Pump water for less money with ... Externalift™ screw pumps
Since the 1960’s, when the technology was introduced to the US water and wastewater market, Siemens Water Technologies has installed pumps at over 1,200 locations for a wide range of applications:

- Headworks
- Return activated sludge
- Lift stations
- Stormwater
- Industries such as pulp and paper, plastics, refineries, fish hatcheries and food processing
- Many other types of high-volume, low-head pumping applications

Design innovations make Siemens Water Technologies Externalift™ screw pumps superior to other types of pumps:

- Pre-screening or grinding not required
  - All screens and grinders can be located at pump discharge level
- Inlet structures not required
  - Wet and dry pits not required
  - No wet well storage
  - No inlet or discharge pipes
  - No valves or elaborate electrical controls needed
- Variable pumping at constant speed
  - Liquid will be pumped at the rate it will be received
  - Optional VFDs and dual-speed motors available for large flow variations
- Low-speed operation
  - Speeds range between 20 RPM and 75 RPM, based on spiral diameter
  - Low speed operation lengthens bearing life, and
  - Permits gentle pumping action for return sludge or oily wastewater
- Backstop protection
  - Backstop prevents reverse rotation when pump operation is stopped
- Maintenance free
  - Requires only lubrication
  - Automatic lubrication is provided to lower bearing
  - Manual lubrication is required for upper bearing
- Efficiency
  - Typically 75% at design capacity
  - Over 65% at 30% capacity
- High flow / High lift
  - Flows of up to 80,000 GPM (300 m³/min) for each pump
  - Lifts up to 40-ft (12.2 m)
- Reduced pumping head
  - No suction or discharge piping, gate or check valves
  - No frictional resistance
  - Lower static head, since screw pump meets the incoming water at its own level

Externalift™ Screw Pumps
Externalift™ pumps are designed and manufactured for optimal performance, ease of maintenance and long-lasting operation.

The Externalift™ Pump consists of:
- **Screw**
  - Steel torque tube body
  - Inclination angles of 30° and 38°
  - Two or three flights welded to exterior of tube
  - Heavy-gauge end plates machined for alignment of surfaces
  - Statically balanced
  - Shop primed
- **Self-Aligning Upper Bearing**
  - Split bearing housing
  - Self-aligning, spherical roller radial and thrust bearings
  - 100,000 hours Minimum B-10 life
- **Lower Bearing**
  - Bronze sleeve bearing resists contamination
  - Sleeve rotates with screw, while journal remains fixed
  - Automatically and continuously grease lubricated
  - Designed to compensate for temperature effects
- **Deflectors**
  - Circular arc formed plate sections prevent splashing
- **Drive includes**
  - Electric motor
  - Reducer designed to AGMA standards with 1.5 service factor
  - V-Belts and sheaves connection between motor and reducer
  - Backstop mounted on gear reducer prevents reverse rotation of screw pump
  - Flexible coupling for reducer-to-motor connection (except when hollow-shaft reducer is used)
- **Grease Lubricator**
  - Motorized and connected to the pump drive
  - Designed to operate automatically when screw pump is running

Proper influent and effluent structures are an integral part of the Externalift™ pump operation and critical to optimal pumping efficiency.

The influent basin should be designed to:
- Allow isolated operation of the pump(s)
- Permit maintenance around each lower bearing

Effluent channels must be designed so that:
- The discharge from the pump(s) does not flow back into the screw
- For multiple parallel pumps, the discharge point of all screw troughs must be at an elevation to prevent backflow