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Energy Programs for Utilities – Black & Veatch



smart water solutions deliver operational efficiency, energy efficiency and a lower cost of ownership within plants and across networks.

Up to 30%

In Energy Savings

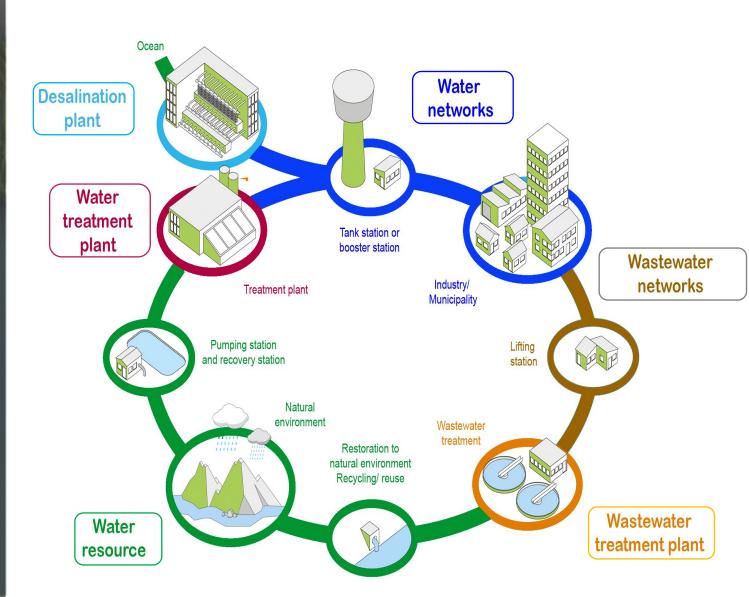
Up to 25%

Increase in Operational Efficiency

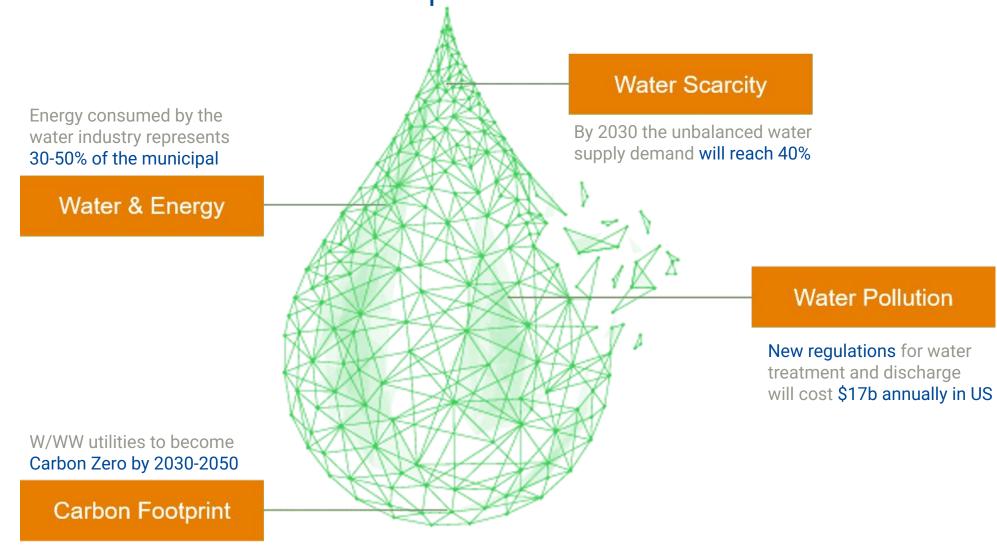
Up to 25%

Reduction in Total Cost of Ownership

Energy has a direct correlation across the entire water cycle



It's time to move from process efficiency towards Net Zero carbon and zero pollution





With microgrids we become energy autonomous

5X more energy than it takes to treat it Go-generation from biogas Storage (energy arbitrage &/or stability management) (self consumption &/or energy arbitrage) Solar generation (Self consumption &/or export) **Diesel Generation** Microgrid systems (Backup) (electrical integration, Control & Optimization) Connection with Utility grid (tariff optimization, export management, islanding management)

Wastewater contains approximatively

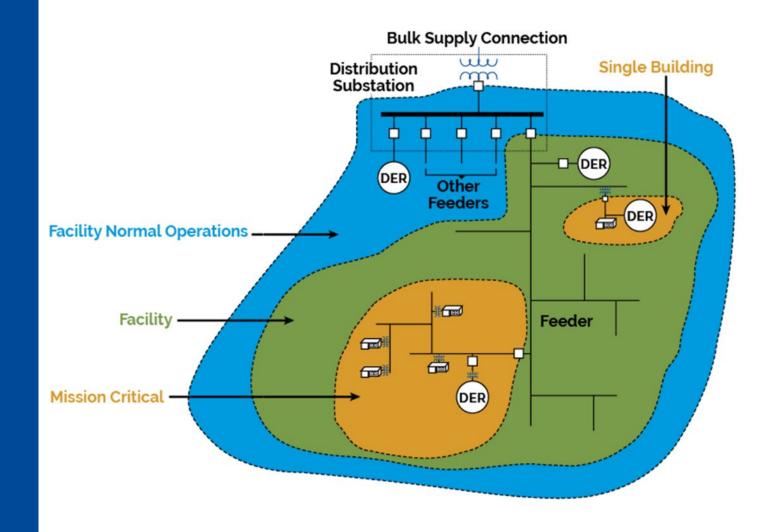


 Combines new & existing The Best Microgrids assets Solve Multiple Problems Uses renewables Reliability & Resolves power quality Resilience issues Active management of generation and load Microgrid Uses renewables Reduces GHG emissions Sustainability Extends duration of fossil fueled resources Produces power competitively with the grid Avoids upgrade or back-up **Cost Savings** power requirements Uses energy efficiently

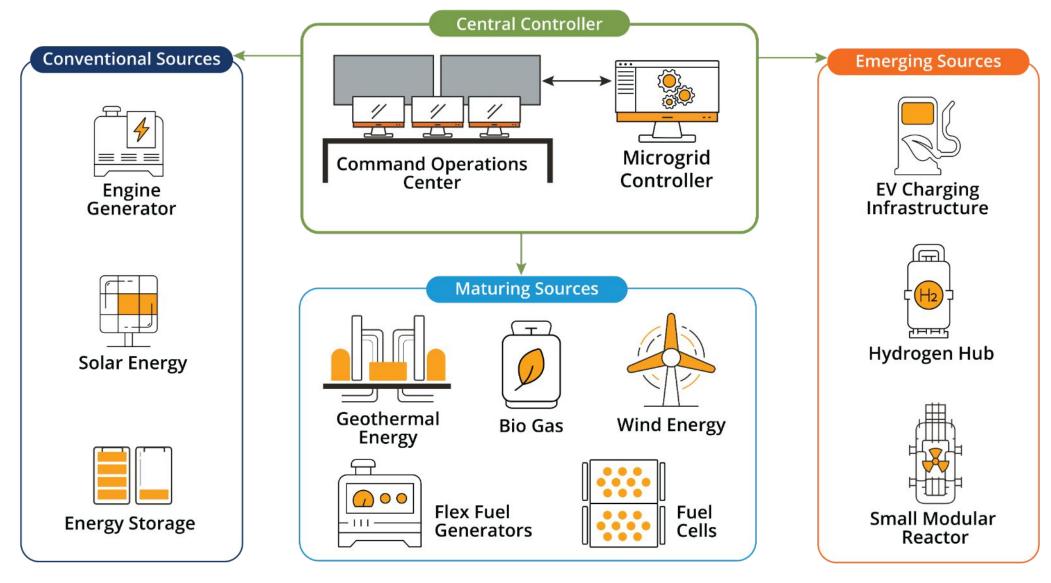
MICROGRID

Definition of Microgrids

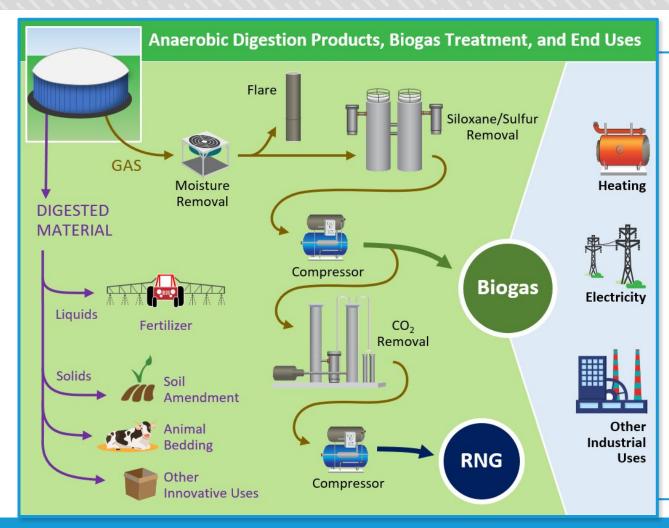
"A microgrid is an integrated energy system consisting of interconnected loads and energy resources which, operated as an independent system, can "island" from the local utility grid and function as a standalone system".



Microgrid Components



Monterey Renewable Energy and Electrical Utility Reliability Program



- Diversion of Organic Wastes from Landfill Disposal
- Co-Digestion to Increase Biogas Production
- Biogas Conditioning to Produce Renewable Natural Gas (RNG)
- Formation of an Interagency Electrical Microgrid









Discussion

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