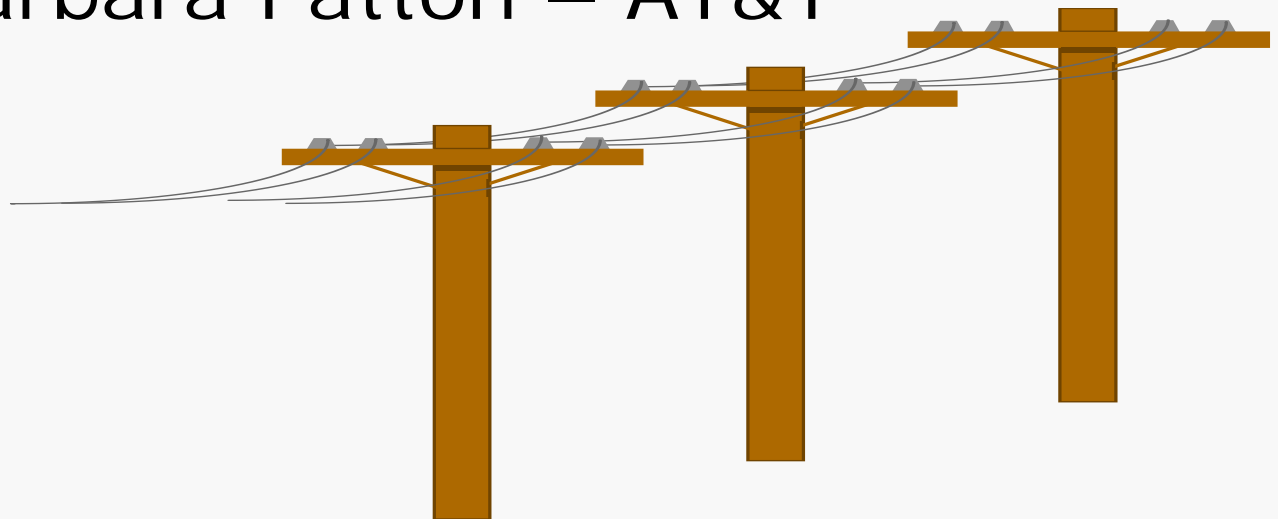


Utility Pole Management – Environmental Issues

ITSC Denver, CO
Barbara Patton – AT&T

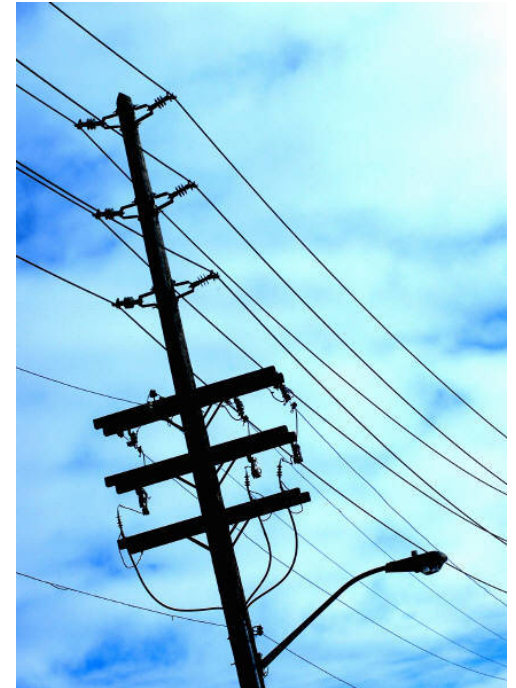


Background

- ❑ Number of utility poles in service in the U.S. - estimates range from 60 to 100 million
- ❑ Roughly 3% replaced each year
- ❑ In service wooden poles treated with “heavy duty” wood preservatives
 - Pentachlorophenol (penta or PCP) – 60%
 - Chromated copper arsenate (CCA) – 24%
 - Creosote – 16%
- ❑ New treated wooden poles
 - Penta 30 - 40%
 - CCA 55 - 60%
 - Creosote 5 - 10%

Background – cont.

- ❑ Improvements made to make waterborne treatments more climbable
- ❑ Specifications for preservative and pole treatment
- ❑ Quality Control



EPA Regulation of Wood Treatment Chemicals

- Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) calls for USEPA to “register” a pesticide if it will work “without unreasonable adverse effects upon the environment”
 - Registration may include restrictions on use
- Penta, CCA and creosote have all been registered for decades

2008 Reregistration Eligibility Decisions

- FIFRA also requires EPA to periodically re-evaluate registered pesticides, based on latest scientific evidence
- In 2008, EPA found that penta, CCA and creosote each were eligible for reregistration as preservatives used for wooden utility poles
 - Standard again is no “unreasonable adverse effects on the environment”
 - The Reregistration Eligibility Decision (RED) for each summarizes latest scientific evidence

2008 Reregistration Eligibility Decisions

- Registrants were required to
 - Implement mitigation measures
 - Make amendments to labels
 - Satisfy data gaps and confirmatory data needs
- No reason at this time to expect that penta, CCA or creosote will lose their registration for use as wood treatment for utility poles

Pole Storage and Use

□ Environmental Impact

- Occasional public concern about smell, toxicity
- Scientific evidence (see EPA REDs)
 - E.g. re penta: “The environmental risk assessment indicates that typical concentrations of pentachlorophenol in terrestrial and aquatic environments from wood treatment uses are not expected to be of sufficient quantity or duration to adversely impact terrestrial or aquatic organisms.”

□ Protective Measures

- Pole storage yards
- PPE for utility workers

Disposition Options

- ❑ Landfill
- ❑ Incineration for Energy Generation
- ❑ Sale or Donation for Secondary Uses
 - Whether to do
 - If do, consider:
 - ❑ Use in lieu of new treated wood products
 - ❑ Provide appropriate warnings, use restrictions

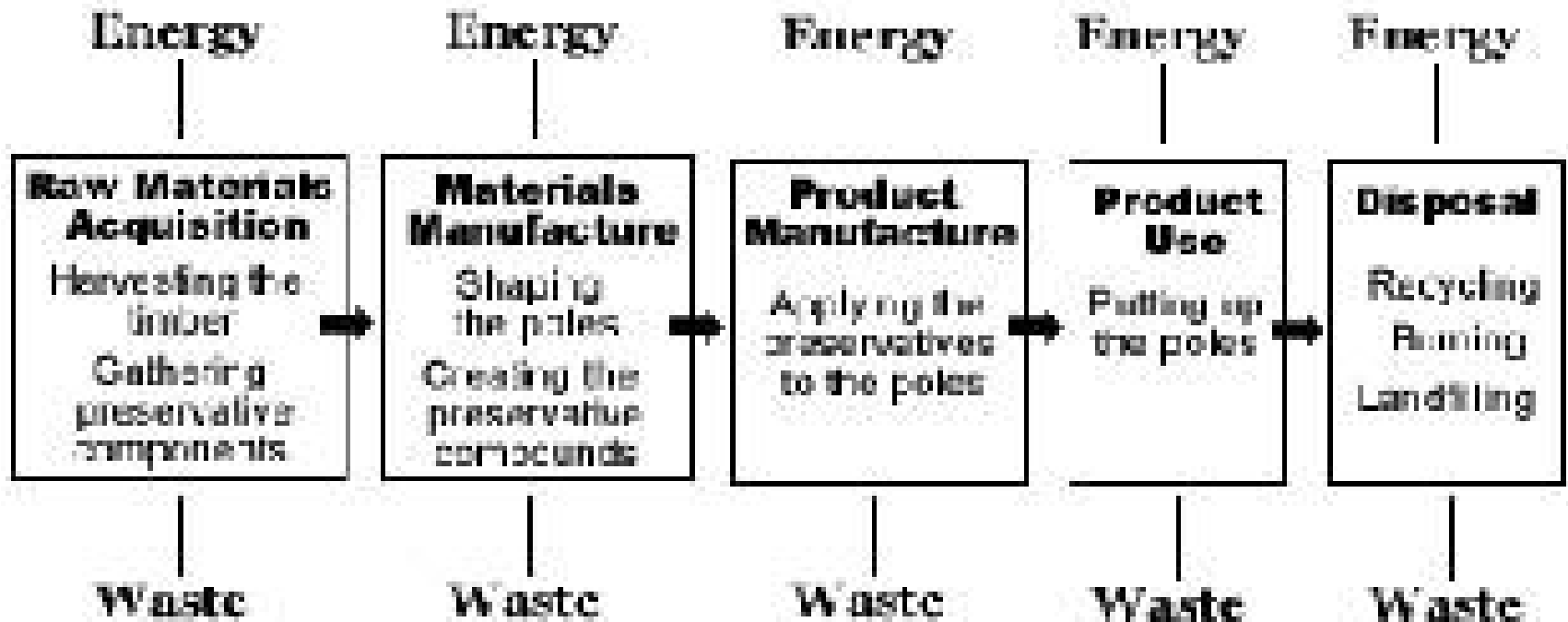


Pole Material Selection Criteria

- ❑ Safety
- ❑ Efficacy and Reliability
- ❑ Cost-Effectiveness
- ❑ Environmental Impacts



Wooden Utility Pole Life Cycle



Environmental Literacy Council

<http://www.enviroliteracy.org/article.php/1311.html>

Alternative Materials & Treatments

- Chemical alternatives for wood treatment
 - ACQ
 - Copper azole
 - Copper naphthenate
- Material alternatives
 - Steel
 - Fiberglass reinforced composite
 - Concrete
 - Engineered wood

Wood Poles – Smaller Carbon Footprint than Alternatives

Table 3. Primary Energy Consumption (MJ)

	(CO ₂ equivalents in kg)		
	Concrete	Roundwood	Tubular Steel
Primary energy consumption	1,889.9	2,673.7	8,614.7
Primary energy based on fossil energy	1,823.7	1,112.0	8,315.9

Source: Kunniger and Richter 1995.

Table 4. Global Warming Potential*

	(CO ₂ equivalents in kg)		
Pole Type	Concrete	Roundwood	Tubular Steel
Regular Pole: 0.4kV	167.1	33.5	1,039.6
1 km distribution line: 0.4Kv	17,287.4	3,831.2	38,267.7

*Substances which contribute to the greenhouse effect are summarized as CO₂ equivalent in kg.

Source: Kunniger and Richter 1995.

From Wood Materials Used as a Means to Reduce Greenhouse Gases (GHG):
An examination of Wooden Utility Poles, Roger A. Sedjo, Ph.D.

Informational Resources

□ U.S. EPA

- <http://www.epa.gov/oppsrrd1/reregistration/pentachlorophenol/>
- <http://www.epa.gov/oppad001/reregistration/cca/>
- http://www.epa.gov/pesticides/factsheets/chemicals/creosote_main.htm

□ American Wood Protection Association (formerly American Wood-Preserver's Association)

- <http://www.awpa.com/>

□ North American Wood Pole Council

- <http://www.woodpoles.org>

Beyond Pesticides

- <http://www.beyondpesticides.org>

Environmental Literacy Council

- <http://www.enviroliteracy.org>

Alternative Use For In-Service Poles ?

