

Introduction

Why Geothermal?

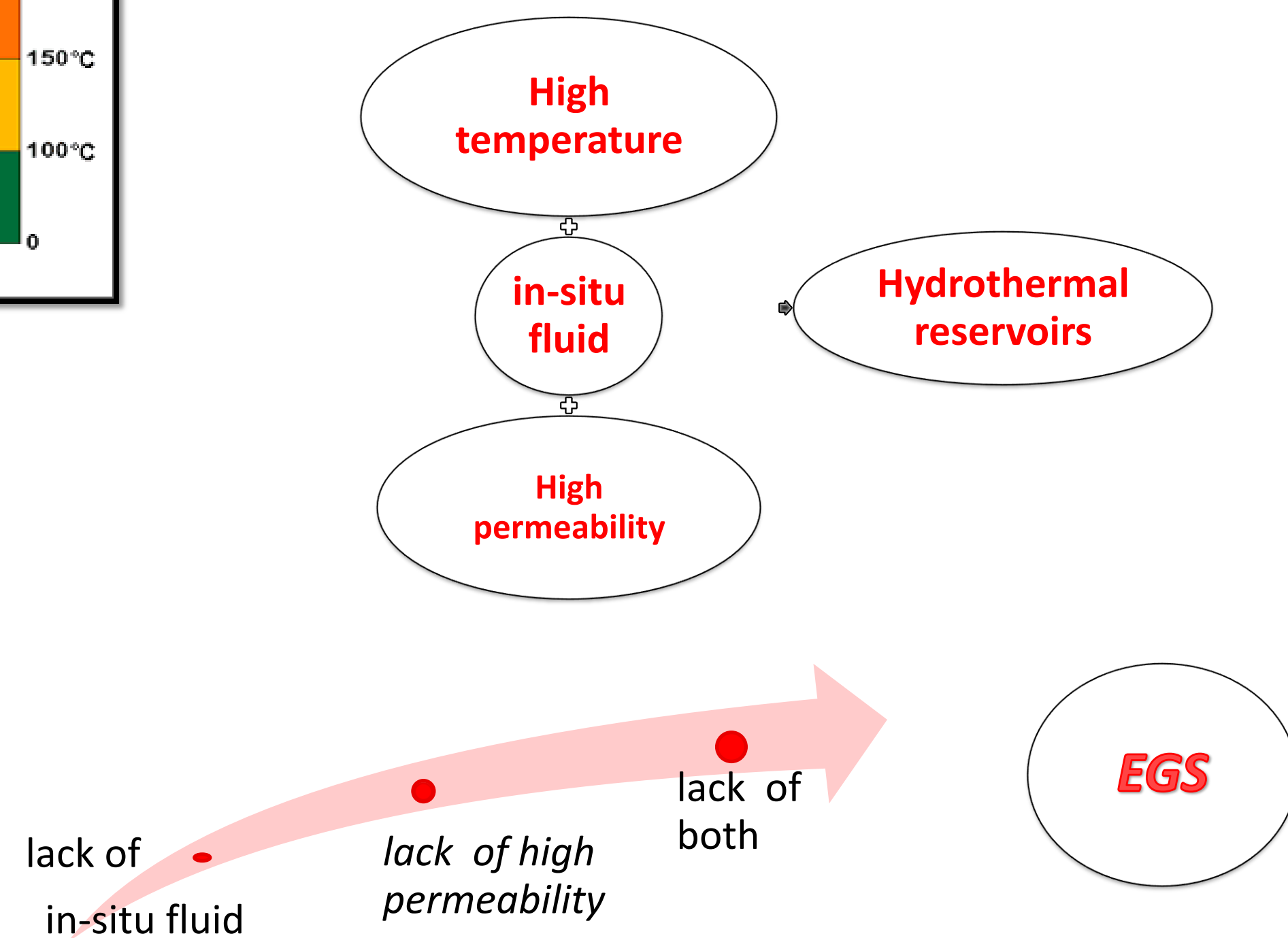
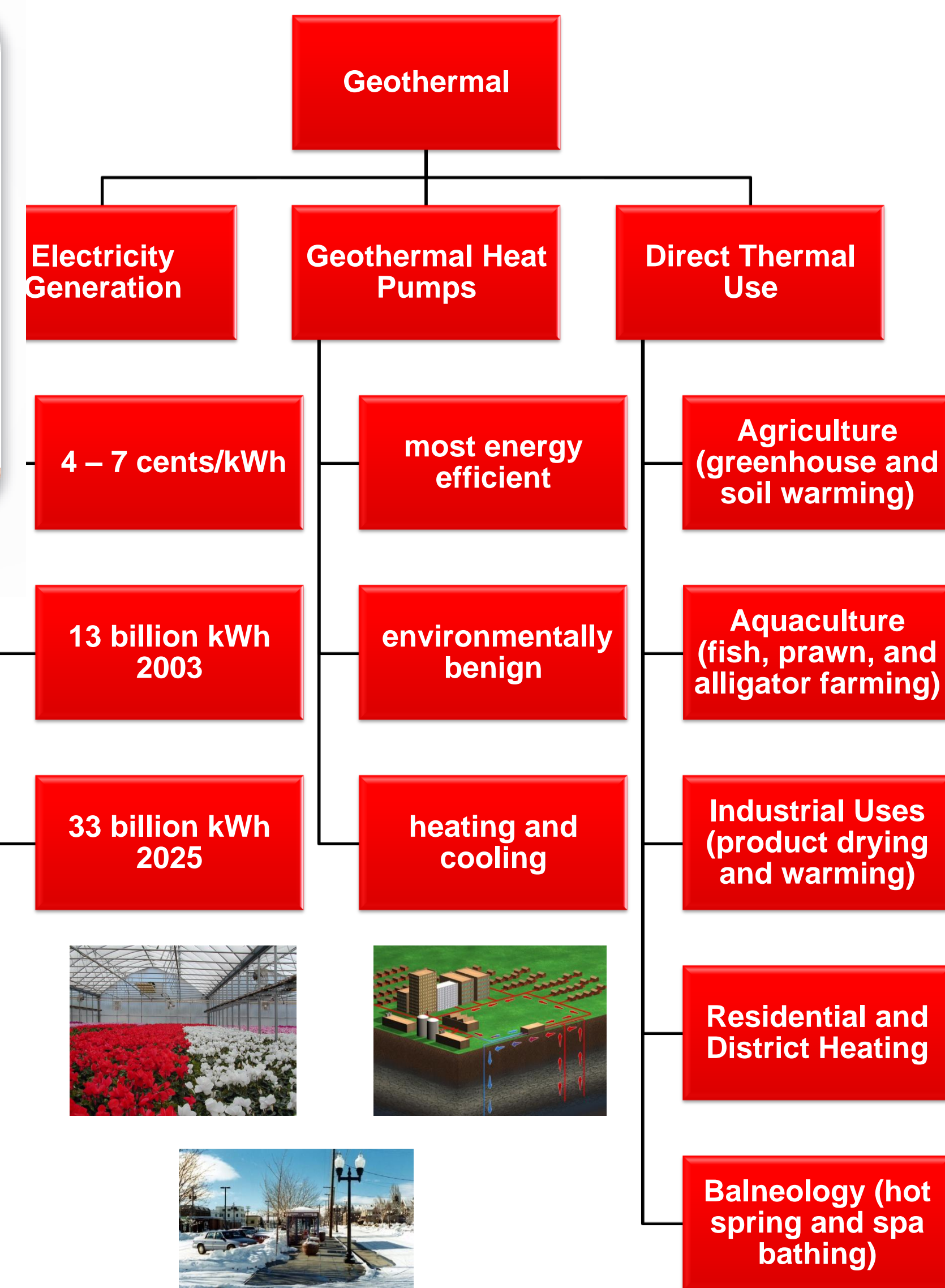
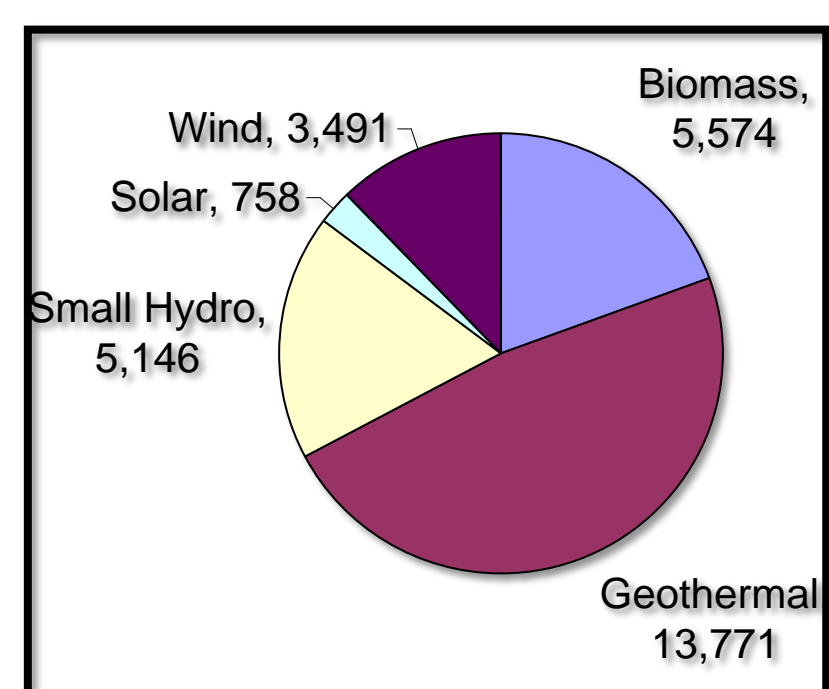
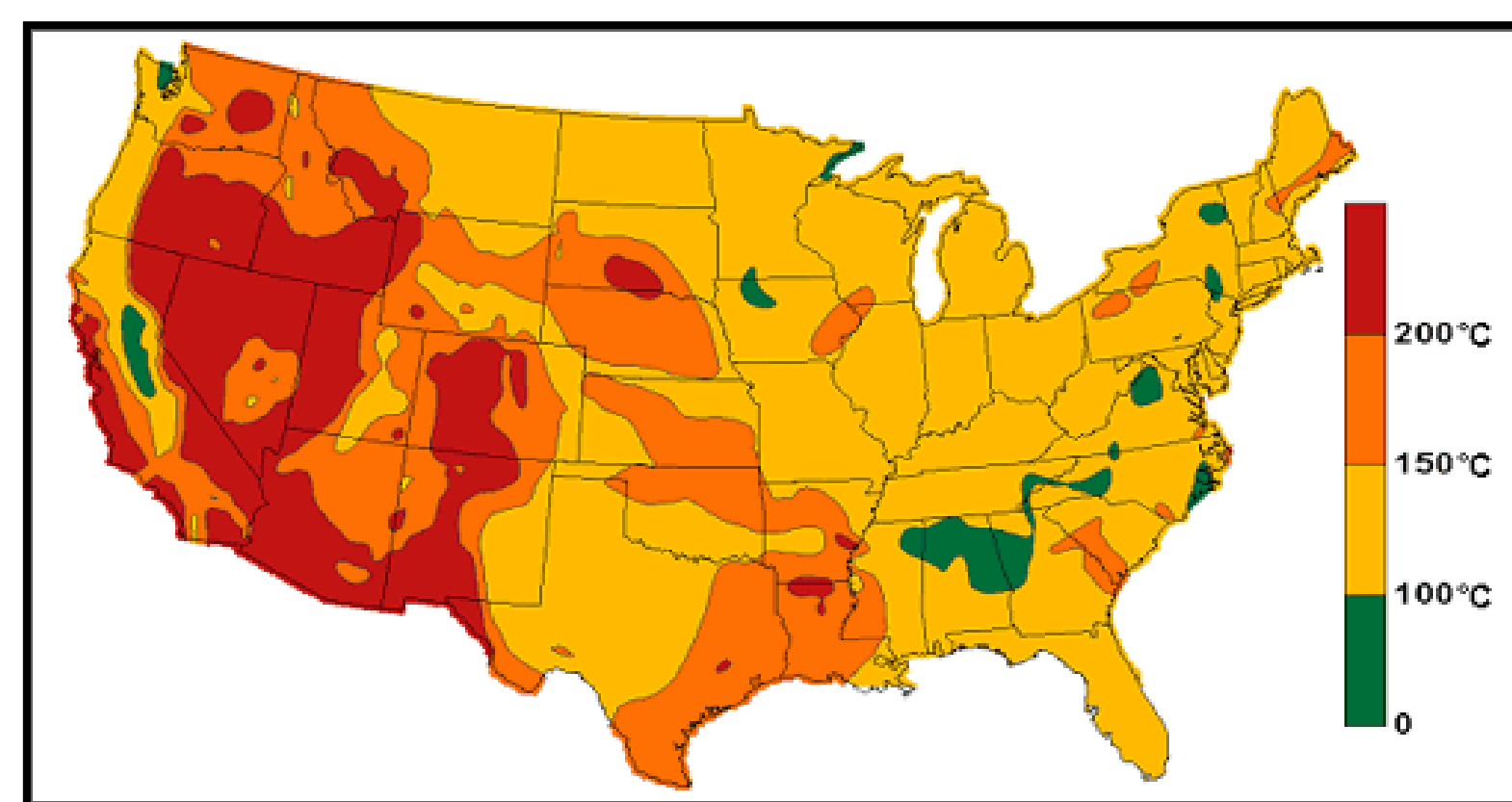
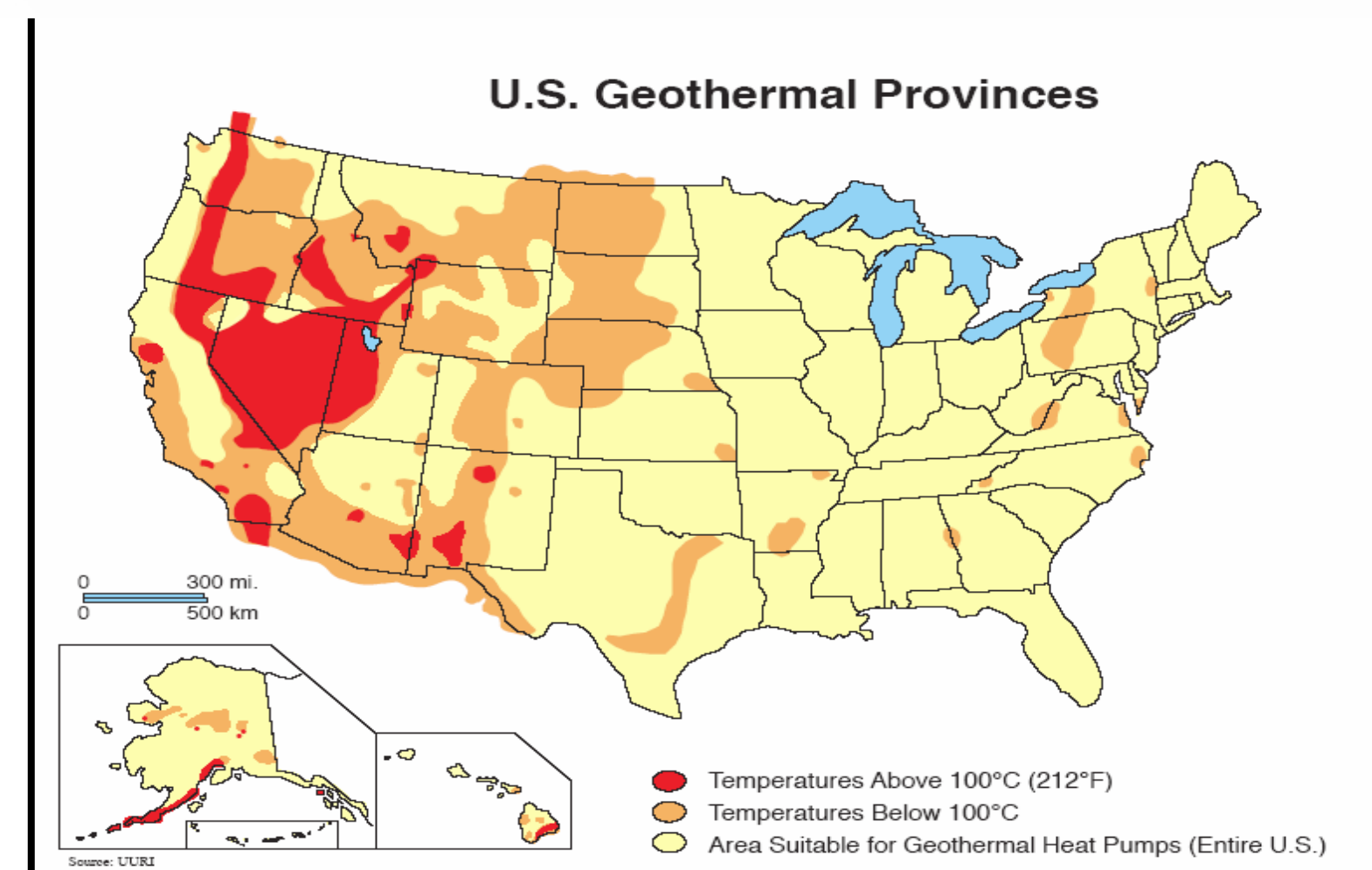
CLEAN
Renewable and emissions-free

RELIABLE
Geothermal is available 24-hours a day

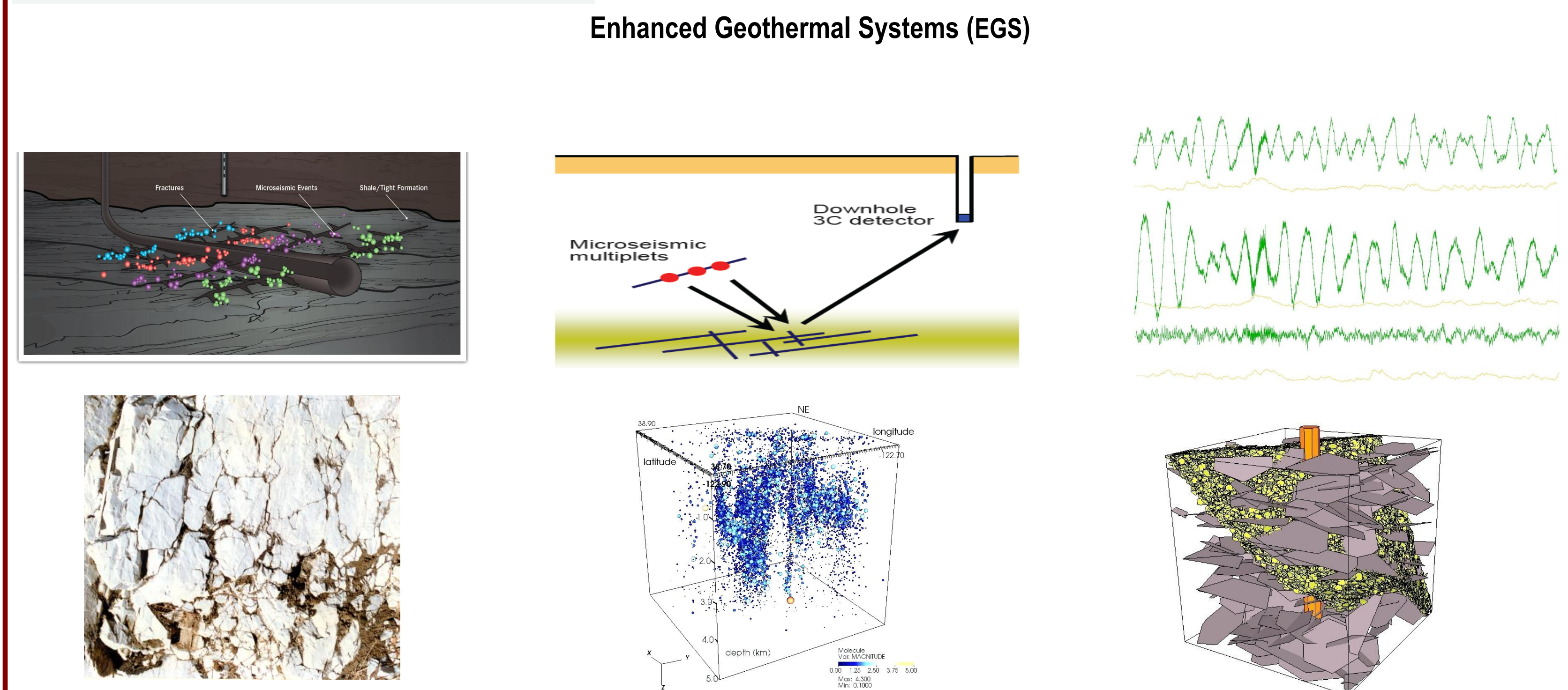
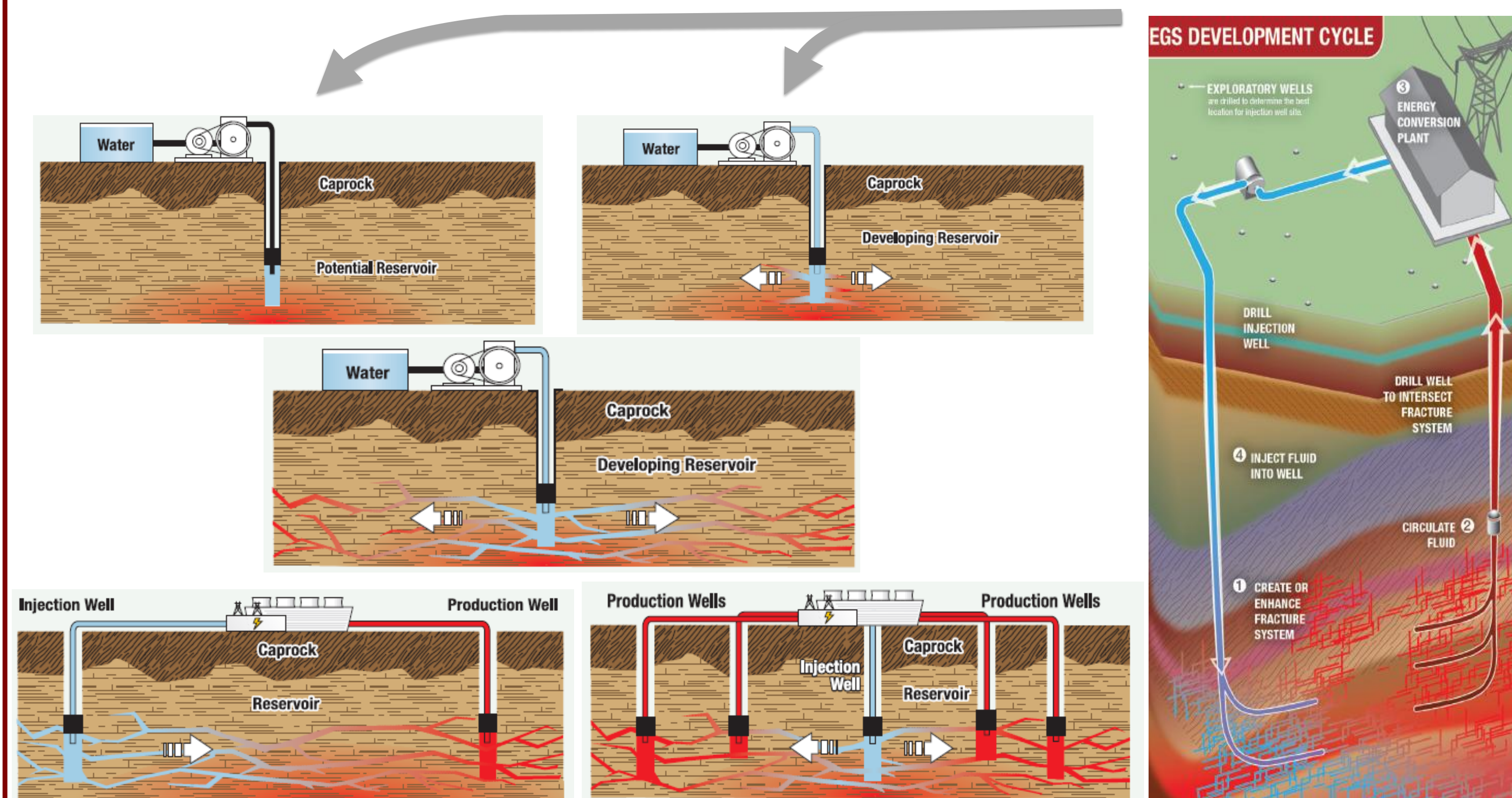
AFFORDABLE
Low operating costs, and a constant fuel cost: \$0

Total development cost is between \$2,700 and \$4,000 per kilowatt hour.

Source: Geothermal Energy Association, *Factors Affecting Costs of Geothermal Power Development*, August 2005. Idaho National Laboratory, *Geothermal Today*, September 2008.



Future opportunities/ challenges



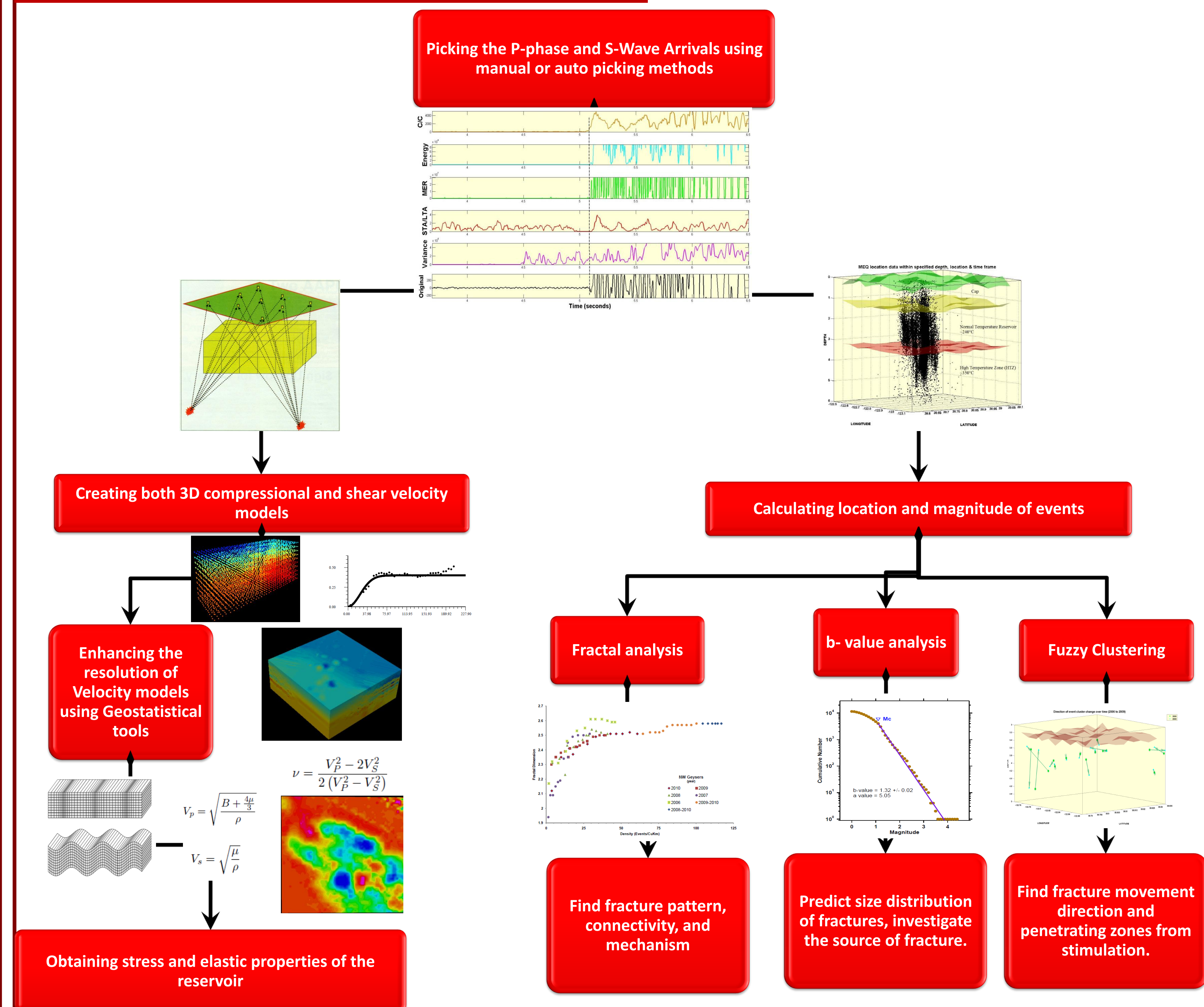
✓ Challenges

- Complex reservoir settings
- Induced seismicity
- Reservoir pressure maintenance
- Fracture network growth/ propagation
- Fracture connectivity

✓ Opportunities

- Reduce exploration costs and drilling risks
- Improved reservoir monitoring
- Cross disciplinary benefits (e.g. hydraulic fracturing)
- Better understanding of the subsurface
- Value for money

Highlights of work at USC



USC CENTER FOR GEOTHERMAL STUDIES (CGS)
DISTINGUISHED SPEAKER PROGRAM (DSP)

October 6, 2011: Advanced seismic imaging for geothermal development, John N. Lorie, Great Basin Center for geothermal energy

August 23, 2011: Overview of Star Energy; Focusing on Immediate and Future Geothermal Project Development, James A. Slutz, Director, North America Star Energy

July 25, 2011: California Energy Commission's Geothermal Program: Development of Geothermal Energy in California Pablo S. Gutierrez, Geothermal Program, California Energy Commission

June 30, 2011: Advances in integrated EM for geothermal exploration, K.M. Strack, KMS Technologies

May 17, 2011: Induced Seismicity, Issues and Paths Forward. Ernest L. Majer, Lawrence Berkeley National Laboratory

March 23, 2011: Bombs, Bears and Hot Water: Geothermal Prospecting at Mt. Spurr, Alaska, Brigitte Martini, Ormat technologies Inc.

February 21, 2011: Seismicity at The Geysers, Katie Boyle, Lawrence Berkeley National Laboratory

