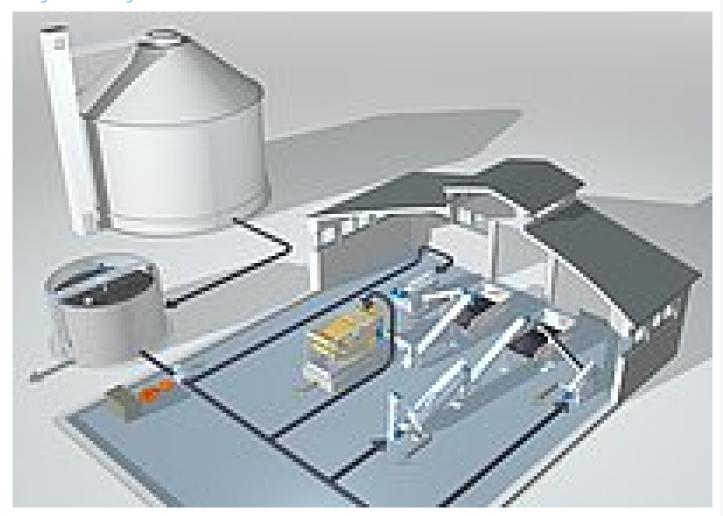


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Sludge Dewatering



Dewatering consumes less energy than it saves during subsequent sludge treatment or transportation. Performance and power consumption depend on sludge type and the used technology:

- Gravity thickeners consume negligible energy, but have a limited effect. They are useful to reduce flow to dewatering machines and simultaneously serve for storage.
- Belt Filter Presses and Screw Presses are medium-tech machines with low power consumption that can easily be maintained by operators.
- Conventional decanters and high-performance centrifuges have far higher power consumption and need manufacturer maintenance.
- Frame and plate filter presses and membrane filter presses are seldom installed nowadays, though they can achieve high cake solids, because they are expensive and require much operation and maintenance work.

The following table compares performance and power consumptions:

| Characteristic of Dewatering Systems | Aerobic SI. | Anaerobic SI. | Power consumption | |
|---|-------------|---------------|-------------------|------------|
| | %DS | %DS | kWh/t | kWh/(PE-a) |
| Gravity Thickener | 3 – 5 | 5 – 10 | 0 - 10 | 0 – 0.3 |
| Belt Filter or Screw Press | 15 – 20 | 20 – 30 | 10 - 30 | 0.3 – 1.0 |
| Simple Decanter Centrifuge | 14 – 18 | 18 – 28 | 20 - 50 | 0.5 – 1.5 |

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| High-Performance Centrifuge | n/a | 22 – 33 | 30 - 60 | 0.7 – 2.0 |
|------------------------------|-----|---------|---------|-----------|
| Frame and Plate Filter Press | n/a | 25 – 38 | 25 - 60 | 0.6 – 2.0 |
| Membrane Filter Press | n/a | 28 – 40 | 30 - 90 | 0.8 – 3.0 |

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