TESTIMONY OF GUY WANEGAR, PRESIDENT

CONNECTICUT GEOTHERMAL ASSOCIATION (CTGEO)

before the

ENERGY & TECHNOLOGY COMMITTEE

HOUSE BILL 6535: AN ACT REDEFINING CLASS I RENEWABLE ENERGY SOURCES

Senator Duff, Representative Reed, Senator Chapin, Representative Hoydick and esteemed members of the Energy & Technology Committee:

My name is Guy Wanegar and I am President of the Connecticut Geothermal Association. I appreciate the opportunity to speak before you today.

The Connecticut Geothermal Association (CTGEO) supports House Bill 6535 *An Act Redefining Class I Renewable Energy Resources*. CTGEO believes that bill provides revenue opportunities that Connecticut residents need to offset the relatively high capital costs associated with geothermal heat pump system installations. These capital costs have acted as a barrier to consumers who wish to take advantage of this long-standing, efficient, renewable and cost-effective heating and cooling technology.

CTGEO is an organization of geothermal heat pump system installers and related trades-people organized to promote the growth of the ground source heat pump industry in Connecticut.

As this Committee well knows, the REC program was created to spur the development in-state clean and renewable resources. Although traditionally dedicated to electricity project development, more and more policy-makers have realized the net energy benefits provided through the inclusion of geothermal heat pumps in REC programs. For example, Maryland and New Hampshire have passed legislation to include useful thermal energy. CTGEO believes the inclusion of geothermal heat pumps as a Class I resources is right for Connecticut now because:

- **Geothermal Systems Result in Less Energy Use**

  Although geothermal system heat pumps run on electricity, the pumps are only required to run to produce the difference between the outside ground temperature and the temperature indoors. Geothermal systems utilize electricity to transfer the stored solar energy in the earth's surface into the building during the heating mode. In the cooling mode, the process is reversed and the excess heat indoors is sent back to the earth. Conventional furnaces must combust fuels in order to create heat, while geothermal systems only transfer existing heat. Conventional air conditioners must try to reject heat into hot outdoor air temperatures where a geothermal unit transfers heat back to the earth. As a result of this efficient transfer process, geothermal systems can save on average 30 to 70 percent over conventional fossil fuel heating and electric air conditioning systems

- **Geothermal Systems Provide Electric System Benefits**

Electricity prices are largely driven by natural gas prices in New England. In the winter, geothermal systems remove entirely the need for natural gas (or oil) for heating, thereby reducing demand on the natural gas system. In the summer, geothermal systems directly reduce electricity consumption (air conditioning load), thereby reducing annual peak demand, which drives price spikes that distress electric customers.

- **Geothermal Systems Provide Jobs to Small Connecticut Businesses**

  There are currently 28 CTGEO members and 135 certified International Ground Source Heat Pump Association (IGSHPA) installers in Connecticut. Many members are in related fields, from trades-people to system educators. With installations of approximately 3000 systems in the past 15 years, the attractive operating cost and environmental benefits of geothermal heat pump systems have created a budding industry comprised of green jobs in Connecticut. This is in spite of the fact that these systems are capital intensive. Additional incentives to consumers through participation in the REC market will help grow small jobs for local contractors.

CTGEO offers several comments on House Bill 6535. Our comments are accompanied by a "mark up" version of the bill (attached) and are explained below.

Section 1:

CT GEO respectfully requests a terminology change that separates geothermal heat pumps from air pumps to distinguish clearly between the two technologies. While both technologies provide benefits, they are significantly different and require separate evaluation, measurement and verification standards, among other differences.

Sections 4 and 5:

Included are two suggested language changes that replace the word "metering" with "measuring" in Sections 4 and 5. These changes are meant to avoid heat pump technology implementation problems in Connecticut that have occurred in New Hampshire surrounding the status of meters. Currently, the industry (through ASTM – the American Society for Testing and Materials) is in the process of certifying standards for meters to be used to measure heat energy conversion to megawatts. The anticipated completion for these standards is late 2014. However, metering standards do exist today for BTUs. By applying the conversion formula [see CTGEO's insertion at Section 5 (NEW) (h)], metered BTUs can be "measured" and converted into megawatt hours. CTGEO is concerned that, like the New Hampshire law, references to "metering" will slow the regulatory process until the ASTM metering standards are developed.

Finally, CTGEO notes that solar thermal is not included among the technologies covered by the bill. We believe that the bill should apply to those proven efficient, verifiable, renewable in-state resources and that solar thermal fits within this category. Therefore, we support its inclusion as a Class I resource.

Thank you.