Nevada Division of Minerals

30 Years of Geothermal Power Production
1985-2015

Geothermal Resources Council

2015 Convention
September 21, 2015
Rich Perry, Administrator
HISTORY OF GEOTHERMAL ACTIVITIES IN NEVADA

First large diameter exploration holes for geothermal

Elko Heat Co. 1959
Beowawe/Steamboat 1979
Stillwater 1982
Dixie Valley Late 1984
Steamboat Galena I, II, III Dec-1985
Tuscarora May 1987
Blue Mountain July 1988
Wild Rose Dec-1997
McGinness Hills II Jan 1994

Exploration

Wabuska 2005-2008
Soda Lake/San Emidio 2009
Desert Peak Jan 2010
Brady Steamboat II/III Jan 2011
Salt Wells Still Water II Nov 2011
McGinness Hills May 2012
Jersey Valley Nov 2013
Patua Jan 2014

First Geothermal Power Plant

Vegetable Dehydration Facility at Brady

2015
Nevada’s First Geothermal Plant: Wabuska

From NBMG Special Publication MI-1984
750 kW Ormat binary cycle generator installed at Wabuska in 1984. Power was sold to Sierra Pacific Power Company. *From NBMG Special Publication MI-1984.*
Beowawe Geothermal Plant – First Production in 1985
Power Plants

- Pre-2005
  1. Beowawe I - 16.6 MW
  2. Beowawe Bottoming - 1.9 MW
  3. Blue Mountain - 49.5 MW
- 2005-2011
  4. Brady - 26.1 MW
- 2012
  5. Desert Peak II - 23 MW
  6. Dixie Valley - 64.7 MW
- 2013
  7. Don A. Campbell (Wild Rose) - 22.5 MW
- 2014
  8. Empire/San Emidio - 4.8 MW
  9. San Emidio Repower - 11.8 MW
 10. Florida Canyon - 0.075 MW
 11. Burdette (Galena 1) - 30 MW
 12. Galena 2 - 13.5 MW
 13. Galena 3 - 30 MW
 14. Jersey Valley - 23.5 MW
 15. McGinness Hills - 52 MW
 16. Patua - 30 MW
 17. Salt Wells - 23.6 MW
 18. Soda Lake 1, 2 - 23.1 MW
 19. Steamboat 1, 1A - 10.8 MW
 20. Steamboat 2, 3 - 47.8 MW
 21. Steamboat Hills - 13.2 MW
 22. Stillwater 2 - 47.2 MW
 23. Tuscarora - 32 MW
 24. Wabuska - 5.6 MW

From: Lisa Shevenell, Atlas Geosciences, Inc.
FLUID MINERALS DRILLING ACTIVITY

- 7 OIL EXPLORATION WELLS DRILLED
  - 2 unconventional
  - 5 conventional

- 23 GEOTHERMAL WELLS DRILLED
  - Production
  - Injection
  - Observation
FUTURE TRENDS AND CHALLENGES

• Co-Located renewable technologies
  – Solar located at geothermal facilities
• Transmission expansions
• Optimizing reservoirs (phased development)
• R&D: FORGE, EGS
• Public lands availability
  – Sage Grouse impacts
  – ~60% of NV geothermal wells on private, ~40% on public