



SmartWay Transport Partnership **Carrier FLEET Model User Guide**

Welcome to the SmartWay Transport Partnership! The User Guide will introduce you to the SmartWay Carrier FLEET Model. **FLEET** is an acronym for: **F**reight **L**ogistics **E**nvironmental and **E**nergy **T**racking **P**erformance Model.

What is the FLEET Model and why am I filling it out?

The FLEET model is the measurement tool that EPA uses to demonstrate the beneficial actions that companies are taking to save fuel and reduce emissions.

The Carrier FLEET model:

- Is a **required** part of Carrier Partner's participation in the SmartWay Transport Partnership.
- Is a multifunctional tool that many SmartWay Partners find very useful to help them optimize their fleet performance
- Helps you track your fleet's fuel economy and will provide you with estimates of how much carbon dioxide, harmful oxides of nitrogen, and particulate matter emissions your company can prevent from entering the atmosphere through your actions.
- Tracks your baseline performance and also helps you plan what you want your fleet to look like in the future.
- Can be used as a simple cost benefit evaluation tool for choosing what new technologies you may want to add to your truck specifications.

This user guide will walk you through the FLEET model and answer many of your questions. If you have a question that is not answered here, please feel free to contact your SmartWay Representative.

FLEET Model Components

The main parts of the FLEET model are identified on the tabs at the top of the opened worksheet.

Carrier Information tab: This section simply collects some basic information about your company.

Current Fleet Evaluation and Current Fleet Summary tabs: These sections are used to determine your baseline performance level, and summarize the results. Once these sections are completed the Model is sent via e-mail to your EPA SmartWay Representative for review. **You will then be recommended to Partner status.**

Action Plan Evaluation and Action Plan Summary tabs: These sections are used to project and plan what your fleet will look like in three years and is filled out once your FLEET model is approved by your SmartWay Representative. When you are finished with the Action Plan you will send this to your SmartWay Representative who will review it and work with you to make sure you are making as many cost effective improvements as possible.

Annual Update and Annual Update Summary tabs: These sections help you track your annual progress toward the goals you set in your Action Plan. As its name indicates, the Annual Update is filled out once per year after you have established your goals in your completed Action Plan. Annual updates should be sent to your SmartWay Representative so they can see your progress toward your goals you developed in your Action Plan and are required deliverables to remain in good standing as a SmartWay Partner.

The **Print** tab allows you to print the entire FLEET Model. This can be up to 60 pages long, depending on your selections.

The **Import from Version 1C** tab is for use **ONLY**. **DO NOT USE THIS TAB.**

The **Zip File for Mailing** tab is for internal use only. Do not zip files for e-mailing to the EPA. **These files will not penetrate the EPA fire wall.**

The **Show Video Overview of Tool** tab has been disabled.

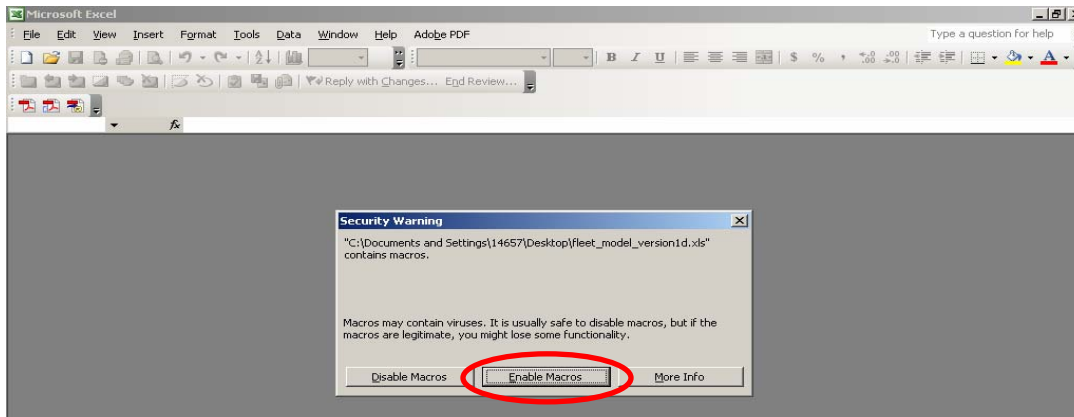
A	B	C	D	E	F	G	H	I	J	K	L
Carrier Information	Current Fleet Evaluation	Current Fleet Summary	Action Plan Evaluation	Action Plan Summary	Annual Update Evaluation	Annual Update Summary	Print	Zip File for Mailing	Import From Version1C	Show Video Overview of Tool	
Version1.0 SmartWayTRANSPORT Carrier Information											
1. CONTACT INFORMATION Print This Page											
a. Please fill in the following general company information about your company. b. Please identify a primary contact.											
Company Name						Company Contact					
Address						Title					
City						Phone					
State						Fax					
Zip						Email Address					
Web address											
SCAC Code											

Let's get started on evaluating the baseline performance of your fleet!

Opening & Closing the FLEET Model

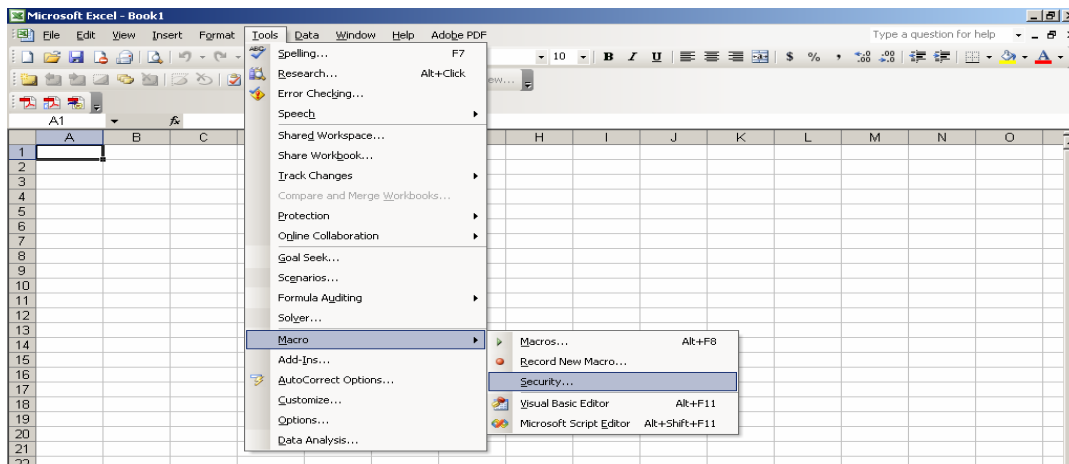
In order to open the FLEET model in Microsoft Excel, Macros must be enabled on your computer or certain features within the model will not work properly.

1. Open the Model.
2. Click on Enable Macros. You are now ready to begin entering your fleet's data.

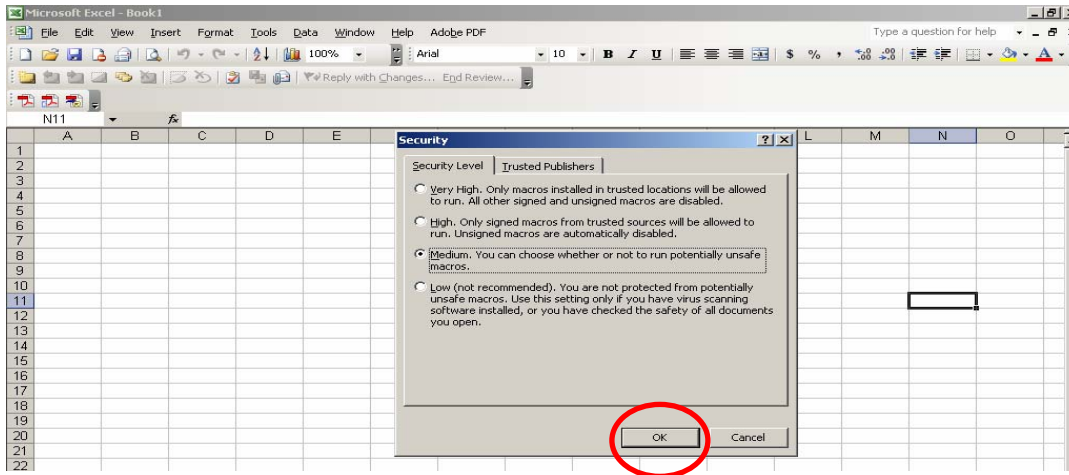


NOTE: If you have a security violation, a Windows message box will appear. To correct this situation and enable the Macros to run, perform the following:

1. Click on Tools on your toolbar.
2. Scroll down to Macros
3. Choose Security
4. Choose Medium. This security setting will allow macros to run in Excel.



5. Click OK.



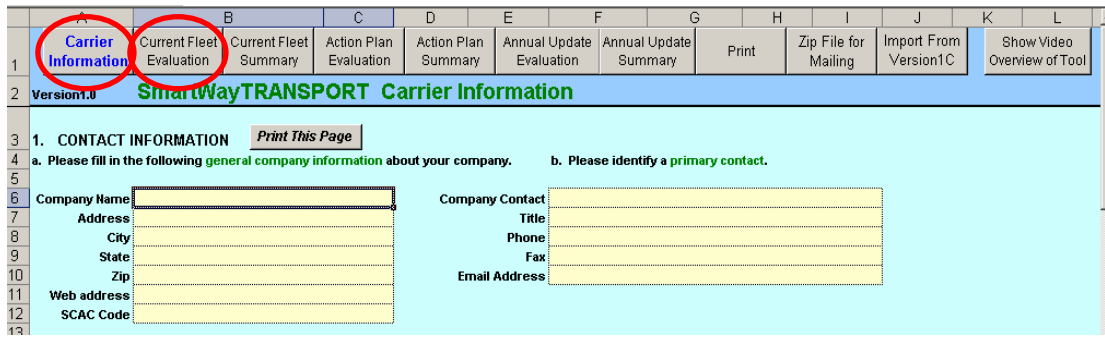
6. Close the FLEET Model and exit Excel.
7. Re-launch Excel and you should be able to open your FLEET Model.

Filling in Carrier Information, Current Fleet Evaluation and Current Fleet Summary

Please Note:

- ***Users need only enter information in the cream-colored or yellow cells. The green and gray cells contain formulas that perform calculations and give totals for the data you are entering.***
- ***There are also notes embedded in the Model that help define terms. Run your cursor arrow over little corner red triangles for these helpful hints.***
- ***It is helpful to use the Excel “Insert Comment” feature (right click of mouse) to record for your reviewer, how your data was summarized. For instance: 50 trucks x 10 hours/day x 300 days/year. Typing notes in cells will assist you when you complete your Annual Updates...you’ll know exactly how last year’s data was calculated.***

When you are new to the Partnership and filling out the FLEET Model for the first time, you need to complete Carrier Information (See Tab) and Current Fleet Evaluation (See Tab). Once these are completed, send the model via e-mail to your so that they may review it, approve it and recommend that your company be a SmartWay Partner.



Tab 1: Carrier Information

Section 1: Contact Information

1. Enter Company Name and all information below, including the SCAC code.
2. Enter Company Contact and all information below.

Section 2: Fleet Information

1. Complete:
 - a. Indicate the number of straight trucks, tractors and trailers operated by your company. Percent ownership will determine how we classify your fleet.
 - b. Indicate trailers types.
 - c. Indicate the percentage of fleet operating in each mode.
 - d. Indicate the commodities carried by your fleet.
 - e. If applicable, indicate the percentage of total freight operations of your company, parent company, or a subsidiary represented by the fleet entered into this model.

Tab 2: Current Fleet Evaluation

The Current Fleet Evaluation is a detailed list of your current fleet characteristics based on the **most recent complete 12 months reporting data**. This section of the model will generate your SmartWay Fleet score (in Current Fleet Summary section) that determines whether or not you may **immediately** use the SmartWay logo.

Note: Even though you may qualify for the SmartWay logo with a qualified FLEET Model performance score, your Action Plan must be completed before the logo will be available to you.

There are **three** sections to the Current Fleet Evaluation that need to be completed.

STEP 1: General Information about Your Existing Fleet. Remember to split your fleet between straight trucks and tractor-trailers (combination trucks) and between trucks on short haul (predominately urban miles) vs. long haul (predominately highway miles) routes.

1. Enter the evaluation base year. The base year should be the most recent calendar year for which you have 12 reporting months of data.
2. Enter the number of trucks.
3. Enter average miles per truck per year.
4. Enter total fuel consumption in gallons.
5. Enter average payload. Under the average payload per trip, please include the average round trip payload (that is, total tons carried, divided by the total number of trips, equals average payload per trip) NOT one-way payload or Gross Vehicle Weight (GVW).
6. Enter the average idling hours per truck, per year.

Please note: The average idling hours per truck asked for here...are actual recorded idling hours from Engine Control Module (ECM) or other on-board computer reports. If these reports are not available, then estimated idling hours may be calculated, based on the duty cycles of the trucks in your fleet.

The screenshot shows an Excel spreadsheet titled "fleet_model_version1d.xls". The spreadsheet is divided into several sections for fleet evaluation. The current section is "STEP 1: General Information About Your Existing Fleet", where the year "2006" is entered. Below this, there are two main categories of trucks: "Straight Trucks" and "Combination Trucks". Each category has a table with columns for "Total # of trucks", "Average Miles per truck per year", "Total Miles", "Total Fuel Consumption Gallons", "Average payload (tons) per trip", "Average Idling Hours per truck per year", and "Total Idling Hours". The "Combination Trucks" table includes a "Totals" row with the following values: 342 trucks, 92,156 miles, 31,517,352 miles, 5,007,813 gallons, 20.00 tons, 679 hours, and 232,218 total idling hours. A yellow callout bubble with the text "2006 Long Haul Idling Hours" points to the cell containing the value 232,218 in the "Total Idling Hours" column of the "Totals" row for "Combination Trucks".

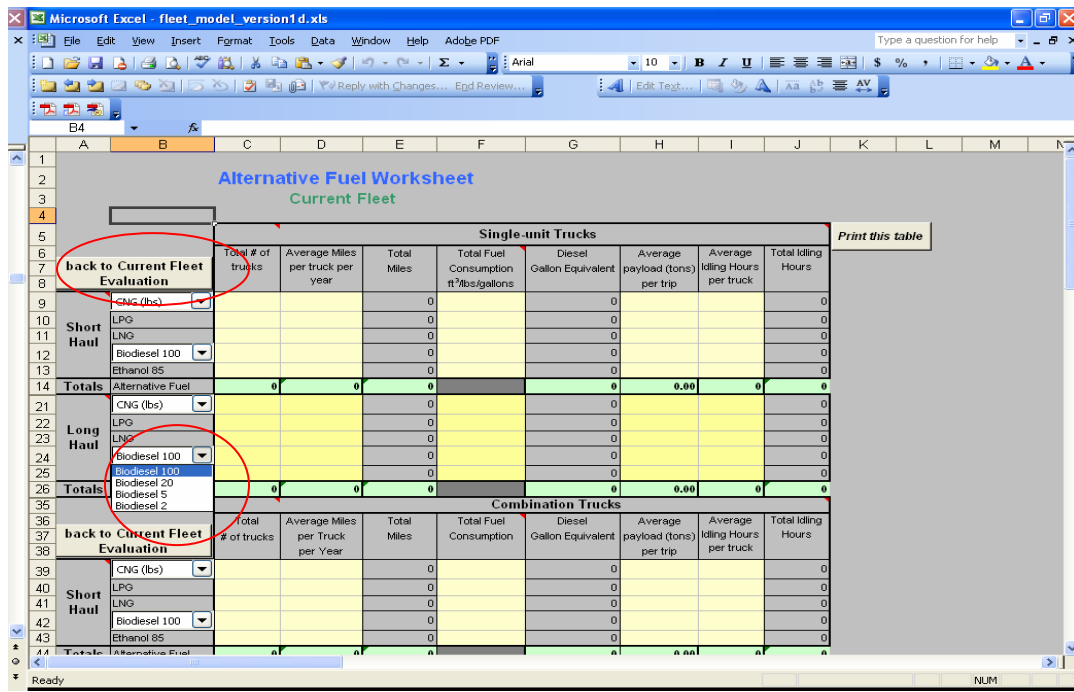
		Total # of trucks	Average Miles per truck per year	Total Miles	Total Fuel Consumption Gallons	Average payload (tons) per trip	Average Idling Hours per truck per year	Total Idling Hours
Straight Trucks								
Short Haul	Diesel			0				0
	Gasoline			0				0
	Alternative Fuel	0	0	0	0	0	0	0
Long Haul	Diesel			0				0
	Gasoline			0				0
Combination Trucks								
Short Haul	Diesel			0				0
	Gasoline			0				0
	Alternative Fuel	0	0	0	0	0	0	0
Long Haul	Diesel	342	92,156	31,517,352	5,007,813	20.00	679	232,218
	Gasoline	0	0	0	0	0.00	0	0
Totals	Diesel	342		31,517,352	5,007,813	20.00	679	232,218
	Gasoline	0		0	0	0.00	0	0
		0		0	0	0.00	0	0

If your company uses *Alternative Fuel*, click on the cell(s) labeled Alternative Fuel and another spreadsheet will open, enabling you to record your alternative fuel use.

Alternative Fuel Worksheet
Current Fleet

		Single-unit Trucks								Print this table
back to Current Fleet Evaluation		Total # of trucks	Average Miles per truck per year	Total Miles	Total Fuel Consumption ft ³ /lbs/gallons	Diesel Gallon Equivalent	Average payload (tons) per trip	Average Idling Hours per truck	Total Idling Hours	
Short Haul	CNG (lbs)			0		0			0	
	LPG			0		0			0	
	LNG			0		0			0	
	Biodiesel 100			0		0			0	
	Ethanol 85			0		0			0	
Totals	Alternative Fuel	0	0	0		0	0.00	0	0	
Long Haul	CNG (lbs)			0		0			0	
	LPG			0		0			0	
	LNG			0		0			0	
	Biodiesel 100			0		0			0	
	Ethanol 85			0		0			0	
Totals	Alternative Fuel	0	0	0		0	0.00	0	0	
		Combination Trucks								
back to Current Fleet Evaluation		Total # of trucks	Average Miles per Truck per Year	Total Miles	Total Fuel Consumption	Diesel Gallon Equivalent	Average payload (tons) per trip	Average Idling Hours per truck	Total Idling Hours	
Short Haul	CNG (lbs)			0		0			0	
	LPG			0		0			0	
	LNG			0		0			0	
	Biodiesel 100			0		0			0	
	Ethanol 85			0		0			0	
Totals	Alternative Fuel	0	0	0		0	0.00	0	0	

When the spreadsheet is opened, you will see drop-down menus with different types of CNG and Biodiesel. Click on the appropriate mixed-fuel. (See below)



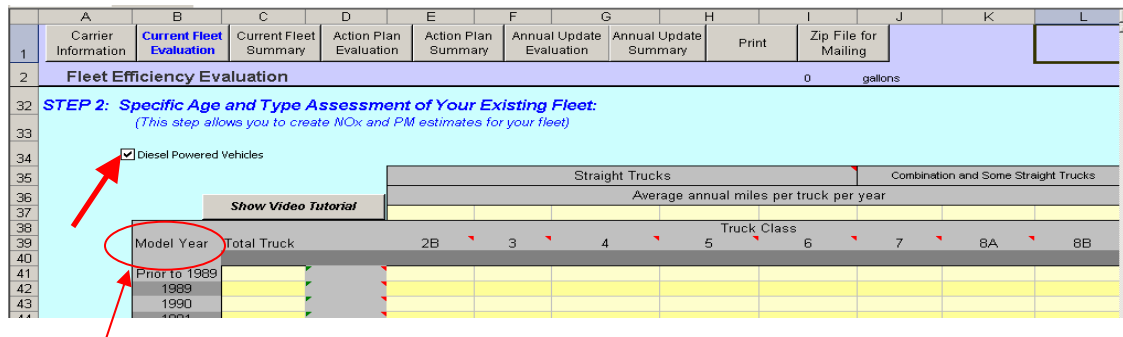
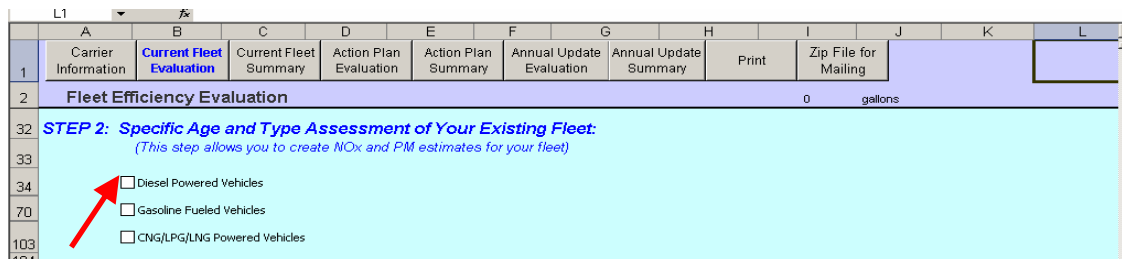
Then, enter all data in the row: Total # of trucks, Average Miles per truck per year, etc.

When you are finished with the Alternative Fuel Worksheet, click on the box labeled “**back to Current Fleet Evaluation.**” To take you back to the main Model.

Scroll Down to STEP 2: Specific Age and Class Assessment of Your Existing Fleet.

STEP 2: Specific Age and Type Assessment of Your Existing Fleet by Engine Model Year.

1. Click on diesel, gasoline or CNG (etc.), depending upon the fuel type(s) used to power your fleet. Most carrier fleets are diesel.
2. This opens up the table that will allow you to enter, in the first column, the total number of trucks by *engine* model year. You will then enter the average annual miles by truck class (top of table, yellow row) and number of trucks by *engine* model year and class. This identifies the emission performance capability of the engine. And, the 2007 engine cell will be applicable until 2010 engines are introduced. (If table does not appear, you may not have enabled the macros in Excel.)
3. Depending on your fleet, you may be required to complete more than one fuel usage type.
4. **Once you have entered your fleet information by age and class, click on the Calculate button at the bottom right side of the table to complete the Particulate Matter (PM) and Oxides of Nitrogen (NOx) emissions savings.**



Please note: "Model Year" refers to the ENGINE Model Year.

Scroll down to STEP 3: Evaluation of SmartWay Strategies in Your Existing Fleet

STEP 3: Evaluation of SmartWay Strategies Integrated into Your Existing Fleet

Enter your data in the appropriate yellow or cream-colored cells. After you enter your information, you'll notice CO₂, Nox and PM numbers appearing in the green cells. These will automatically be transferred to the Carrier Fleet Evaluation Summary and contribute to your SmartWay score.

Helpful Hint: For every cell you enter calculated data into, please Excel's INSERT COMMENT feature (right click of mouse) to record how you arrived at the number you are entering in that cell. The comment could include your data source, a department head, their phone, comments. This is a tremendous help when Annual Updates are due...and you haven't touched this spreadsheet for 12 months. (The comments in the Evaluation tab do not copy to Annual Update nor the Action Plan. To read them, you will need to go back and forth between the tabs when you want to reference the notes.)

Idling Hours 2006 Baseline

FM Step 3

Idling Control Strategies

2006 Baseline

Enter the total # of HOURS each idling control strategy was used: <i>Show Video Tutorial</i>		SmartWay Truck Idling Control Strategies				
		Combination Trucks		Straight Trucks		Default Idling Hours
		Short Haul	Long Haul	Short Haul	Long Haul	
Direct Fired Heater	Diesel		136,800			Short Haul
	Gasoline					2
	Alternative Fuel					Long Haul
Auxiliary Power Unit	Diesel		24,000			10
	Gasoline					Help Calculating Idling Hours Saved
	Alternative Fuel					
Truck Stop Electrification	Diesel					
	Gasoline					
	Alternative Fuel					
Driver Tag Teams	Diesel					Long Haul Idling Hrs. Saved In 2006 = 183,030
	Gasoline					
	Alternative Fuel					
Double Drivers	Diesel					
	Gasoline					
	Alternative Fuel					
Engine Shutdown	Diesel		22,230			
	Gasoline					
	Alternative Fuel					
Other	Diesel					
	Gasoline					
	Alternative Fuel					

Idling Control Strategies:

Note: This is the area of the spreadsheet where you will enter idling hours saved by using a certain idling technology or strategy for an entire 12-month period.

1. To enter data into the spread sheet, click on the Idling Control Strategies box, in the above spreadsheet.
2. Then, enter the number of idling hours saved by each idling technology or strategy.

NOTE: *There is a calculator tool to help you formulate reasonable saved hour estimates. Just click on “Help Calculating Idling Hours Saved” and a window will open for you to plug in your numbers.*

Example for Direct Fired Heater (DFH):

100 Trucks x 10 hr.s/day x 300 days/year (Days in your operating year) = idle hrs. saved per year using a Direct Fired Heater = 300,000 hours saved using a DFH.

3. To exit, click on the same box.

Definitions of Idling Control Strategies:

- **Direct Fired Heaters or bunk heaters**, are devices that can reduce idling by providing in-cabin heat for drivers in cold temperatures. These are usually used in the months of November through end of March (Approximately 181 days—182 in leap years.)
- **Auxiliary Power Units (APUs)** are a combination of a small heater, a compressor for air conditioning and an alternator used to provide heat, air conditioning, power for household electrical devices and engine heat. These can be used all year long, for heating and cooling.
- **Truck Stop Electrification (TSE)** are systems at truck plazas that allow drivers to draw electrical power and usually, heating, cooling, telecommunication and Internet hookups from a ground source.
- **Driver Tag Teams** involve one driver going from point A to point B, where a *second driver* takes truck from point B to point C. Because of the driver switch, overnight idling is not necessary.
- **Double (Team) Drivers** are *two drivers* in the cab instead of one. This allows for continuous movement of freight, eliminating the need for overnight stops and idling. Once the first driver reaches their maximum allowed drive time, the second driver takes over while the first driver rests/sleeps in the sleeping berth.
- **Engine Shutdown** can be as simple as a corporate “shut down” or “no idle” policy, or it can be more complex with the use of electronic devices or software encoded onto the engine control chip to automatically shut the truck engine down.
This is where you can record hotel stays and Pre-Pass for your drivers, as well.
- **Other** cannot be used to enter data for strategies your company uses to reduce idling. (This area is not operational in this Model version.) ***These need to be entered in the Miscellaneous area of the Model. Be sure and tell your SmartWay Representative about ANY other thing you are doing to reduce idling...we are here to recognize your efforts to save fuel.***

Aerodynamic Devices: Combination and Aerodynamic Devices: Single Unit Trucks and Step Vans/Package Delivery Vans

1. To enter data into the spread sheet, click on the Aerodynamic Devices box for your type(s) of truck.
2. Enter the total number of trucks utilizing each strategy for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Definitions of Aerodynamic Devices

Note: You may run your cursor over the red triangles in the upper right-hand corner of device listed for the same definitions that are outlined below.

- **Aero Profile Tractor** generally has a short, streamlined hood with aerodynamic contouring with slightly angled grill and an exhaust pipe that is usually behind the cab rather than along the side.
- **Cab-Over-Engine Tractor** positions the driver seat over the engine. There is no front hood on these tractors.
- **Integrated Cab Roof Fairing** is usually an original equipment manufacturer (OEM) component that extends from the front windshield of the truck to the rear of the cab with enclosed sides that line up with the side of the cab.
- **Cab Roof Fairing** is an OEM component or an after-market-add-on, this fairing extends partially over the cab of the truck with enclosed sides.
- **Cab Roof Deflector** is a straight piece of plastic or fiberglass that extends from the top of the cab at an angle. It usually has open sides and may be retractable.
- **Cab Side Fairing** extends downward from the base of the cab between the wheels of the tractor, covering the open space and streamlining the fuel tank(s). Most cab side fairings have steps to reach the cab that are molded directly into the fairing.
- **Cab Air Dam Front Bumper** is a rounded bumper that improves airflow within the engine compartment as well as under-cab airflow. It is usually plastic and the same color as the cab, rather than the vertical chrome bumpers on more traditional tractors.
- **Cab Aerodynamic Mirrors** are mirrors with rounded casings on the front that eliminate flat surfaces. They are usually black or colored plastic rather than the flat-backed, chrome mirrors on more traditional tractors.
- **Trailer Gap Reduction** is achieved by adding either a cab and/or a trailer gap reducer:
 - Tractor cab extenders are vertical additions to the rear sides of the tractor that fan out slightly and reduce the space between the tractor and trailer.
 - Trailer gap reducers are usually rounded additions to the sides and possibly top of the front of the trailer that also reduces the gap between the tractor and trailer.
- **Trailer Side Skirts**, or trailer fairings, extend down from the bottom of the trailer to cover part of the open space between the tractor and the rear wheels.
- **Nose Cone** is a rounded deflector attached to the front of a straight truck or box van that extends slightly over the cab of the truck. These devices may also be known as aerodynamic bubbles. *The Nose Cone is listed in Single Unit Trucks and Step Van/Package Delivery Vans Areas ONLY.*
- **Flat Bed Trailer Tarps** properly drawn over irregularly-shaped loads can improve airflow and decrease wind resistance to improve fuel economy.

- **Trailer Tail** is an addition to the rear of the trailer used to reduce aerodynamic drag. Some versions attach to the rear sides and top of the trailer and others, are additions that can cover the entire back side (boat tails).

Tire Technology

1. To enter data into the spread sheet, click on the Tire Technology box.
2. Enter the total number of trucks using each strategy for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Definitions of Tire Technology

- **Single Wide-Base Tires** and wheels are lighter than two standard tires and wheels. Weight savings of 800 to 1,000 pounds can improve fuel economy by reducing rolling resistance and tractor tare weight (empty weight). For tankers, they can improve safety and stability of the trailer by lowering the center of gravity. Wide-base tires can be retreaded.
 - **Automatic Tire Inflation:** this device automatically monitors tire pressure and provides pressurized air when tires need it, on a continuous basis. Proper tire pressure reduces rolling resistance, increases fuel economy, and reduces tire wear and chance of tire failure. Air may be supplied from a hub-mounted compressor or from a central air supply driven by the truck's air brake compressor. If only trailers are equipped, the "proportional rule" applies, i.e., if 50% of trailers are equipped, only 50% of trucks can earn fuel-saving credit in the Model.
- Input truck numbers for automatic tire inflation if there is EITHER an automatic tire inflation system installed on the tractor/trailer, or a regularly enforced maintenance system in place that guarantees proper tire inflation. If there is a policy, all the trucks in the fleet can earn fuel-saving credit.**
- **Other** could be low-profile or low rolling resistance tires that have shown to increase truck fuel economy. This information needs to be input in the *Miscellaneous* section of the Model, as cells in this area do not calculate savings. This cell is not operational.
 - **Weight Reduction** refers to components that reduce the tare weight of the *tractor*. Down-sizing to a smaller engine can provide significant savings. Components like wheels, axle hubs, fuel tanks and the cab frame made of lighter weight materials like aluminum reduce tare weight, as well. *Trailer weight savings could also be added here...proportional, up to the number of tractors.*

1. To enter data into the spread sheet, click on the Weight Reduction box.
2. Enter the truck numbers and the reduced vehicle weight in POUNDS utilizing this strategy for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Advanced Lubricant Technology is low friction engine and drive train lubricants known as synthetic engine oil and synthetic transmission and drive train lubricants reduce wear and increase maintenance intervals. These technologies can improve fuel efficiency by as much as three percent by reducing friction.

1. To enter data into the spread sheet, click on the Advanced Lubricant Technology box.
2. Enter the total number of trucks utilizing this strategy for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Engine and Truck Upgrades include direct drive transmissions and single axle trailers. Direct drive transmissions have higher gear ratios that provide a quicker, more powerful start and would be good for stop-and-go operations. Single axle trailers weigh less and have less tire rolling resistance due to fewer tires in contact with the road.

1. To enter data into the spread sheet, click on Engine and Truck Upgrades box.
2. Enter the total number of trucks utilizing this equipment that for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Trailer Strategies include the use of larger capacity trailers which free up tractors and drivers for other revenue generating loads. Additionally, double and triple trailers may be an effective method of moving a larger amount of freight with a single tractor and driver. (*Note: In filling this section out, know that the percentage of trailers accounted for should equal 100% for all tractor/trailer combinations in your fleet.*)

1. To enter data into the spread sheet, click on the Trailer Strategies box.
2. Enter the PERCENTAGE of these trailers that were used for the most recent calendar year for which you have 12 months of data. (Again, this should total 100%.)
3. Click on the same box to exit.

Speed Management Policy can be implemented with little or no cost. The most effective programs combine engine controls with driver training and incentives. Reduced highway speeds can dramatically improve fuel efficiency. A long haul truck that reduces its speed from 70 miles per hour to 65 miles per hour can improve fuel efficiency by approximately five percent. SmartWay gives credit for truck speeds controlled from 55 miles per hour to 65 miles per hour.

1. To enter data into the spread sheet, click on the Speed Management Policy box.
2. Enter the total number of trucks next to the appropriate speed for the most recent calendar year for which you have 12 months of data.
3. EPA also can give credit for governed speed management under 70 mph, but over 65 mph, in the **Miscellaneous** section of the Model.

4. Click on the same box to exit.

Intermodal Shipping combines the flexibility of truck transport with efficiency of rail transport. Intermodal services offered include trailer-on-flat car (TOFC), container-on-flat-car (COFC) and intermodal-specific trailer chassis. Over long distances, intermodal can cut overall fuel use by 65%, as compared to truck-only moves.

1. To enter data into the spread sheet, click on the Intermodal Shipping box.
2. Enter the total NUMBER of **intermodal trips** (See trip definition below) and **average trip length** (See below) utilizing this strategy for the most recent calendar year for which you have 12 months of data.
3. Enter Rail types used. Percentage of type used should total to 100%.

Intermodal Definitions

- *One intermodal trip = Each trailer or trailer equivalent (53 ft.) you ship by rail (Regardless of the number of trains used.)*
- *Average trip length = Number of rail miles plus drayage miles at each end.*
- *Rail type: Average = Mixture of freight cars only.*
- *Rail type: Mixed Freight = Passenger and freight cars on the same train.*
- *Rail type: Double Stack = One trailer on top of another.*
- *Rail type: TOFC = Trailer on Flat Car.*
- Enter *Rail Type* totaling 100% in cells C678, C679 and C680.

4. If your data supports it, Column F default values can be changed.

- 4 Click on the same box to exit.

Hybrid: Diesel-Electric has two power sources, the diesel engine and an electric motor with a battery pack. The electric motor provides a power boost when needed for acceleration, climbing hills, etc. The electric motor captures energy that would otherwise be lost when braking and uses it to recharge the battery pack. Hybrid vehicles are best used in stop-and-go applications such as pickup and delivery and parcel delivery operations. Currently, the Model accommodates hybrid models ranging from years 2000 through 2007.

1. To enter data into the spread sheet, click on the Hybrid: Diesel-Electric box.
2. Enter the total NUMBER of units and fuel economy, mpg, utilizing this strategy for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Reflashing is reconfiguring the engine control chip with new software that recalibrates the tractor engine. This recalibration lowers nitrogen oxide (NO_x) emissions by slightly modifying the combustion parameters within the engine. This procedure is performed at no cost to the truck owner for engines purchased between the years of 1994 and 1998 from: Caterpillar, Cummins, Detroit Diesel, Mack, Renault, Navistar/International and Volvo.

1. To enter data into the spread sheet, click on the Reflashing box.
2. Enter the total NUMBER of trucks in model years 1994-1998 and their average annual miles that was used for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

Miscellaneous includes areas where you can enter fuel-saving strategies that are not listed above and for which you have tracked fuel savings. Strategies like progressive shifting, driver training, operations packages like Qualcomm, Xata, etc., driver incentive plans, No-Idling Policies, Pre-Pass, E-Z Pass, **low-rolling-resistance tires** (See below.), low profile tires and hotel stays. Talk to your SmartWay Representative about any other technologies or strategies that you may be able to include in your FLEET Model. These “miscellaneous” fuel savings can range anywhere from 1-3% or more, if supported by data, and contribute to your overall fuel and emissions savings. When strategy is unsupported by your data, you can provide conservative percentage estimates.

Note: Low-Rolling-Resistance Tires

In the SmartWay FLEET model, there are 3 categories under which to log one's use of fuel-saving tire technologies: single wide tires, automatic tire inflation (ATI), and "other." Single wide tires are the new generation single wide tires, wider than 14", and are used on the drive and trailer axles, one tire per axle end. ATI is just that, an active system that inflates tires, not a passive tire pressure monitoring-only system, although ATI systems include tire pressure monitoring. Under "other," at the discretion of the Partner Account Manager and a SmartWay Partner, fleets that can demonstrate a fuel savings with energy efficient dual tires may take credit for this fuel savings, with a cap of 2% fuel savings for duals. (The single wide tires fuel savings potential is capped at 3%). Because of the range in tire performance, even among fuel-saving models, over a number of truck operations, the fuel saving estimates used in the FLEET model are intended to represent a broad range of trucking fleet applications, and a number of different "energy" tire models.

For SmartWay-certified trucks, the eligibility criteria are specific to a given individual truck model, so the tire models in this equipment specification are specific. EPA conducted testing on several tire models, and collected 3rd party test data from a number of tire manufacturers to develop a list of tires that - if used on the steer, drive, and trailer axles - can provide a 3% fuel savings, relative to the best-selling tires from the largest three commercial tire OEMs. The following tires meet the equipment specification for a SmartWay tractor and trailer. These tires are:

- Bridgestone
 - Steer R287, R280
 - Drive M720, Greatec
 - Trailer R195, Greatec
- Continental
 - Steer HSL
 - Drive HDL Eco Plus
 - Trailer HTL
- Goodyear
 - Steer G395 LHS Fuel Max
 - Drive G305 LHD Fuel Max
 - Trailer G316 LHT Fuel Max
- Michelin
 - Steer XZA3, XZA2
 - Drive XDA Energy, XDA3, X-One XDA
 - Trailer XTA Energy, XT1, X-One XTA

As EPA continues to refine its data on tire performance, we may update the FLEET model to require specific tire models, as we do on the SmartWay designation.

1. To enter data into the spread sheet, click on the Miscellaneous box.
2. Enter name of technology or strategy, in cream-colored box labeled “Enter Technology Name”e.g., nitrogen-filled tires, or driver training...Then, in the box labeled “Fuel Savings % of Enter Technology,” immediately below “Enter Technology Name” box, enter the percentage of fuel saved using that technology or strategy that was used fleet-wide for the most recent calendar year for which you have 12 months of data.
3. Click on the same box to exit.

PM and NOx Control Technologies (This section is for retrofitted equipment only.)
(See green bar on screen.)

There are two items, a Particulate Filter/Trap and an Oxidation Catalyst, with average savings already calculated for you in this area. If they apply to your circumstance:

1. Check the boxes to the left of the gray Technology Name box; new yellow cells will appear.
2. In Part B, enter the number of trucks with the selected technology in order to calculate emission savings.

If you have manufacturer-specific equipment you want to verify against the EPA’s Verified Technology List, you **must be connected to the internet in order to view the list.**

1. Click on “View EPA’s Verified Technology List” to record the EPA-approved technologies you are using.

2. Enter name of technology for a particular manufacturer in the space provided, e.g., Caterpillar, Inc.'s Catalyzed Converter Muffler, (CCM)
3. Enter the PM and NOx data from the list.
4. Click on the box to left of where you entered data (you must check this box last).
5. In section B, enter the number of trucks with this technology.
6. When finished, click the **Calculate** button to fill in emissions savings.

Definitions of Oxidation Catalyst, Particulate Filter, and Exhaust Gas Recirculation

- **Oxidation Catalyst (OC)** is a device added to the exhaust system of a tractor that reduces the amount of particulate matter (PM) that is emitted while having a negligible impact on tractor fuel efficiency.
- **Particulate Filter (PF)** is similar to a diesel oxidation catalyst and is one of the two major technologies being employed to meet the 2007 emission regulations. A particulate filter is considered a “flow-through” device whereby the exhaust is forced through a honeycombed shaped, ceramic filter. (Details are included in the attached FLEET Model glossary.)
- **Exhaust Gas Recirculation(EGR)** is another major technology to meet the 2007 engine regulations that leads to a decrease in NOx formation... (Details are included in the attached FLEET Model glossary.)

Tab 3: Current Fleet Summary

The Current Fleet Summary is the section that automatically summarizes the fuel efficiency and emissions savings from your current fleet data entries. This information is used to calculate your score to obtain the SmartWay logo. The following summary charts are included in this tab:

1. Fleet Efficiency Summary is the calculated results of your entries in the Current Fleet Evaluation,

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Carrier Information	Current Fleet Evaluation	Current Fleet Summary	Action Plan Evaluation	Action Plan Summary	Annual Update Evaluation	Annual Update Summary	Print	Zip File for Mailing				
2	Fleet Efficiency Summary												
3	1. Fleet Efficiency Summary												
4													
5	Show Video Tutorial	Fuel Economy	CO ₂	PM	NOx	CO ₂	PM	NOx	CO ₂	PM	NOx	CO ₂	
6				Tons		Tons/ Truck			Grams/ Mile				
7	Fleet Performance												
8	Diesel	0.0	0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
9	Gasoline	0.0	0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
10	Alternative Fuel	0.0	0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
11	Total:		0	0	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
12	Projected Fleet Performance Without Existing SmartWay Improvements												
13	Diesel	0.0	0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
14	Gasoline	0.0	0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
15	Total:		0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
16	Total Savings Resulting From Existing SmartWay Improvements												
17	Emissions Saved		0	0.000	0.0	0.0	0.0000	0.000	0.0	0.0000	0.00	0.00	
18	% Savings		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

SmartWay Score = (D22/40+E22/80+F22/80)*100

If this formula is not on your Model, you can type it in yourself on Row 23 of the Model. (Blank area)

Interpretation of above Carrier SmartWay score equation:

D22=CO2 %Savings

E22=NOx % savings

F22=PM % savings

This FLEET composite score will determine your Carrier Shipper Index Factor (SIF), which is used by Shipper Partners to assess their status in the Partnership. (Posted on our website.)

<u>SmartWay Score</u>	<u>Shipper Index Factor</u>
1.0 or higher	1.25
.75 to .999	1.00
0.0 to .749	.75
Carriers not in SmartWay	0.00

In Row 19..."Emissions Saved"...is your totaled emission savings from your data entered into the Current Fleet Evaluation tab. On this row, you have summarized for you...the CO2, PM and NOx emissions saved by your fleet...in tons, tons/truck, grams/mile and grams/ton-mile.

2. Specific Savings From Each SmartWay Strategy Used on Existing Fleet is a useful financial tool that you may use to calculate cost / benefit and payback periods for other SmartWay strategies. This tool is helpful in evaluating strategies that you have already implemented or more importantly, used in evaluating future investments in fuel-saving strategies you are considering by plugging in current fuel costs.

Carrier Information	Current Fleet Evaluation	Current Fleet Summary	Action Plan Evaluation	Action Plan Summary	Annual Update Evaluation	Annual Update Summary	Print	Zip File for Mailing			
Fleet Efficiency Summary											
2. Specific Savings From Each SmartWay Strategy Used on Existing Fleet											
Average cost of fuel per gallon?											
Diesel per gallon	Gasoline per gallon										
	\$1.50										
Show Video Tutorial	Diesel Gallons Saved (Including Alternative Fuel Diesel Equivalent Gallons)	Gasoline Gallons Saved	Tons CO ₂ Saved	Tons PM Saved	Tons NO _x Saved	Cost Savings	Cost of Device/unit	Total Units	Total Costs	Years Paid Back	Print this
Idling Technology:											
DFH	0	0	0	0	0	\$0			\$0	0.00	
APU	0	0	0	0	0	\$0			\$0	0.00	
TSE	0	0	0	0	0	\$0			\$0	0.00	
Driver Tag Teams	0	0	0	0	0	\$0			\$0	0.00	
Double Drivers	0	0	0	0	0	\$0			\$0	0.00	
Engine Shut Down	0	0	0	0	0	\$0			\$0	0.00	
Other	0	0	0	0	0	\$0			\$0	0.00	
Aerodynamic Packages (Combination Trucks):							Cost of Device/unit	Total Costs	Years Paid Back		
Aero Profile Tractor	0	0	0			\$0		\$0	0.00		
Cab over engine tractor	0	0	0			\$0		\$0	0.00		
Integrated cab roof fairing	0	0	0			\$0		\$0	0.00		
Cab roof fairing	0	0	0			\$0		\$0	0.00		
Cab roof deflector	0	0	0			\$0		\$0	0.00		

3. Graphical Description of Environmental Performance is a graphic representation of your fleet's environmental performance with and without strategies.

Should you have questions as you are filling-out your FLEET Model, feel free to contact your SmartWay Representative to assist you. Once you complete the above steps, you are ready to submit your FLEET Model to your SmartWay Representative via e-mail for approval.

Now is the time to ask...What growth do you envision for your fleet? What strategies will increase your SmartWay score? Answers to these questions will move you forward to the next step...developing your Action Plan!

Final Checklist for Current FLEET Model Evaluation

- Did you complete the “Carrier Information” tab?
- Did you complete all three (3) steps of “Current Fleet Evaluation” tab?
- Did you hit the “Calculate” button at the bottom of Step 2 on the “Current Fleet Evaluation” tab?
- Save and close the model, e-mail it to your SmartWay Representative.

IMPORTANT: Wait until FLEET Model approval is received from you SmartWay Representative, before going forward with preparation of Action Plan.

Once your FLEET Model as been reviewed and approved, and you are a SmartWay Partner, you are ready to move on to the next step completing your three-year Action Plan!

Timeframe: A carrier's Action Plan is officially due six months after submitting the signed Carrier Agreement. However, we **strongly** encourage you to complete your Action Plan within **one month** of completing the baseline FLEET Model, while all this information in fresh in mind.

NOTE: You may want to test “what-if” technology purchases in the Action Plan SUMMARY (where payback periods are calculated) to assist you on formulating your FINAL Action Plan for submittal to EPA.

What is the Action Plan Evaluation and Why am I filling it out?

The Action Plan Evaluation is your educated estimate as to where your company's fleet is headed in three years' time and is a required deliverable to remain a Partner in good standing.

You are filling out the Action Plan Evaluation in order to incorporate more of the SmartWay strategies and technologies listed in Step 3 of the Current Fleet Evaluation. The EPA encourages you to create an ambitious, yet realistic (achievable) fuel savings and emissions reduction plan in this section.

While the EPA understands that the trucking industry changes very rapidly and companies must adapt to remain competitive, it can be difficult to predict what your company and the industry will look like in three years' time. The Action Plan Evaluation then is a **current estimate** of your company's fleet investment plan over the next three years.

Let's get started on your Action Plan!

The layout of the Action Plan Evaluation section is identical to the Current Fleet Evaluation. **To start your Action Plan Evaluation, you may click on the “Use Baseline” button.** Your current fleet characteristics are then *copied automatically* into the Action Plan section. You can now change or add to those baseline numbers to incorporate growth, new policies, strategies and technologies into this three-year plan.

Ignore the comment that appears after you run your cursor over the corner of the year box. Please enter the third year AFTER your baseline year. For example, if your baseline year is 2007, this box should have 2010 entered into it.

**Idling Hours – Reasonableness Test
2006 Baseline vs. 2009 Action Plan**

FM Step 1

2009 Action Plan

		Combination Trucks				2009	
		Total # of trucks	Average Miles per Truck per Year	Total Miles	Average payload (tons) per trip	Average Idling Hours per truck per year	Total Idling Hours
Short Haul	Diesel			0			0
	Gasoline			0			0
	Alternative Fuel	0	0	0	0.00	0	0
Long Haul	Diesel	342	92,156	31,517,352	20.00	600	205,200
	Gasoline			0			0
	Alternative Fuel	0	0	0	0.00	0	0
Totals	Diesel	342		31,517,352	20.00		205,200
	Gasoline	0		0	0.00		0
	Alternative Fuel	0		0	0.00		0
All vehicles		342		31,517,352	20.00		205,200

Long Haul Idling Hrs. 2009

**Idling Hours – Reasonableness Test
2006 Baseline vs. 2009 Action Plan**

FM Step 3

Idling Control Strategies

2009 Action Plan

Please enter the # of HOURS each strategy was used to eliminate idling:

Show Video Tutorial

		2009 SmartWay Truck Idling Control Strategies				Default Idling Hours	
		Combination Trucks		Straight Trucks			
		Short Haul	Long Haul	Short Haul	Long Haul	Short Haul	Long Haul
Direct Fired Heater	Diesel		136,800			2	
	Gasoline						
	Alternative Fuel						
Auxiliary Power Unit	Diesel		51,000			10	
	Gasoline						
	Alternative Fuel						
Truck Stop	Diesel						
	Gasoline						
	Alternative Fuel						
Engine Shutdown	Diesel		22,230				
	Gasoline						
	Alternative Fuel						
Other	Diesel						
	Gasoline						
	Alternative Fuel						

APU's
2006 = 24,000 hrs
2009 = 51,000 hrs
Change = 27,000 hrs

Long Haul Idling Hrs. Saved In 2009 AP = 210,030 Hrs

Idling Hours Calculator

Total number of trucks using a technology:

Hours per truck per day using that technology:

Total number of days per year each truck uses that technology:

Total Hours Idling Saved Per Year. (Please copy this number into the appropriate cell.):

Idling Hours – Reasonableness Test 2006 Baseline vs. 2009 Action Plan

FM YEAR	LONG HAUL TRUCKS FM STEP 1	AVG. IDLING HOURS FM STEP 1	TOTAL IDLING HOURS FM STEP 1	TOTAL IDLING STRATEGIES FM STEP 3
2006	342	679 Hrs	232,218 Hrs	183,030 Hrs
2009	342	600 Hrs	205,200 Hrs	210,030 Hrs
CHANGE		79 Hrs	27,018 Hrs	27,000 Hrs
Trucks		x 342	/ 342	/ 342
TOTAL		27,018 Hrs	79 Hrs	79 Hrs

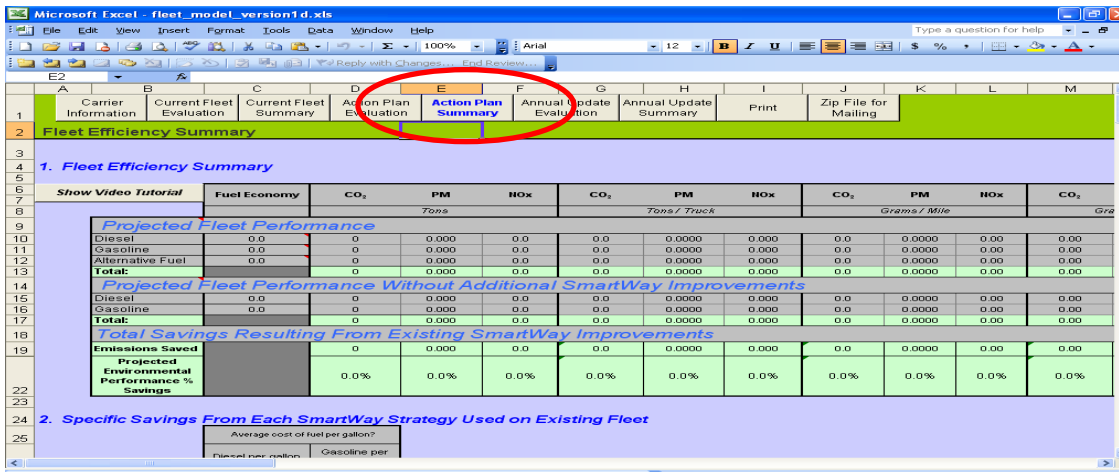
CONCLUSION

Partner has demonstrated that the idling control strategies, (APU's in this example), will achieve the reduction in average idling hours projected in the 2009 Action Plan.

Reasonableness Test Passed

Action Plan Summary

The Action Plan Summary is identical to the Current Fleet Summary section; it provides your fuel efficiency and emissions savings from your predicted future fleet configuration, as entered in the Action Plan Evaluation. This section is automatically filled in when the Action Plan Evaluation is completed.



Section 2 at the bottom of the Action Plan Summary sheet is identical to the one in the Current Fleet Summary. It is a useful tool for doing financial analysis and learning payback periods based on the *future* fuel cost that you estimate.

Average cost of fuel per gallon?		Diesel Gallons Saved (including Alternative Fuel Diesel Equivalent Gallons)	Gasoline Gallons Saved	Tons CO ₂ Saved	Tons PM Saved	Tons NO _x Saved	Cost Savings	Cost of Device/unit	Total Units	Total Costs	Years Paid Back
Diesel per gallon	Gasoline per gallon										
\$3.00											
Idling Technology:											
DFH		0	0	0	0	0	\$0			\$0	0.00
APD		0	0	0	0	0	\$0			\$0	0.00
TSE		0	0	0	0	0	\$0			\$0	0.00
Driver Tag Teams		0	0	0	0	0	\$0			\$0	0.00
Double Drivers		0	0	0	0	0	\$0			\$0	0.00
Engine Shut Down		0	0	0	0	0	\$0			\$0	0.00
Other		0	0	0	0	0	\$0			\$0	0.00
Aerodynamic Packages (Combination Trucks):											
								Cost of Device/unit	Total Units	Total Costs	Years Paid Back
Aero Profile Tractor		0	0	0			\$0			\$0	0.00
Cab over engine tractor		0	0	0			\$0			\$0	0.00
Integrated cab roof fairing		0	0	0			\$0			\$0	0.00
Cab roof fairing		0	0	0			\$0			\$0	0.00

Annual Update Evaluation

Note: This section must be completed one year after submission of the Current Fleet Evaluation.

The Annual Update Evaluation is completed once a year and the **first one** is due by June 30th of the year after the first full year following the base line year of the FLEET Model. This section serves as an interim report and will allow you to see your fleet's progress (from a fuel efficiency and emissions standpoint) over the past year toward your Action Plan goals.

Annual Update Summary

The Annual Update Summary is identical to the Current Fleet Summary and Action Plan Summary sections, only in a more concise format. It provides your fuel efficiency and emissions savings from your fleet configuration after your first and second years in the Partnership. This section is automatically filled in when the Action Plan Evaluation is completed. ***Do not click on the "Use Baseline" button on the Annual Update Evaluation's Step 1. Using this button may corrupt your Action Plan data.***

Once again, the financial tool at the bottom of the Annual Update Summary is a useful tool for doing your financial analysis and learning payback periods based on fuel costs at the time of the annual update. It is worthwhile seeing how the financial impacts of certain strategies have changed based on changes in fuel prices during your first 12 to 24 months in the Partnership.

Final Checklist for the Action Plan Evaluation & Summary

- Did you complete all three (3) steps of "Action Plan Evaluation" tab?
- Did you hit the "Calculate" button at the bottom of Step 2 on the "Action Plan Evaluation" tab?
- Save and close the model, e-mail it to your SmartWay Representative.

Publication Number: EPA 420-F-06-061
February 2008