UNLV | UNIVERSITY LIBRARIES

Nevada Renewable Energy Consortium Meeting

Aug 20th, 11:00 AM - 11:30 AM

The Way forward: A vision for Nevada's energy future

David Sims
NV Energy

Follow this and additional works at: https://digitalscholarship.unlv.edu/nvrec

 Part of the Oil, Gas, and Energy Commons, and the Sustainability Commons

Repository Citation

Sims, David, "The Way forward: A vision for Nevada's energy future" (2010). *Nevada Renewable Energy Consortium Meeting*. 5.
https://digitalscholarship.unlv.edu/nvrec/2010/aug20/5

This Event is protected by copyright and/or related rights. It has been brought to you by Digital Scholarship@UNLV with permission from the rights-holder(s). You are free to use this Event in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you need to obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/or on the work itself.

This Event has been accepted for inclusion in Nevada Renewable Energy Consortium Meeting by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.

The Way Forward

A Vision for Nevada's Energy Future

David Sims

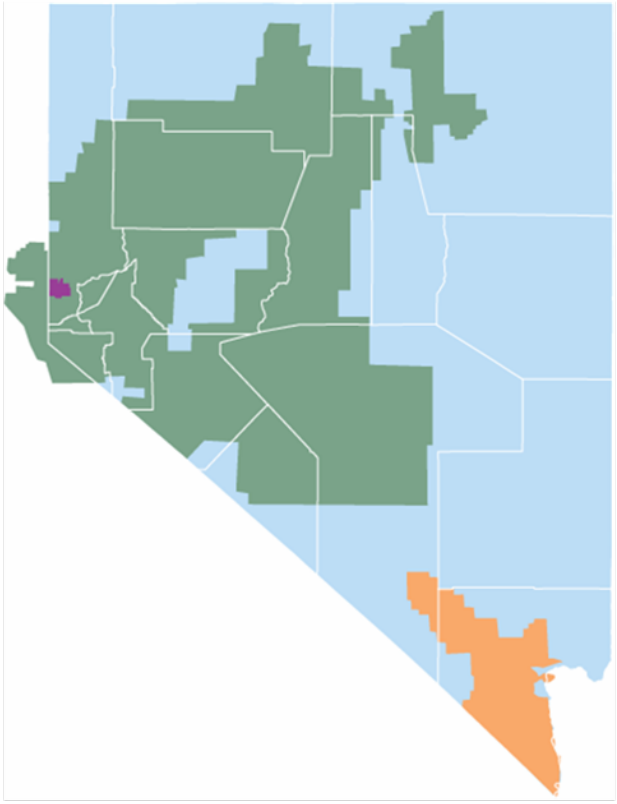
Director, Project Development

Presented to: Nevada Renewable Energy Consortium

August 20, 2010

NV Energy, Inc.

- Holding company for the two operating subsidiaries
- Serves 2.4 million Nevadans
- 5,500 MW load in South
- 1,800 MW load in North



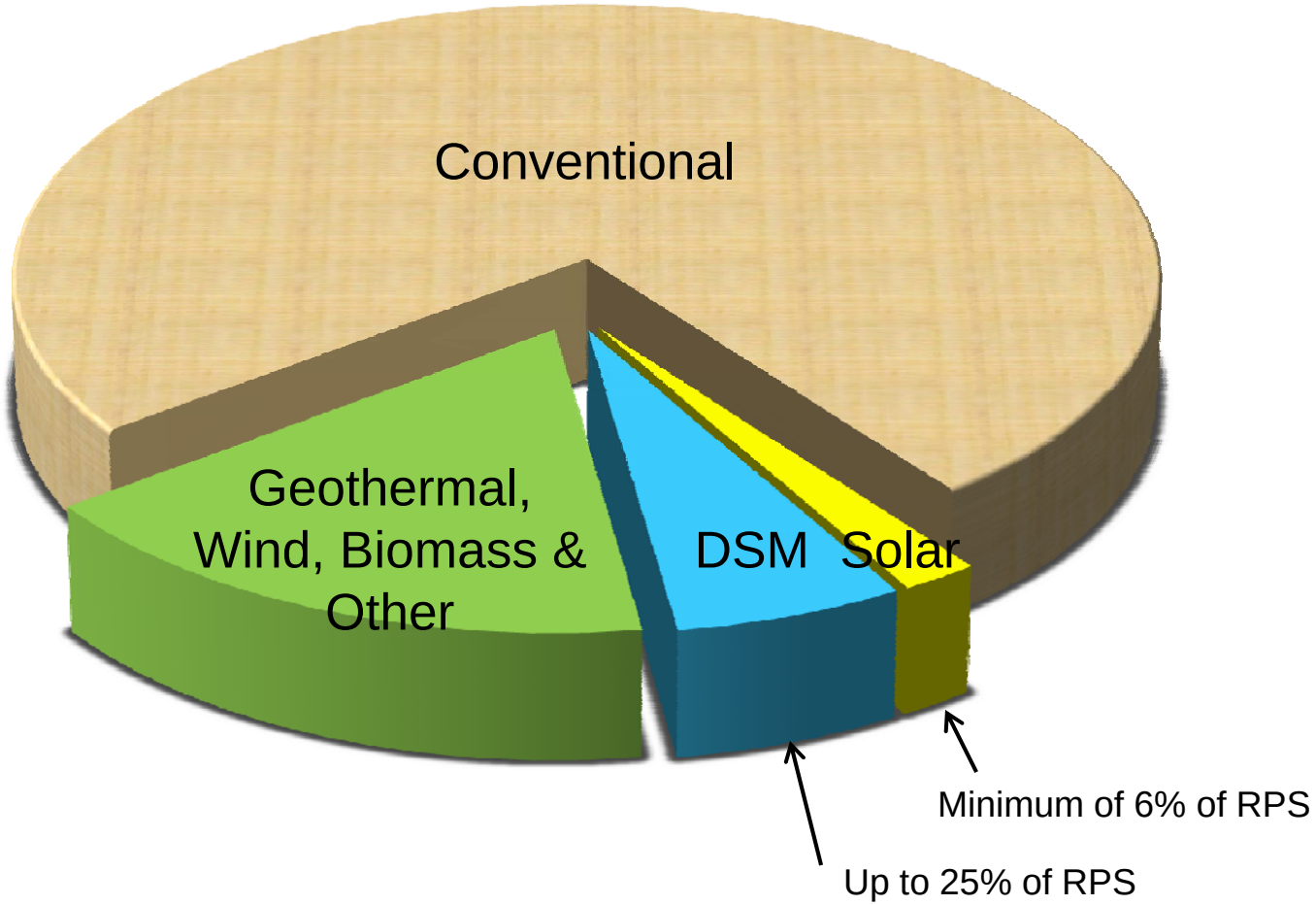
NVEnergy

Renewables: Nevada Leads the Way

- State made an early commitment to renewables
- Costly to build, but no fuel needed

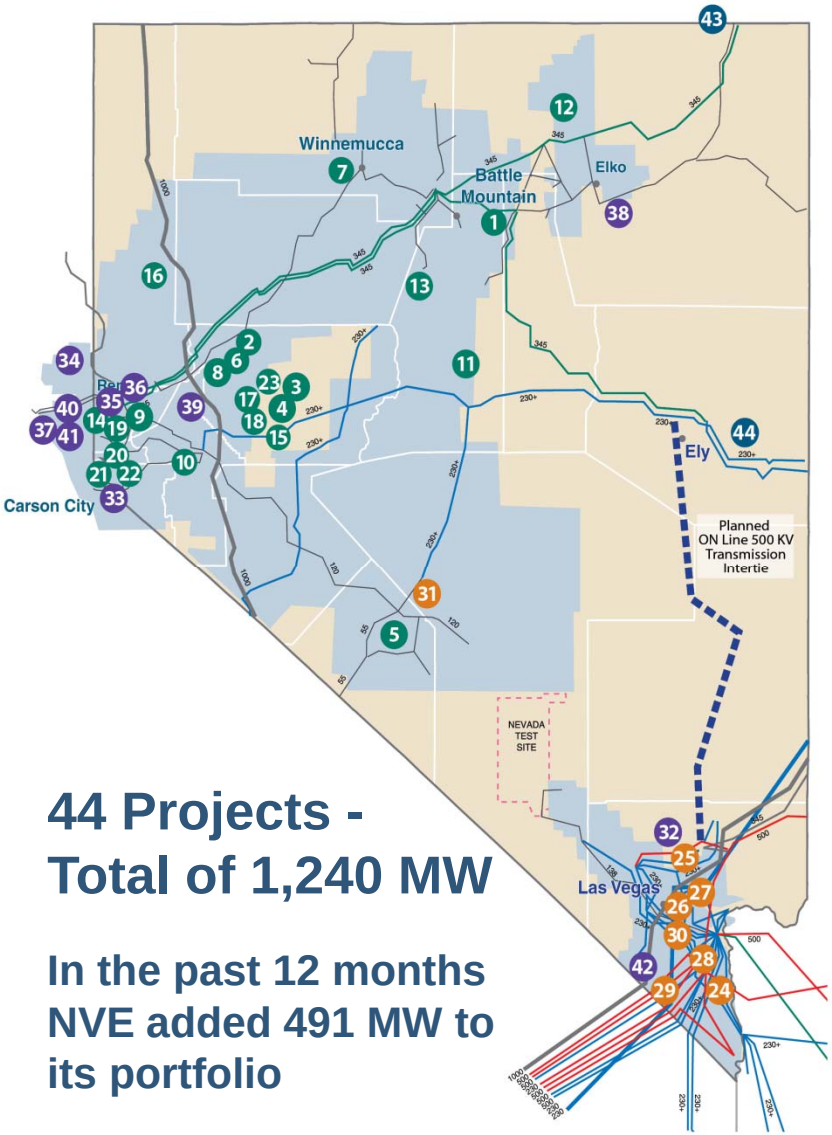
NVEnergy

Portfolio Standard - Now 25% of kWh sales by 2025



NVEnergy

NVE Renewables Portfolio



44 Projects - Total of 1,240 MW

In the past 12 months NVE added 491 MW to its portfolio

● In Development

GEOTHERMAL

1. Beowawe 17.7MW
2. Brady Geothermal Project 21.5MW
3. Carson Lake Basin ● 62MW
4. Carson Lake Geothermal Project ● 31.5MW
5. Clayton Valley ● 53.5MW
6. Desert Peak Geothermal Project #2 19MW
7. Faulkner 1 49.5MW
8. Galena 2 13MW
9. Galena 3 26.5MW
10. Homestretch 2.1MW
11. McGinness Hills ● 51MW
12. Hot Sulfur Springs 2 ● 25MW
13. Jersey Valley Geothermal Project ● 31.5MW
14. Richard Burdette Generation Facility 26MW
15. Salt Wells 23.6MW
16. San Emidio 3.8MW
17. Soda Lake I 3.6MW
18. Soda Lake II 19.5MW
19. Steamboat Hills 13.2MW
20. Steamboat IA 2MW
21. Steamboat II 13.4MW
22. Steamboat III 13.4MW
23. Stillwater 2 47.2MW

SOLAR

24. American Capital Energy - Searchlight Solar LLC ● 17.5MW
25. Fotowatio ● 20.5MW
26. Las Vegas Valley Water District (Six Projects) 3.1MW
27. Nellis AFB 12MW
28. Nevada Solar One ● 64MW
29. Next Light/Silver State ● 50MW
30. Procaps Laboratory 0.2MW
31. SolarReserve Tonopah Solar Energy Facility ● 110MW

OTHER

BIOMASS

32. CC Landfill LLC ● 10.7MW
33. Renewable Energy Ctr. @ N NV Corr. Ctr. 1MW
34. Sierra Pacific Industries 10MW
35. Truckee Meadows Water Reclamation Facility 1.4MW
36. Waste Management Renewable Energy ● 3.2MW

HYDRO

37. Fleish 2.3MW
38. Hooper 0.8MW
39. Truckee Carson Irrigation District 4MW
40. Verdi 2.2MW
41. Washoe 2.2MW

WASTE HEAT

42. Goodsprings ● 5.8MW

WIND

43. China Mountain ● 200MW
44. Spring Valley ● 150MW

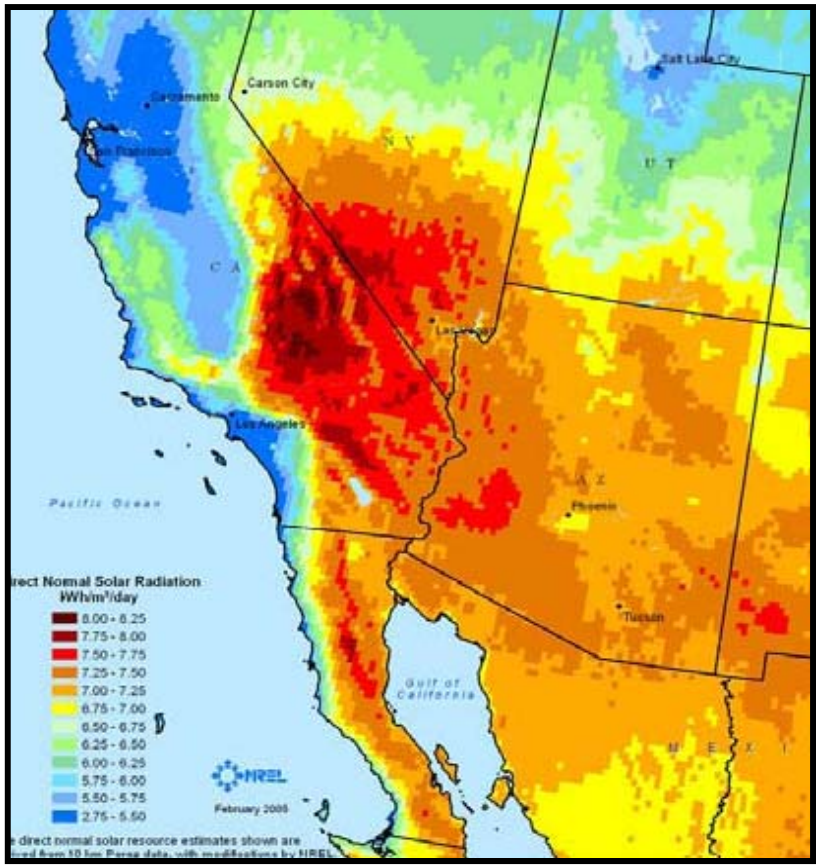
NVEnergy

Resource Opportunities

- **Wind**
  - Nevada has a fair amount of wind
  - Wyoming, Midwest, Texas excellent
- **Geothermal**
  - Great baseload resource
  - Exploration and production risk
- **Solar**
  - We've got a lot of it, how do we use it
- **Biomass**
  - Fuel supply and delivered cost are issues

Solar Resources

- Mojave Desert, centered in S. CA and extending into S. NV is the U.S.' prime solar resource
- California leading the way
- NV Energy #3 utility in total solar capacity at end of 2008
- Arizona also emphasizing solar technologies



NVEnergy

Solar Opportunities in So. Nevada

- **PV – ground and roof-mounted**
  - 20 MW in operation, 88 MW PPA's
  - Solar Generations resid./small comm.
- **Concentrating PV**
  - Amonix manufacturing facility announced
- **Solar thermal (parabolic trough)**
  - 64 MW Nevada Solar One
- **Solar thermal with storage**
  - 250 MW Solar Millenium
  - 100 MW Solar Reserve

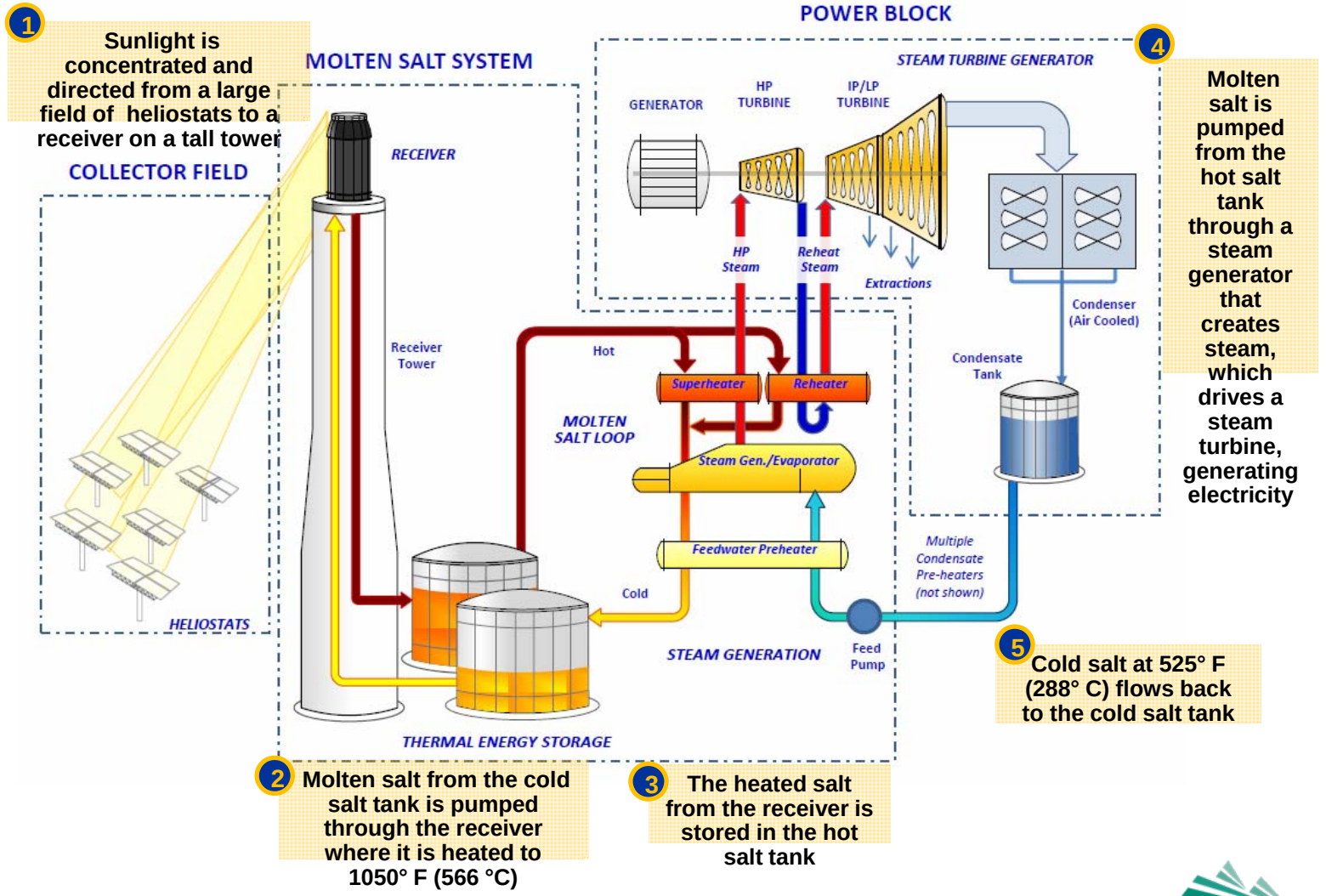
NVEnergy

Solar Challenges

- **Intermittency**
- **Load profile**
  - Peak demand at 6:00 PM, output near 0
- **Solar thermal (parabolic trough)**
  - Better at dealing with intermittency, still "runs with the sun"

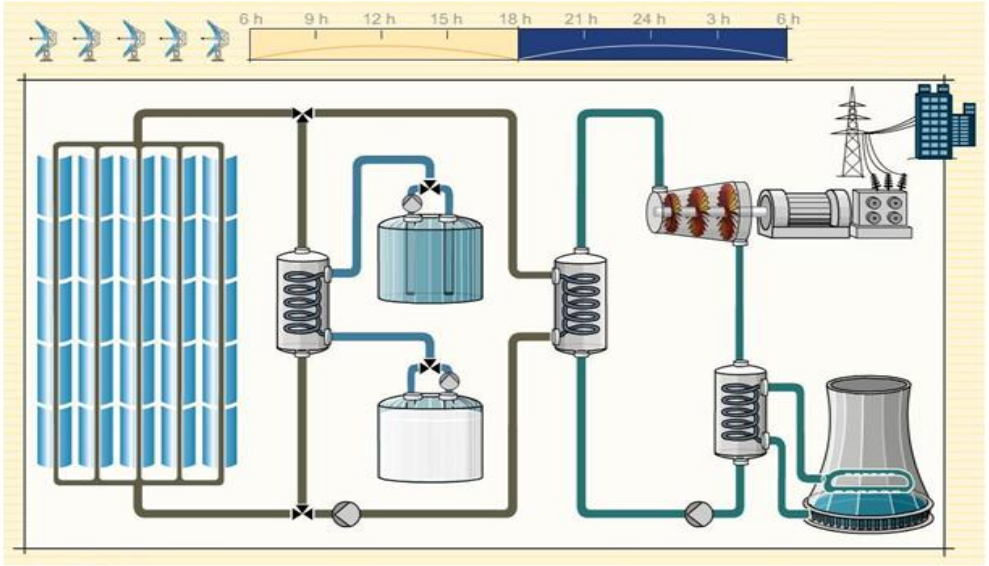
NVEnergy

Solar Reserve Molten Salt Technology



NVEnergy

Solar Millenium Technology Parabolic Trough with Storage



NVEnergy

Solar Thermal

- **Solar thermal with storage**
  - Thermal energy generated is stored for production in “shoulder” hours
  - Eliminates intermittency issues
- **Solar Millenium utilizing proven parabolic trough technology**
- **Solar Reserve technology tested in 1999**
  - 10 MW DOE Solar 2 project near Barstow
  - Dispatchable
  - Generated electricity up to 24 hrs/day

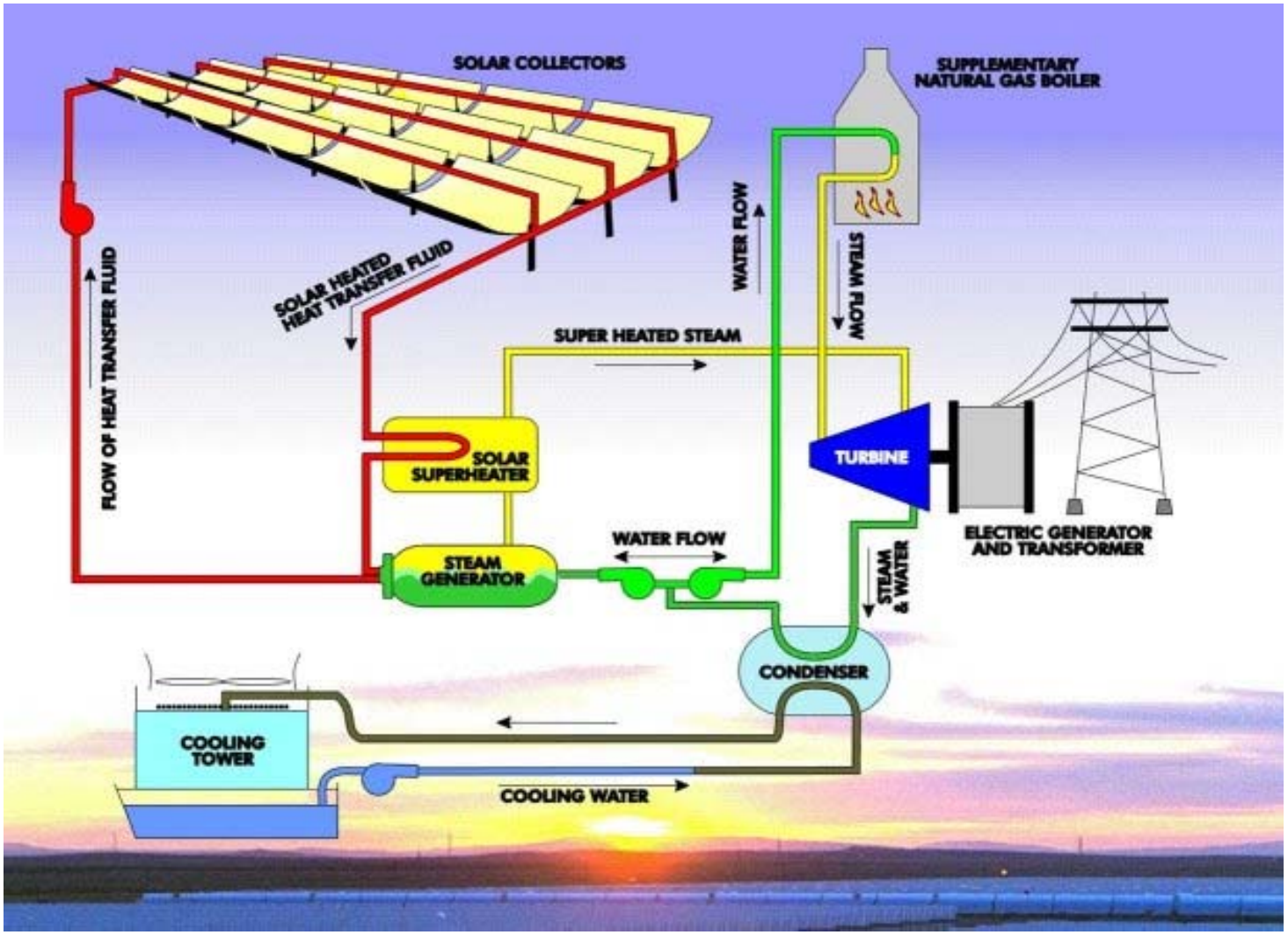
NVEnergy

Hybrid Plants

- **Utilize existing facilities**
  - Replace fossil-fueled generation with renewables
  - Minimize new capital (reduce cost)
  - Minimize new transmission (reduce line cost and transmission losses)
- **Solar and Biomass are Opportunities**

NVEnergy

Integrated Solar Combined Cycle



NVEnergy

FP&L Martin ISCC

NVEnergy

Biomass

- **Focus on existing facilities**
  - Reid Gardner south, Valmy in north
  - Modify existing fuel systems to incorporate biomass co-firing
  - Utilize burned timber, urban waste, ROW clearing, invasive species (pinon pine)
- **Challenges**
  - Fuel supply (long-term reliability, pricing)
  - Permitting
- **Benefit – baseload supply of renewables**

NVEnergy

Opportunities for Research

- **Sourcing and delivery of biomass**
  - DRI, USDA, Counties
- **Torrefied wood**
  - Delivered cost still seems high today
- **Solar technologies**
  - DOE Solar Demonstration
    - Nevada Test Site

NVEnergy

Opportunities are Unlimited

NVEnergy