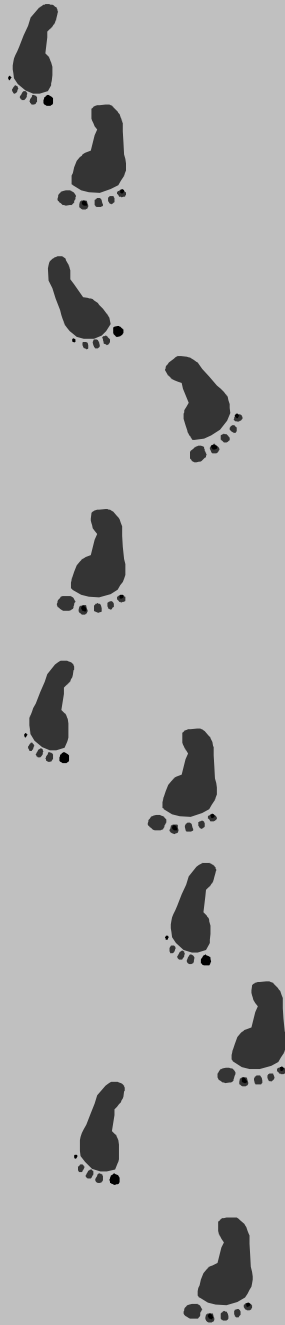


# SNOWFLAKE WHITE MOUNTAIN POWER



The Snowflake White Mountain Power Plant uses biomass as a fuel to generate up to 24 MW of electricity. This is currently the largest operating biomass plant in Arizona. The electricity generated is purchased by Salt River Project (SRP) and Arizona Public Service Co. (APS).



## Power Plant Tour

Trucks deliver fuel in the form of logs or wood chips to the fuel pile.



Conventional trucks that deliver wood chips use the vertical dump facility.

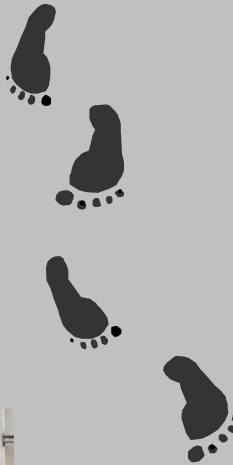
Wood chips are conveyed to the fuel pile where fuel from different sources is blended to produce the best mixture for the boiler.



Front end loaders move wood chips towards the fuel dump rakes



The fuel dump rakes continuously move the wood chips onto the fuel feed conveyors.



Another source of fuel is from the paper waste that is to be recycled in the paper mill. Sludge from the paper that can no longer be recycled is dried and delivered to the biomass plant.



Front end loaders move the dried sludge to the feed conveyor.



The wood chips and dried paper sludge are blended, ready to be fed into the power plant boiler.



Sand for the fluidized bed boiler is added to the fuel mix.



The fuel is delivered into the boiler.



Large powerful motors (1,000 HP) drive air blower fans and air is blown into the bottom of the boiler.



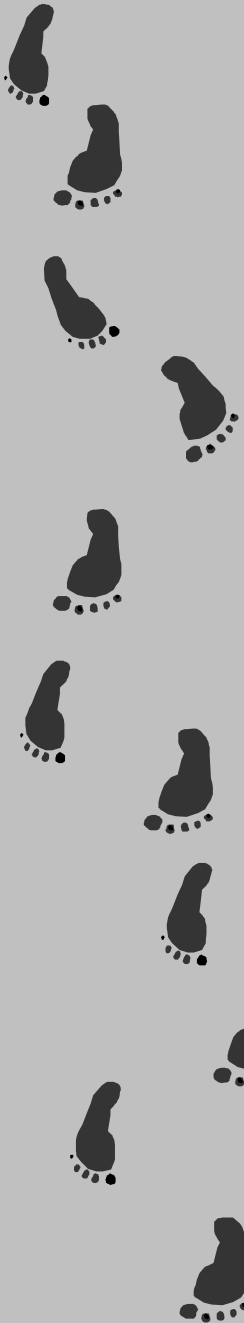
The fuel burns in the boiler, boils water and creates steam.



Steam from the boiler is used to power the 24 MW turbine/generator.



After powering the turbine, the steam is condensed in the condenser.



The condensed hot water is cooled in the cooling towers and fed back into the boiler.



Fly ash from the boiler is collected in the bag house.



The bags are periodically emptied and the fly ash is collected in the fly ash bins.



Bottom ash from the boiler falls out of the bottom of the boiler and is collected underneath the boiler. The ash contains rock from the fuel and the boiler fluidized bed sand.



Some of the sand is fed back into the boiler, the rest is taken back to the fuel yard to be added to the paper sludge and fuel.



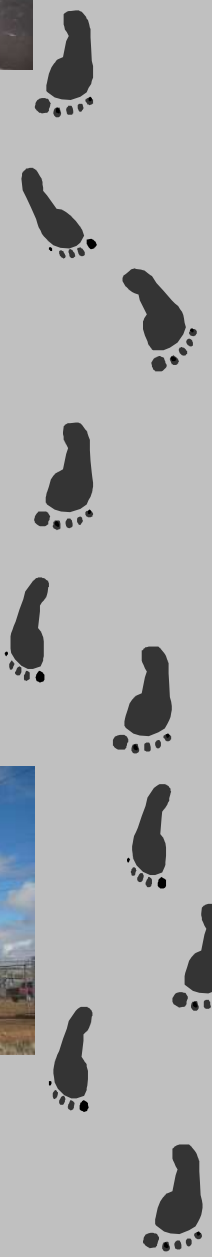
The flue gas is ducted to the stack.



The power generated by the plant is delivered to the switchyard to go onto the electrical grid.



The whole operation is monitored and controlled from the Control Room.



## PLANT TECHNICAL SPECIFICATIONS

|  |         |
|--|---------|
| Power Plant Gross MW                   | 24.0    |
| Power Plant MW Net                     | 21.6    |
| Electricity Produced MWh/yr            | 190,000 |
| Fuel - BDT/Y (Bone Dry Tons per Year): |         |
| Mill Residue                           | 7,500   |
| Forest Fuels                           | 75,000  |
| Urban Residues                         | 32,000  |
| Paper Residuals                        | 70,000  |
| Total Fuel                             | 185,000 |
| BDT/MWh net                            | 1.08    |
| Annual Acres Thinned                   | 5,775   |



## Biomass and the Environment

Although Biomass technologies are generally considered to be environmentally benign, some responsibility on the part of the power plant owner/operator is required to ensure that the environmental benefits are optimized.

At the Snowflake White Mountain Power Plant fuel from different sources is blended to ensure optimum performance of the boiler. Smoke stack emissions are monitored 24/7 and the boiler operating conditions are adjusted to minimize emissions from the stack.