



a fisherman's guide to

FUEL EFFICIENCY

Improving fuel efficiency can help fishermen to save money and reduce their carbon footprint.

HERE'S HOW:

In 2013, the Alaska Fisheries Development Foundation, the Alaska Longline Fishermen's Association, and the Alaska Sea Grant Marine Advisory Program collaborated on a project to conduct energy audits on small Alaska fishing vessels. The energy audits collected baseline data on how much energy various systems on a fishing vessel use and provide context for energy conservation measures.

The information below is based on the Alaska Sea Grant publication "Saving Money with Fishing Vessel Energy Audits", a result of this collaborative project.

GENERAL OPERATION

Adjust your autopilot

Ensure autopilot is tuned to minimize yaw and steer the straightest possible course.

Reduce drag

Keep the hull clean by removing marine growth regularly. Minimize underwater appendages such as rolling chocks, transducers, stabilizers, and mounts.

Use shore power

When dockside, using shore power is more cost effective than running an onboard diesel generator.

Plan route

Take advantage of tides, currents, and predicted winds to save fuel.

SPEED VS. COST: VESSELS 40-50'



Slow down

Decreasing your speed significantly reduces fuel consumption. This is the #1 way to save fuel!

Use diesel engines fully loaded

Diesel engines are most efficient when providing about **40%-80%** of their rated horsepower. At light loads, diesel engines use more fuel/HP.

ENGINE EFFICIENCY



Check exhaust

Exhaust from a well-maintained diesel engine is almost invisible.



Check propulsion

A typical propeller converts only about 50% of horsepower into thrust. Improper sizing or marine growth can make propellers even less efficient.

ELECTRICAL

AC LOADS

Get a premium efficiency motor

Over the 10 year life of an average electric motor, using a premium efficiency (Grade IE3) motor could save **20%** of energy costs.

Get a motor controller

Variable Frequency Drive motor controllers can save as much as **70%** of energy costs by eliminating standby power and smoothing start-up surges.

Use an inverter

Consider using an inverter for light loads instead of running a genset.

DC LOADS

Get a premium efficiency DC alternator

Common engine driven 12V DC alternators are only about **45%-55%** efficient. New premium efficiency DC alternators can save **20%** on energy costs.

Adjust your belts

Improperly adjusted alternator belts reduce efficiency and increase alternator wear.

Go LED

LEDs are up to **10** times more efficient than incandescent lights and about twice as efficient as compact fluorescents. Consider using LEDs for deck and spotlights.

REFRIGERATION



Check head pressure

Maintaining too much head pressure wastes energy.



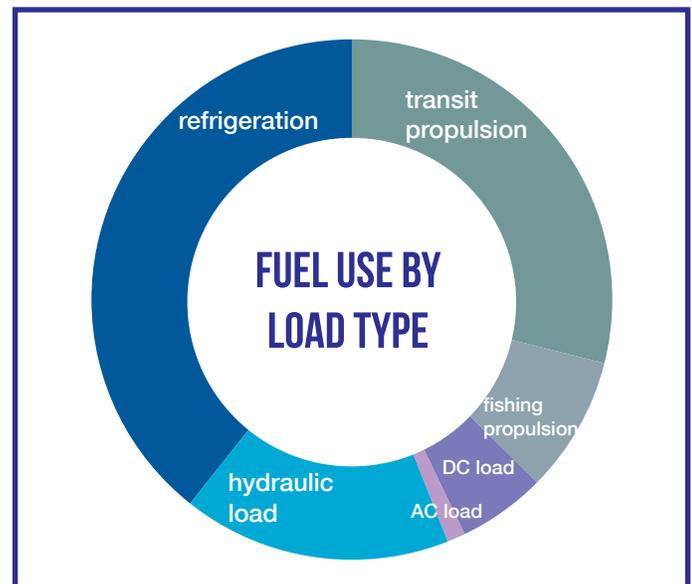
Check refrigeration

New compressor technologies with VFD controls can be **30%** more efficient than older models.



Insulate

Ensure proper insulation in the hold and around hatches.



HYDRAULIC



Limit use

Turn off hydraulics when not engaged.



Listen

Whenever a hydraulic system makes noise or heat, it is wasting energy.



Maintain hydraulic system

Keep lines short and minimize fittings and sharp corners. Keep fluid clean with 10 micron filters to reduce wear.

FIND OUT HOW YOUR VESSEL USES FUEL WITH OUR
FREE SELF-AUDIT TOOL AT ALFAFISH.ORG OR AFDF.ORG

