

Small Business Training: How to Reduce Your Emissions

June 2009

Meridian, Idaho

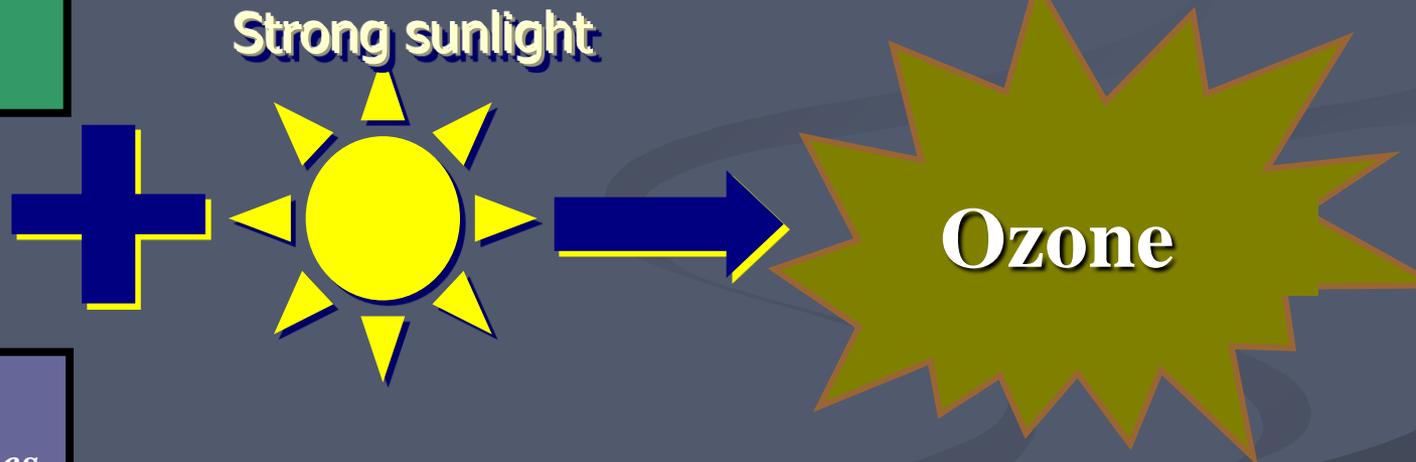
Ozone: How is it Formed?

Volatile Organic Compounds

- *industrial sources*
- *biogenic sources*
- *fuel sources*

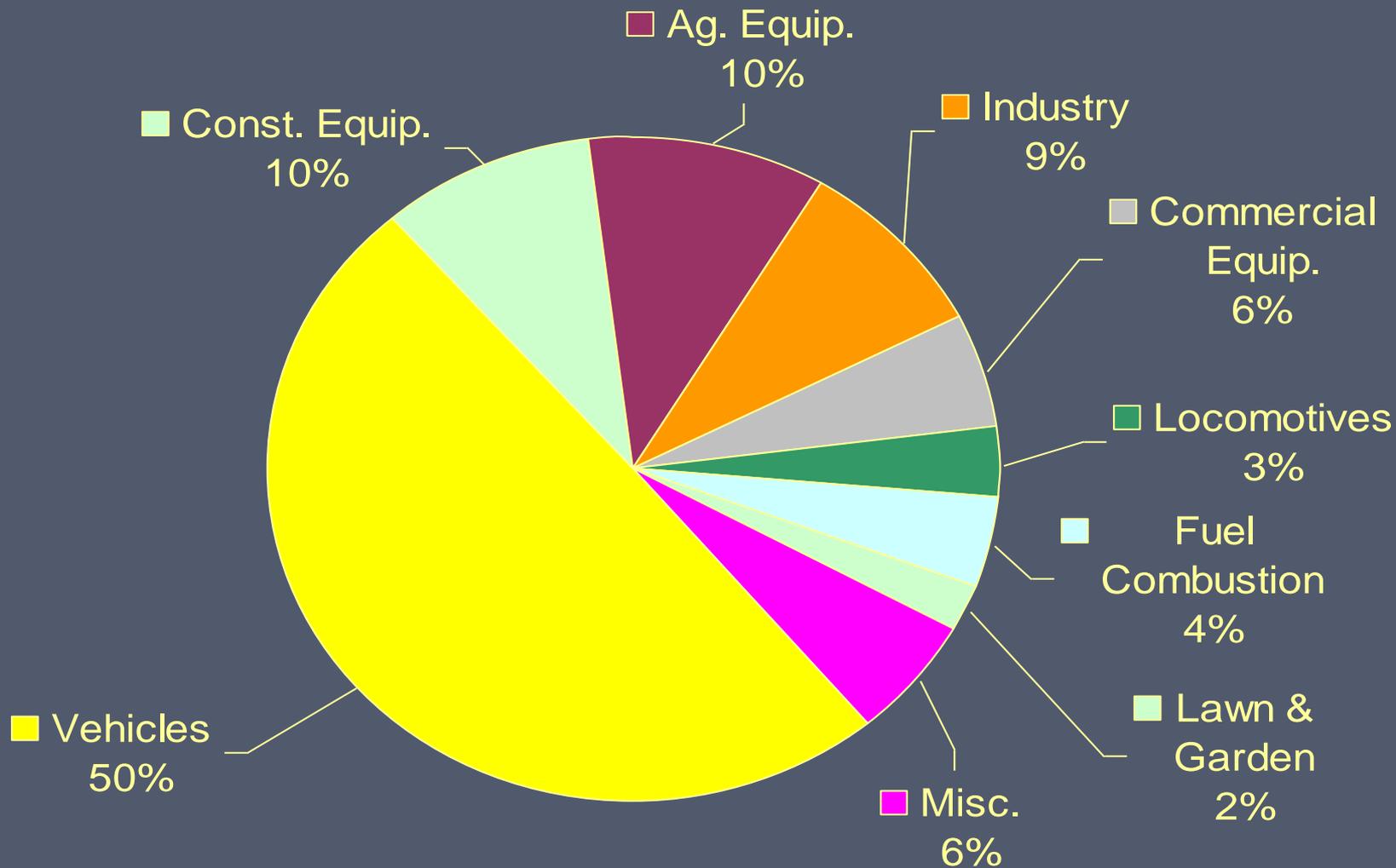
Nitrogen Oxides

- *transportation sources*



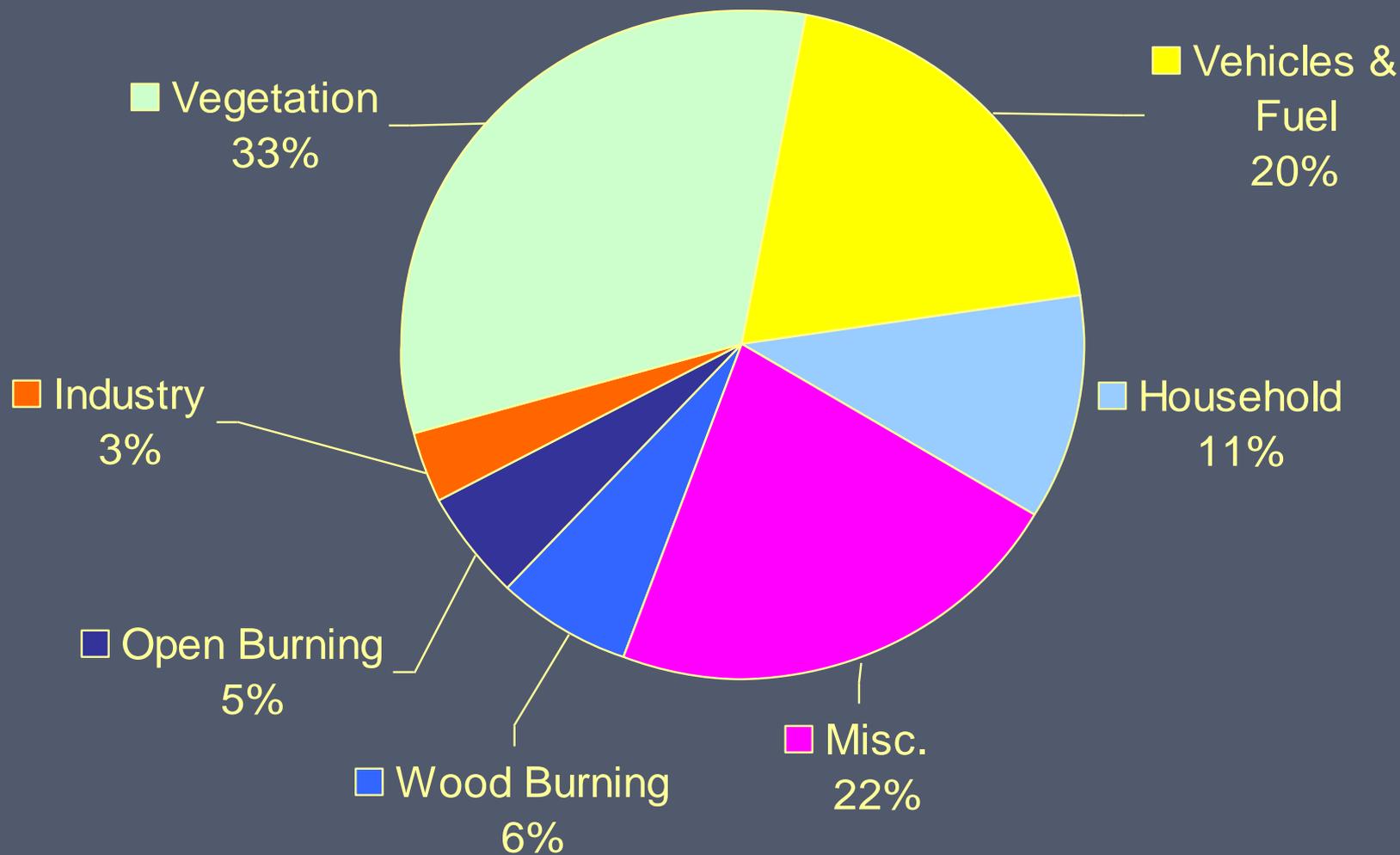
Sources of Nitrogen Oxides Treasure Valley 1999

Source: Idaho Department of Environmental Quality



Sources of Volatile Organic Chemicals Treasure Valley 1999

Source: Idaho Department of Environmental Quality



Why should we care?

- Health impacts
- Potential loss of federal highway funding
- Additional regulatory controls

Ozone Control Measures

- *Expanded operating permit program and controls for minor sources of VOC*
- Enhanced vehicle inspection and maintenance program (for entire valley)
- Emissions offsets for major source (1.15)
- Lowest Achievable Emission Rate (LAER) technology required for new and modified major sources
- Reasonably Available Control Technology (RACT) required for existing major sources
- Regulation of vehicle fueling (stage 1)
- Implementation of transportation control measures
- New transportation conformity requirements

Transportation

- Employee commuting
- Company vehicles and equipment



Volatile Organic Compounds

Common artificial VOCs:

- Paint strippers and other solvents
- Dry cleaning solvents
- Semiconductor cleaner
- Paints
- Wood preservatives
- Cleansers and disinfectants
- Some constituents of petroleum fuels (eg. gasoline and natural gas)

Existing Regulations

- National Emission Standards for Hazardous Air Pollutants (NESHAPs)
- Area Sources - federal hazardous air pollutants emissions less than 10 tons per year (TPY) of any one, and less than 25 TPY of all combined

Example of Area Source Rule

Paint Stripping and Miscellaneous Surface Coating Operations

- Painting best practices
- Training
- EPA notification
- Recordkeeping

Best Practices

- HVLP spray guns *
 - Increase transfer efficiency to 65%
- Spray booths *
 - Spray booth filters are >98% efficient for particulates
- Vacuum or wet sanding
- Low VOC or water based paint
- Low VOC solvents
- Closed containers
- Computerized paint mixing systems

* Rule requirement

Reducing Your VOC Emissions

- Change your materials
- Change your process
- Change your technology
- Change your practices

Change your material

- Select products with the lowest possible VOC content.
- Switch to a multi-purpose, low-VOC solvent if you are currently using different solvents for specific cleaning jobs.
- Switch to detergent-based or water-based cleaners for general cleaning.

Change your material

- Minimize the need for cleaning solvents by using waterborne paints or inks.
- Ask your suppliers and monitor information sites for new and improved products.
- Directory of alternative products and suppliers under development.

Change your process

- Switch to aqueous (detergent-based) cleaning systems.
- Use a cleaning process that minimizes solvent use.
- Use a coating method that does not require spraying such as vacuum coating, dip coating, roll coating, flow coating, dry coating, and curtain coating.

Change your technology

- Use a spray booth to capture and control emissions.
- Use enclosed or mechanical parts washing systems.
- Use more efficient paint application equipment to reduce overspray.
- Use an on-site distillation unit to clean dirty cleaning liquid.

Did You Know?

As much as 40% of solvents are thought to be lost due to evaporation, equipment leaks, spills or inappropriate usage.

Change your practices

- Implement a preventative maintenance program for all equipment.
- Re-examine cleaning needs and avoid any unnecessary cleaning operations.
- Use non-toxic floor cleaner, not a solvent-based cleaner.
- Use reusable wipes whenever possible.

Change your practices

- Use air-tight containers to store solvents, paints, and other coatings.
- Open containers only when adding or dispensing materials. This minimizes evaporative emissions and waste.
- Cover all containers securely to reduce the chance of spills when transferring materials.

Change your practices

- Store rags and towels in a closed container.
- Monitor the amount of solvent used during cleanup to avoid excess usage.
- Pre-clean parts using other methods.
- Reuse cleaning solution or solvent as a pre-wash or wipe for cleaning equipment or parts.

Printing Example:

Reduce the need for cleaning

- Use standard sequence on process colors to minimize color changes for presses.
- Run similar jobs simultaneously to reduce cleanup
- Clean ink fountains only when changing color; use spray skin overnight.

Printing Example:

Reduce Solvent Use in Cleanup

- Avoid soaking cleanup wipes in solvent. Use pump or squeeze bottles to dampen wipes.
- Use automatic blanket washes.
- Utilize parts washing equipment as an alternative to towels for cleaning the trays below each press roller.
- Use a parts washing unit with re-circulating solvent.

Printing Example: Solvents and Wipes

- *Cover* solvents to reduce evaporation.
- *Dispense* solvents from a central source.
- *Track usage* at individual press or operator level.
- Do not allow *personal supplies* of cleanup solvents.
- *Limit the access* to disposable wipes and number of wipes available.

Resources

Idaho Small Business Development Center

www.IdahoSBDC.org

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