

- **Who holds patents on this technology and did BMW have to license it?**

BMW's diesel engine specialists in Steyr, Austria developed BMW's Advanced Diesel technology working with a number of partners, including Bosch.

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