

Washington State Department of
Agriculture

Energy Efficiency in NW Agriculture (EENA)



Jeff Canaan
Bioenergy Coordinator
jcanaan@agr.wa.gov
360-902-1918

Agricultural Energy Challenge

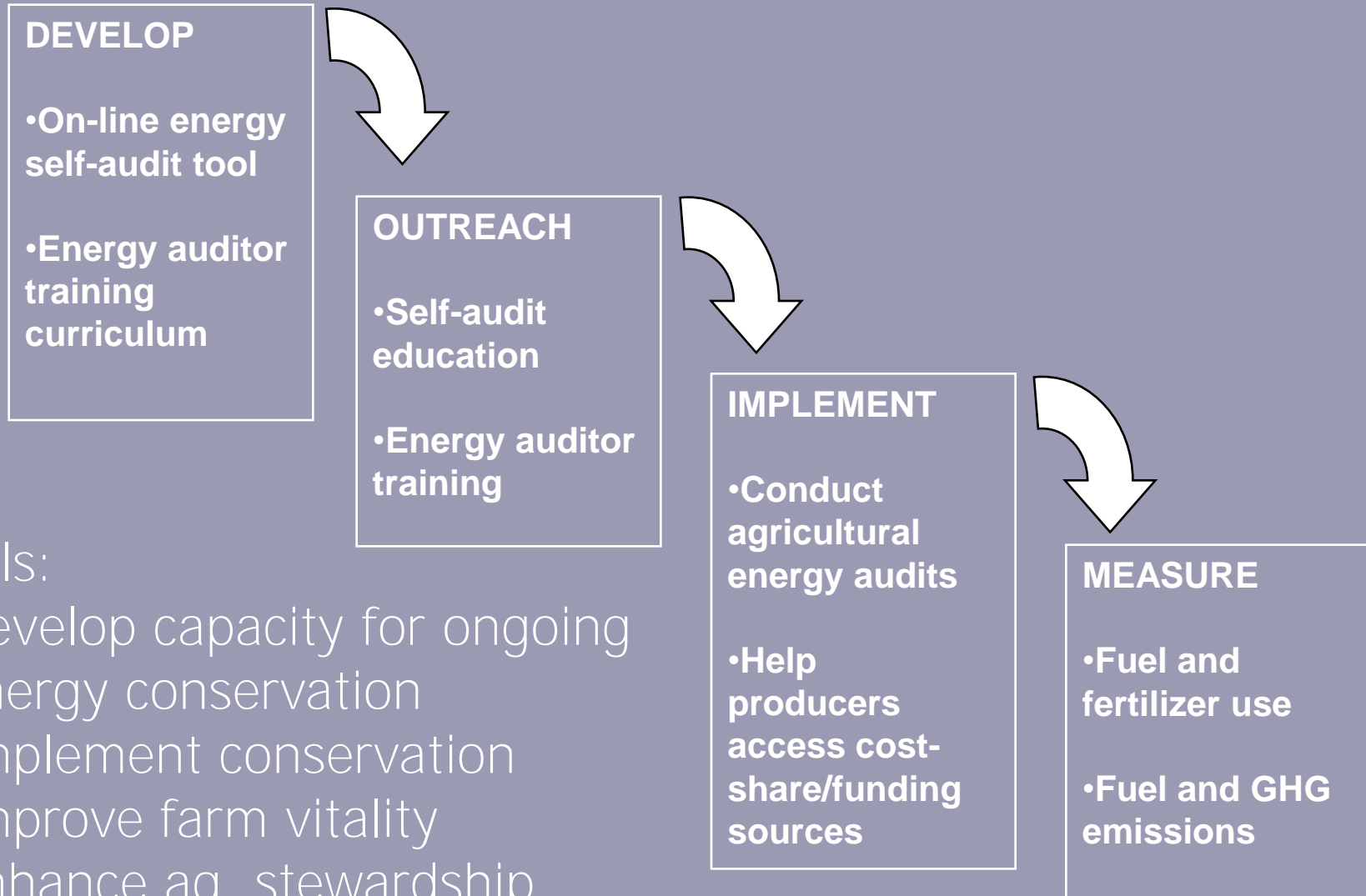
In the past 36 months, Northwest farmers experienced:

- 170% increase in diesel fuel costs
- 350% increase in nitrogen fertilizer costs
- 500% increase in phosphorus fertilizer costs

75% of on-farm energy is fossil-derived fuels and fertilizers.

How can farmers address these energy-related risks?

Proposed EENA Project Deliverables



Goals:

- Develop capacity for ongoing energy conservation
- Implement conservation
- Improve farm vitality
- Enhance ag. stewardship

Potential Benefits

Savings to Producers	Diesel Fuel Conservation	Fertilizer Conservation	Greenhouse Gas Reduction
\$140 million/year ^[1]	5-11 million gallons/year ^[2]	100,000 tons Nitrogen/year 14,000 tons Phosphorus/year	365,000 tons CO ₂ e/year ^[3]

^[1] Includes savings from precision agriculture, improved cropping systems, reduced tillage and irrigation pump efficiency.

^[2] Assumes 5% fuel savings from precision agriculture and 1.5-3.9 gallons per acre savings from reduced tillage.

^[3] Includes 11 million gallons/yr diesel fuel reduction and avoided carbon emissions from Urea and Triple Superphosphate production.

Potential Benefits

Diesel Emissions Reductions

(assumes 11 million gal/yr diesel reduction)

Pollutant	Emissions Factor (pounds/gal)	Emissions (pounds/yr)	Emissions (tons/yr)
PM	0.0298	327,800	163.9
SO _x	0.0156	171,600	85.8
NO _x	0.284	3,124,000	1,562
CO	0.156	1,716,000	858
CO ₂	22.42	246,620,000	123,310

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