

ENVIRONMENTAL ENGINEERING

Continuous and sustainable improvement of the environment is the goal of both industry and legislators. Current and especially expected future effluent regulations require the reduction of air emissions, effluent discharges and solid waste to be implemented as “*Source reduction measures*” and “*End-of the pipe*” measures, combined for optimum results. Today environmental engineering is an essential part of all projects.

EKONO’s strengths in environmental engineering include:

- ***We know the requirements.*** We know the environmental requirements in different countries, including North America and Nordic Countries. We follow the development of the legislation and guidelines by monitoring the publications of environmental organizations, such as the European union, Nordic Ministers, EPA, Canadian federal and provincial environmental offices. We publish updates annually in our multi-client study “Environmental Performance, Legislation and Technologies in the Pulp and Paper Industry.”
- ***We know the process and the environmental technology.*** EKONO is one of the few consultants to combine thorough knowledge of the pulp and paper processes and environmental processes. This is essential to choose the optimum solution for specific environmental requirements so that it fits with other mill long term goals.
- ***We keep up-to date with the technological advances.*** We continuously study the professional literature and keep informed of development work and advances by research institutions and equipment suppliers. We study new technologies and publish our assessment in our annual multi-client study. EKONO engineers have published numerous articles and papers in the professional literature and conferences.
- We have ***benchmarking data*** for the environmental performance of essentially all pulp and paper mills in North America, Finland and Sweden and mills in many other countries.
- We have a ***strong background and experience.*** We have undertaken numerous environmental improvement projects for reduction of air and water emissions both in North America and Scandinavia. Through our Helsinki office we continue to serve our overseas clients and update our knowledge of the Scandinavian Technology.
- We use and continually refine our ***modeling tools***, such as process simulations, methanol and TRS modeling, effluent treatment plant modeling, etc.
- We have ***expertise in condensate treatment and NCG systems*** design. We can provide an ***unbiased opinion***, because we are not tied to any equipment vendor and we do not have a major detail design department.

The references below include recent selected environmental engineering projects.

- ***Environmental Compliance Projects***, including the establishment of sources of pollutants and planning of measures to reduce the discharges, for example the study on how to meet an effluent limit for manganese discharge at Weyerhaeuser, Grande Prairie, AB.
- ***TRS reduction and NCG handling projects.*** EKONO is one of the few true unbiased consultants in this field to understand the process, design the concepts and undertake trouble shooting. Recent project examples include conceptual and process design for condensate stripping and odor reduction at Weyerhaeuser Canada, Grande Prairie; process design of the TRS reduction at Malette Kraft in Ontario; troubleshooting of the NCG system at Georgia-Pacific, Nekoosa, WI; Cluster Rule studies for several Georgia Pacific mills.
- ***Water use reduction projects*** at many mills, incl. Alabama River Kraft and Georgia-Pacific, Woodland, ME, Crestbrook Forest Industries Ltd.
- ***Effluent Treatment projects*** involving conceptual design and comparison of treatment concepts for Tembec Inc, Temiscaming; improvement concepts of the ASB at Weyerhaeuser, Grande Prairie.
- ***Color Reduction Projects*** including the evaluation of essentially all known color reduction technologies for Weyerhaeuser Canada, Grande Prairie, Alberta; Tasman Pulp & Paper, Kawerau, New Zealand; Buckeye Cellulose, Foley, Florida.
- ***CO₂ emissions reduction projects***, including identification of commercially available technologies and operating practices that forest products industry facilities might consider to lower CO₂ emissions and energy consumption, for NCASI, in USA.
- ***Environmental research and study projects***, including a series on “Low Effluent Mill” Feasibility, Impact on Chemicals Balances, and on Washing Requirements.