Protecting the Environment While Producing Books:

Key Actions for Printers & Implementing Partners

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Presentation Roadmap

Topics Covered Today

- Industry Guidelines and Standards

- Environmentally-Friendly Specifications

- Reducing Use of Natural Resources

- Reducing Waste

- Pollution Control

Industry Guidelines and Standards

Certification: Independent, verified assurance that forest-based material in a product originates from sustainably managed forests.

"Chain of Custody" Certification
- Forest Stewardship Council (FSC)
- Programme for the Endorsement of Forest Certification (PEFC)

The mark of responsible forestry
FSC® C112130

Environmentally-Friendy Paper Specifications

Paper for Interior Pages

- **Recycled**: Paper made from previously used paper (newsprint, printed paper waste, trim waste, etc.).
- **Agro-Waste:** Paper made from agriculture waste (lwheat husks, bagasse, etc.).
- **Mixed**: Paper made from a mix of recycled paper & agricultural waste.
- **Wood-based**: Paper made from fresh wood from forests.

Paper for Covers

- **Virgin Fiber (C2S):** Cover paper/board made from fresh wood fiber with coating on both sides; suitable for double-sided printing.
- **Virgin Fiber (C1S):** Cover paper/board made from fresh wood fiber with coating on one side; suitable for single-sided printing.
- **Recycled Fiber Board (C1S)**: Cover paper/board made from recycled fiber with coating on one Side; used for student notebooks and some boxes.

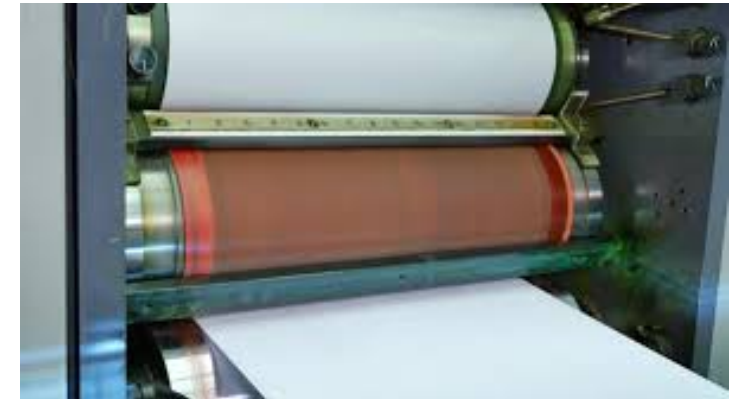## Reducing Use of Natural Resources

Reducing Energy Use

- Use heat recovery systems
- Use high efficiency cooling machines
- Implement load balancing and other systems to reduce electricity use
- Use natural gas-cleaner fuel that furnace oil

Reducing Water Use

- Recycle ground water on plant site
- Recycle treated water for sanitation and cooling
- Recycle condensate from steam heaters and solvent recovery

Reducing Waste: Printing Cylinders

Printing Cylinders

- Reduce copper consumption by optimizing cylinder circumference.

- Recycle used copper.

Reducing Waste: Paper & Ink

Paper:
- Using high quality paper and efficient paper specifications reduces waste.
- Segregating paper waste by type (printed/trim/white, etc.) allows for sale to authorized recyclers.

Ink:
- Using high quality ink reduces waste.
- Solvent recovery systems recover more than 95% of solvent, while filtering paper dust and volatile organic compounds (VOC) from exhaust.
- Recovered solvent is reused for printing.

Reducing Waste: Binding, Packing, Shipping

Binding	Packing	Shipping

Binding

- Inputs for binding include printed forms (sets of pages), glue, wire, and thread.

- Transport materials (forms) from printing presses to binding machinery with reusable packing materials.

- Purchase stitching wire (for saddle stitched books) and glue from reliable suppliers.

- Use dust/fume extractors to filter any fumes and paper dust produced during the binding process.

Packing

- Pack finished books in biodegradable packing materials, using energy efficient packing procedures and recycled pallets.

- Efficient packaging reduces the amount of materials required, improves warehouse utilization and reduces the amount of handling required

Shipping

- Use non-peak times to move containers reduces the environmental impact of shipping.

- Optimize the number of containers with efficient handling requirements (eg use of pallets, weight per carton, …)
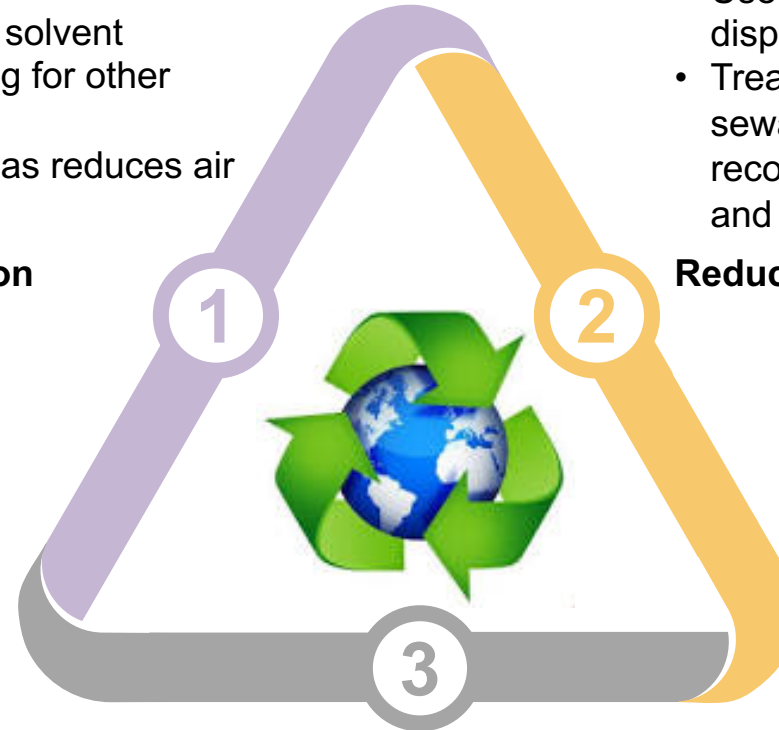
Pollution Control

- Require at least 95% solvent recovery and recycling for other products.
- Using piped natural gas reduces air pollution.

Reducing Air Pollution

- Use effluent treatment plants to dispose of industrial waste water.
- Treat domestic waste water through sewage treatment plants and use recovered, treated water for cooling and other facility needs.

Reducing Water Pollution

1

2

3

Managing Hazardous Waste

- Collect hazardous waste (ink sludge, ETP sludge, plating bath Sludge, used oil, etc.) and dispose of it through authorized recycling and handling companies only.
- Collect other waste (cloth, electrical, glass, etc.) and dispose through authorized recycling and handling companies only.

Pollution Control, cont.

4 **Managing Non-Hazardous Waste**

- Collect scrap metal, plastics, wood, etc. separately and ensure recycling through appropriate channels.

5 **Paper Waste**

- Collect segregated paper waste (print waste, white waste, brown waste, reel ends, core plugs, etc) and ensure recycling through appropriate channels.

- Collect paper dust through dust collecting systems and dispose of it through a paper recycler.

Top 5 Takeaways for Implementing Partners

1

Certification

- Use only "Chain of Custody" certified printers (FSC or PEFC).

2

Technical specifications

- Establish technical specifications that use raw materials efficiently.

3

Packaging

- Require the use of recyclable packaging.
- Optimize packing requirements

4

Planning

- Require printers to provide an environmental protection plan in their proposals/bids.

5

Logistics

- Structure delivery and distribution to reduce environmental impact.
- Plan timelines accordingly

THANK YOU

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