Surface Blowdown Heat Recovery

Surface blowdown from a steam boiler is usually necessary to prevent the TDS (total dissolved solids) from exceeding high levels. If the TDS is allowed to climb too high then priming or foaming can take place. The blowdown may seem like a small amount but the water is at the steam temperature and naturally, what goes out of the boiler must go back in. But the make-up water that goes back in is very cold and requires heat to raise it back to the boiling temperature. The amount of money that requires is normally very significant.

Penn Continuous Blowdown Heat Recovery Systems can recover 90% or more of this heat normally lost. Two stages provide the heat recovery. The first is the flash area where the high pressure condensate flashes to a low pressure steam use such as a feedwater heater or deaerator. In the second area is a heat exchanger that transfers the remaining heat to the make-up water.

The cost of these units is very small in comparison to the cost of energy that is no longer needed once they are installed. Paybacks as short as a couple of months are not uncommon.