

# HOW TO: PLUG IT IN

GREEN STAR AIR QUALITY



## Alaskan Winter “Plug It In” Protocol



### Plug @ 20°

When the temperature drops below 20° F, plug in your engine block heater if you do not park in a garage.



### Plug in for just a few hours

Only warm up your engine block heater for two to three hours before driving. That’s all it needs for maximum efficiency.



### Timers save money

Use an outdoor timer to limit the time your engine block heater is on to two to three hours to save electricity.



### Cold idling

If you start your engine cold (if you can’t plug in), be sure to warm it up for 10 minutes. Idling for more or less than 10 minutes causes more pollutants, which also means the engine is running inefficiently and using more fuel.



### Unplug it

Remember to unplug before you drive away!



# WHY? The Dark Side of Cold Starts

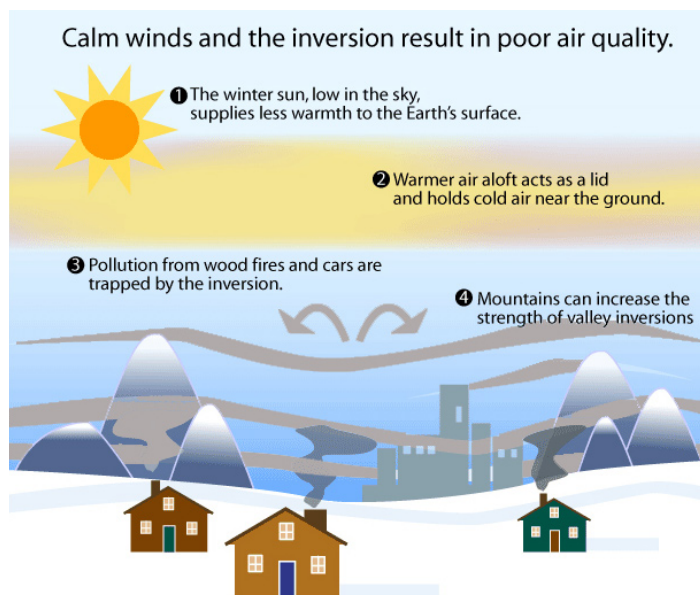
Carbon monoxide levels rise in Anchorage from November through February for two reasons:

## 1. Colder Temperatures

During the winter months, cold-engine starts, excessive warm-up idling, and the operation of indoor heating systems result in elevated carbon monoxide levels.

## 2. Air Inversions

During a northern winter, the diminished sunlight doesn't effectively heat the ground, causing pollution to remain in a cold layer near the ground. During spring and summer, the earth's surface is warmed by the sun causing low lying air to warm and rise up, mixing the atmosphere and diluting any air pollution.



**Carbon monoxide (CO)** is a colorless, odorless, poisonous gas produced by incomplete burning of carbon in fuel. Elevated CO levels can be hazardous to human health as they reduce the delivery of oxygen to the body's organs and tissues. CO can be most harmful to those who already suffer from heart and respiratory disease.

Studies show that **77% of CO emissions in Anchorage come from vehicles.** By "cold starting" a vehicle in the winter, you drastically increase these emissions. For example, each winter weekday morning in Anchorage, about 70,000 cars and trucks are cold-started. The highest levels of ambient CO occur in the morning after these motorists leave for work.

**Plugging in can reduce CO emissions by up to 60%.**

So when it is 20° F or colder...



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