



Clean Water State Revolving Funds: A Mechanism to Fund CHP at WWTF

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Presentation Outline

- **CWSRF**
 - Fund overview
 - Application process
- **CHP Funding with CWSRF**
 - Applicability requirements
 - CHP CWSRF project examples
 - Delhi Charter Township Case Study

What is the CWSRF?

- Created in 1987 when Congress amended the Clean Water Act
- Borrowers include municipalities, businesses, non-profits, and individuals
- Replaced the existing Construction Grants program
- Can fund many types of projects:
 - Projects that address **municipal wastewater and stormwater** pollution
 - Projects that address **nonpoint source** pollution
 - Projects that address water pollution in **estuaries**

How the CWSRF Works

Federal capitalization provides initial funding



States match federal capitalization grant (20 percent of capitalization)



Clean Water State Revolving Fund

Low interest loans



Loan repayments

Bond repayments



Bond proceeds

Bond holders provide additional funding



Eligible CWSRF Projects



States' Role

- Borrowers submit applications to State
- States –
 - Reviews & ranks project applications
 - Prepares Project Priority List (PPL) and Intended Use Plan (IUP)
 - Public review & comment of IUP/PPL
- Executes loans for projects on IUP
- Ensure projects comply with all requirements
 - Periodically inspects projects as built
 - Reviews Borrower Invoices
 - Pays invoices during construction
 - Collects Repayments - begins within 1 year.
- Reports annually to EPA

Green Project Reserve

- Green project reserve was first introduced in ARRA but has been also carried over to subsequent fiscal years
- For a given FY, to the extent that sufficient eligible projects are available, no less than 10% of a state's capitalization grant must be used for projects meeting green project criteria
- 4 basic categories for green projects
 - Water efficiency improvements
 - Energy efficiency improvements
 - Green infrastructure
 - Environmentally innovative activities

How to Apply

- Application process takes place through local state agency:
 - Process varies by state
 - Minnesota <https://www.pca.state.mn.us/water/clean-water-revolving-fund>

“Minnesota's SRF is managed by the Minnesota Public Facilities Authority (PFA), a board of six state commissioners from the departments of Employment and Economic Development (DEED), Finance, Health, Agriculture, Transportation and the MPCA. PFA and MPCA staff jointly administer the wastewater and stormwater components of the SRF. The PFA is responsible for the financial elements of the program, while the MPCA is responsible for its environmental and technical components.”

CHP Eligibilities

- At WWTFs, CWSRFs can fund:
 - Planning and design of CHP systems
 - Capital costs associated with CHP systems
- Capital costs can include:
 - Digesters
 - Pretreatment equipment and compressors
 - Engines/microturbines
 - Pumps and pipes
 - Other necessary retrofits and upgrades



Specific eligibility criteria is nuanced and depends on ownership, permit status, the State, and other factors

Examples of CHP Systems Installed Through CWSRF Funding

Facility Name	Location	Year of CWSRF Funding	CHP System Size
Beaver Dam Municipal Water Treatment Plant	Beaver Dam, WI	2009	788 kW
City of Covington Wastewater Treatment Plant	Covington, VA	2009	43 kW
Delhi Charter Township Wastewater Treatment Plant	Delhi Charter Township, MI	2007	60 kW
Hampton Roads Sanitation District Atlantic Treatment Plant	Hampton Roads, VA	2012	1.6 MW
Johnstown-Gloversville Joint Wastewater Treatment Facility	Johnsonville, NY	2010	400 kW
Lewiston Auburn Water Pollution Control Authority Wastewater Treatment Plant	Lewiston, ME	2011	460 kW
Medina Wastewater Treatment Plant	Medina, NY	2010	60 kW
Pittsfield Wastewater Treatment Facility	Pittsfield, MA	2010	200 kW
R.M. Clayton Wastewater Treatment Plant	Atlanta, GA	2011	1.6 MW
West Lafayette Wastewater Treatment Facility	West Lafayette, IN	2006	130 kW
Wolf Creek Water Reclamation Facility	Abingdon, VA	2009	60 kW

Case Study: Delhi Charter Township

- Location – South of Lansing, Ingham County, MI
- Serves population of 25,000
- Treats 2.5 million gallons per day
- Integrated Biomass-to-Energy System completed in 2009
 - New digesters
 - 60 kW CHP (two, 30 kW microturbines)
 - Other components
- Funded by CWSRF loan, state funding, and cash on hand



Case Study: Evolving History

- 2004 Master Plan indicated an increase in solids handling was needed ASAP
- Facility started design of new class B mesophilic anaerobic digesters when approached about partnering in a 21st century jobs fund application
- Project changed to install two phase anaerobic digestion producing class A biosolids, and 60 kW CHP system
- Delhi Charter Board liked project so much they decided to build it without grant
- Delhi believed CWSRF loan experience belied the perception
- Below market loan rate sealed the deal

Case Study: Project Finances

Costs	
SRF Plan	\$131,023
Design/Bid/Legal	\$727,319
Engineering	\$548,673
Construction	\$9,242,475
Total	\$11,533,714
Financing	
CWSRF Loan	\$9,850,000
Michigan State Grant	\$500,000

- CWSRF Loan
 - 1.625% (Township's bond rate at the time was variable 1.1%-3.65%)
 - 20 year term

Case Study: CHP Project Metrics

- **CHP Primer Mover Technology**
 - 2 30 kW microturbines; digester gas fuel.
- **Electricity Generation**
 - ~330,000 kWh/year
 - ~10% of facility usage
- **Fuel Use Reduction**
 - Facility natural gas use reduced by 63%
- **Annual Cost Savings**
 - ~\$60,000 annual cost savings

Application Contacts

- List of state CWSRF agencies and EPA regional contacts available at:
<https://www.epa.gov/cwsrf/forms/contact-us-about-clean-water-state-revolving-fund-cwsrf#state>.
- Regional EPA contacts
 - EPA Region 5 (serving IL, IN, MI, MN, OH, and WI) U.S. EPA 77 West Jackson Boulevard (WS-15J) Chicago, IL 60604-3507 [Steve Marquardt](mailto:marquardt.steve@epa.gov) (marquardt.steve@epa.gov) (312) 353-3214

CHP Technical Support

- U.S. EPA CHP Partnership

www.epa.gov/chp

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- U.S. Department of Energy Regional CHP Technical Assistance Programs (TAP)

<http://www.energy.gov/eere/amo/chp-technical-assistance-partnerships-chp-taps>

- Midwest DOE CHP TAP Contact: Cliff Haefke

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