

Partners in Biosolids Management

**City of Victoria
Capital Regional District**

The logo for NEFCO (Northwest Environmental Federation of Canada) is located in the bottom left corner. It features a stylized green arrow that curves upwards and to the right, forming a partial circle. The text "NEFCO" is written in a bold, green, sans-serif font, with a small circular icon containing a leaf-like shape to the right of the letter "O".

NEFCO

Recycle, Renew, Restore

NEFCO

- NEFCO was formed in 1986 as part of The O'Connell Companies, a 136 year old company; Daniel O'Connell Sons is our construction arm
- We have 40 years of experience funding commercial properties and public projects
- Our diverse organization brings integrated engineering, construction, operations, and financing solutions
- Larry Bishop, PE – Vice President Engineering and Business Development
- Mike Thayer - Manager, Technology & Engineering
- Jim Spencer - Regional Business Development Manager, S.E. USA



NEFCO Today



Recycle, Renew, Restore

NEFCO FACILITIES



Boston, MA

- Processes all digested solids from Deer Island WWTP, which treats > 1 billion (peak) gallons per day
- 280 dry tons per day
- End-product pellets are used both as a fertilizer and as an alternative fuel
- Substantially redesigned in the late 1990's, plant energy consumption was reduced by approximately 50%



St. Paul (Shakopee), MN

- 55 dry tons per day capacity
- 100% of product is beneficially used at local agriculture sites
- NEFCO's operating contract includes an unique staffing partnership with unionized MCES operators
- 100% reliability using a single dryer
- Facility has fuel oil and natural gas) capabilities; Recently converted to fire digester gas



North Andover, MA

- Two dryers provide 42 dry tons per day capacity
- Digester gas provides 100% of the fuel necessary to run the dryers
- This facility is equipped with two independent dryer trains, thereby providing the client with its desired level of redundancy.
- First facility of its kind to operate entirely on renewable energy

NEFCO FACILITIES



West Palm Beach, FL

- 675 wet tons per day
- Public private partnership with the SWA.
- Landfill gas provides 70% of fuel necessary to run the dryers.
- As a regional facility, the system receives biosolids from six entities and has been 100% reliable.



Cumberland, MD

- 11 dry ton per day dewatering and heat drying facility
- NEFCO provides centrifuge dewatering as part of the drying process.
- Use of a single dryer reduced capital cost while maintaining 100% reliability



Detroit, MI

- Processing capacity of 316 (firm) to 420 (total) dry tons per day
- Includes eight dewatering centrifuges and four rotary dryers
- Includes four 800 ton (eight days) storage silos
- Product will be used for local agriculture and possibly for cement kiln fuel

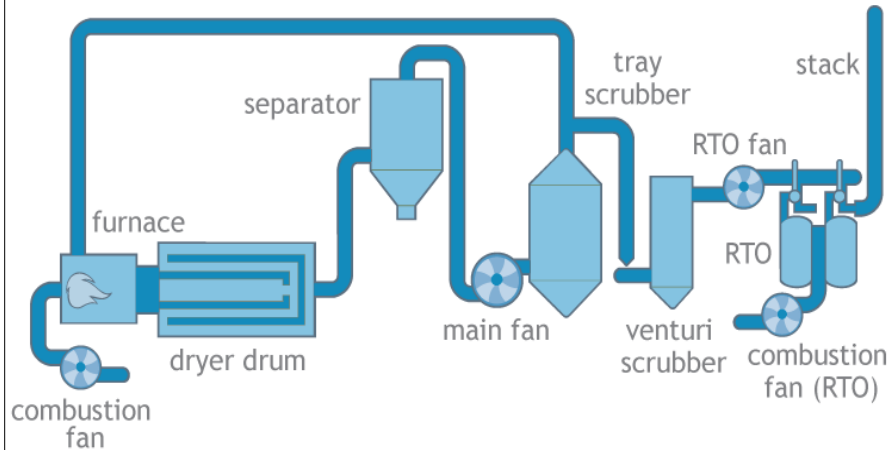
Thermal Drying Technology



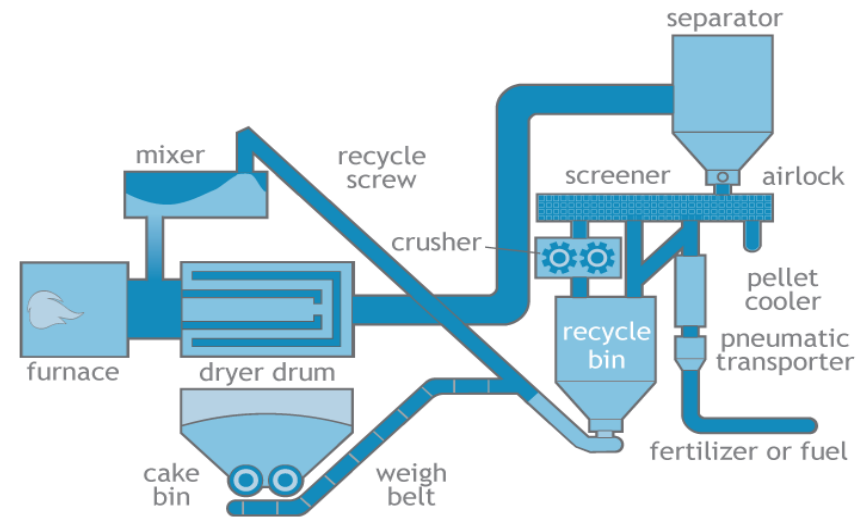
Recycle, Renew, Restore

Thermal Drying

NEFCO Dryer Air System Major Components



NEFCO Drying Process / Solids Handling



The process is completely enclosed with state-of-the-art odor control and emissions treatment!

Benefits of Thermal Drying

- Extensive performance history
- Robust technology to handle variability
- Pathogen destruction: “PFRP” product from raw sludge in a single process
- 75% or greater reduction in truck volume compared to hauling cake or composting technologies
- Odorless and quiet facility:
 - good neighbor
- Small facility footprint



Green Benefits of Thermal Drying

- Dry granular biosolids recycles nutrients including phosphorous and nitrogen, which is limited in supply and necessary for farming and human survival.
- Dry biosolids has significant fuel value that can be used to displace fossil fuel, especially in cement kilns.
- Dryer can use exhaust gasses from a combustion turbine or a reciprocating engine - generator.
- Dryers can use carbon-neutral fuels such as wood chips, landfill gas, or digester gas.



Well Established Technology Used In:



Boston, MA

- Boston, MA
- Detroit, MI
- Milwaukee, WI
- Philadelphia, PA
- South Bronx, NY
- Chicago, IL
- Windsor, ON
- Sacramento, CA
- St. Petersburg, FL
- Stamford, CT
- Winston-Salem, NC
- Honolulu, HI
- Irvine, CA
- Green Bay, WI
- Blue Lake (Shakpoe, MN)
- GLSD (N. Andover, MA)
- West Palm Beach, FL
- Cumberland, MD
- Encina, CA

Mostly procured using DBO

Industry Activity

- Miami-Dade – Thermal Drying (DBFO)
- Waterloo – Thermal Drying
- Edmonton – Thermal Drying
- Charlotte, NC – Thermal Drying (DBO)
- Hillsborough County – Thermal Drying (Operations)
- Los Angeles County Sanitation District – Thermal Drying
- Irvine Ranch – Thermal Drying
- San Jose – Thermal Drying (DBO)
- Columbia, SC – Thermal Drying (DBO)



*NEFCO's Project Company in
Ontario*

Operations



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Flexible Operations Approach

- Communicative relationship with client is critical
- Biosolids facility O&M personnel can be client employees and union members
- Responsible for all regulatory compliance
- Interface with client CMMS
- Responsible for all maintenance, replacement and spare parts
- Responsible for all product marketing and distribution



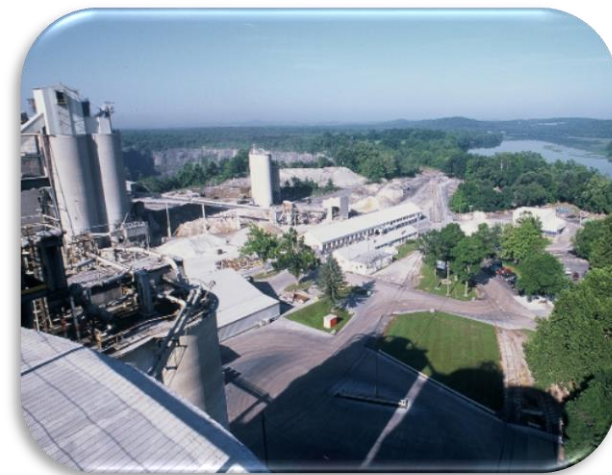
NEFCO is Responsible for Product Distribution



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NEFCO Product Marketing - Critical Success Factors

- Diversified customer base
- Maintain backup plans
- View biosolids as product
- Supply chain approach
- Inventory management
- Know customer's needs
- Use product marketing brokers
- Understand permitting & regulations



Project Delivery



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Preferred Delivery Model

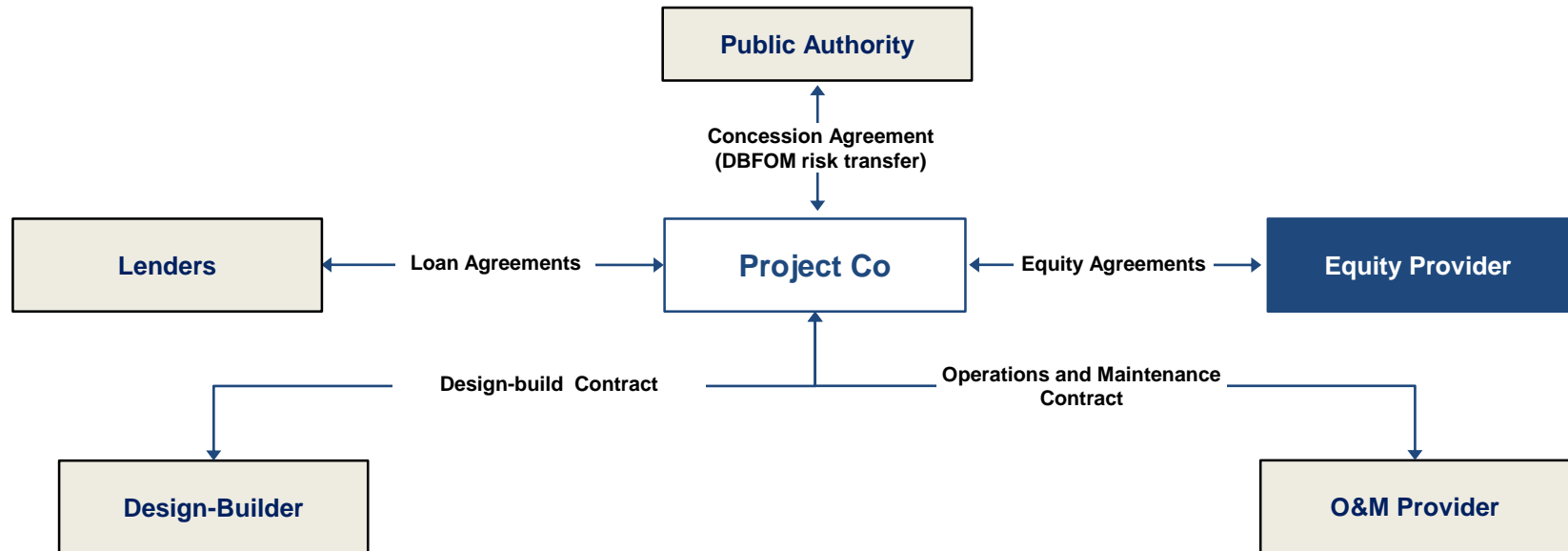
Under a DBFOM model, the private sector partner(s) would provide the following:

Component	Services Provided
Design	<ul style="list-style-type: none">▪ Design of the project solution▪ Example: engineering of the biosolids management process
Build	<ul style="list-style-type: none">▪ Construction of the project▪ Example: management of all sub-contractors
Finance	<ul style="list-style-type: none">▪ Private financing, including short-term and long-term debt and equity funding necessary to construct and operate/maintain the project for the specified project term▪ Example: long-term equity financing of the Project Company
Operate	<ul style="list-style-type: none">▪ Hard management services that support the basic operation of the asset and include fairly low risk tasks▪ Example: operators, administration
Maintain	<ul style="list-style-type: none">▪ Daily facilities maintenance, annual maintenance, and major upgrades or replacements of major components▪ Example: preventive maintenance for equipment throughout project term and replacement at the end of its life-cycle



Preferred Structure

NEFCO would rely upon a proven contractual-based structure



Design-Build Contract

- Fixed-price, date-certain, turn-key contract
- Liquidated damages for performance and delay
- Limit of liability
- Parent company guarantee and liquid security (i.e., letter of credit)

Operations and Maintenance (O&M) Contract

- 20 to 35 year term, fixed-price, turn-key contract
- Performance obligations with pass-through of penalties and/or deductions
- Limit of liability multiple of annual average contract value
- Parent company guarantee and liquid security (i.e., letter of credit)

Project Debt Capital

- Investment grade (BBB- or higher)
- Debt service coverage ratio of 1.25x to 1.40x
- Leverage of 80% to 90%
- Fixed-price interest rate via hedging of bank loans or bond financing

Project Equity Capital

- Long-term, low cost institutional equity (i.e., pension funds)
- Up to 100% provided by managed funds
- Opportunity for investment by Design-Builder and O&M Provider



Benefits of Partnering with NEFCO

- Cost and performance certainty
- Thermal drying is a proven, reliable technology
- Long-term operations experience, unmatched in industry
- Non-proprietary, flexible approach to systems
- Risk assumption through innovative contracting and guaranteed product distribution
- Ability to finance large capital projects
- Long term Public Private Partnerships with large municipalities in North America





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