The New York Solar Thermal Consortium

New York Solar Thermal Roadmap, The Process

While 42 million solar thermal systems have been installed worldwide, the U.S. has been slow to adopt this technology. However, the U.S. sentiment is changing. As the nation's focus on renewable energy continues to grow exponentially, the expectation is that so too will the adoption of solar thermal technology. As such, leading solar thermal companies around the world are looking to establish production facilities in the U.S. Most states will be aggressive in trying to attract new business, especially given recent business climate across the country. As such, individual states will have to compete and the window of opportunity will be small for them to attract these solar thermal companies. New York State (NYS), a first mover, is heavily focused on driving its solar thermal industry development. This new industry will create manufacturing and high skilled jobs and drive the development of a new sustainable industry.

The Solar Thermal Consortium (STC) is working to make New York State a leader in this surging solar thermal industry. As part of its initiatives, the consortium is developing the Solar Thermal Roadmap, which will identify the roadblocks and create a path to spur increased development, investment, manufacturing, sales and deployment of solar thermal technologies in the state.

The STC is led by the collaborative efforts of Clarkson University's Center for Advanced Materials Process (CAMP), a NYSTAR Center for Advanced Technology (CAT); the New York Solar Energy Industry Association (NYSEIA); The Solar Energy Consortium (TSEC) and Droege & Comp., an international management consulting company with a Competence Center Energy focused on renewable energy. The STC also brings together a broad representation of industry professionals from closely related industries (such as plumbing, heating, cooling, utility, and roofing companies), labor unions, government representatives, regulatory entities, and public advocates.

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The Goals and Visions of the STC:

1. Make New York the national leader in research and development, deployment, and manufacturing of solar thermal technologies
2. Create an industrial/academic/governmental partnership to cultivate next generation solar thermal technologies
3. Train the workforce to manufacture, install, maintain and repair solar thermal systems
4. Increase the residential and commercial adoption of solar thermal technologies for heating and cooling needs
5. Identify existing assets and form a cohesive network from current and potential partners
    - The Solar Thermal Roadmap will comprehensively identify current NYS parties and resources that will contribute to the roadmap implementation
    - Key parties will include companies, universities, organizations, associations, and partnerships that aid in the successful implementation of the Roadmap
    - The Solar Thermal Roadmap will identify key companies NYS would like to attract to the state
6. Create a NYS industry marketing plan to execute for the solar thermal industry
7. Identify industry research needs for universities and set a university research plan in motion

Key Success Factors for the Solar Thermal Roadmap:

- A clear, consistent, and widespread understanding of how solar thermal works and its benefits
- High visibility and buzz surrounding the Solar Thermal Roadmap
- Appropriate outreach and awareness building with government and related industries
- A certain level of financial incentives to promote the adoption and use of the technology
- Significant level of education for all stakeholders, in particular, for solar thermal related jobs
- The appropriate level of targeting and recruiting of key leaders and organizations to work in the industry
- Leadership commitment to the success and participation in a collaborative approach to solving issues that may arise while founding the industry
- Consumer awareness development
- Measurable goals and a process for tracking progress

The Solar Thermal Roadmap builds upon global best practices that have worked in other regions to create markets for this proven technology, while encouraging new ideas that will help build New York as a leader in this emerging industry. This combination will bring solar thermal's many environmental, employment, and economic development benefits to the state. For example, the $3 Billion European Union solar thermal market, and the recently unveiled California initiative (an aggressive program to spur 200,000 installations by 2015) offer potential models for New York to build upon.

The Roadmap's Evolution Process has three unique Modules:

Module 1 04/09 – 10/09	Phase 1: Formation of Solar Thermal Committee Phase 2: Creation of Roadmap Outline and kick-off	☑
Module 2 11/09 – 01/10	Phase 1: Identification of Roadblocks and Questions Phase 2: Best Practice Identification	☐
Module 3 02/10 – 04/10	Phase 1: Development of Solar Thermal Roadmap Phase 2: document Revision and Presentation	☐
Products	Solar Thermal Roadmap Framework for a successful solar thermal industry	☐

Module 1 (completed):

Phase 1: Formation of Solar Thermal Committee

- The STC played a leadership role in conducting the preliminary assessment of existing and relevant initiatives in the state in order to determine the level of interest and priorities of key stakeholders. The pre-planning phase determined the focus and direction of the Roadmap. Clarkson University's Center for Advanced Materials Process, a NYSTAR Center for Advanced Technology; the New York Solar Energy Industry Association; The Solar Energy Consortium and Droege & Comp. will further cooperate to work together to support New York State's solar thermal potential

Phase 2: Creation of Roadmap Outline and kick-off

- It is with the State of New York's energy goals and the development of a thriving industry in mind that the STC came together at the October 20, 2009 NYS Solar Thermal Consortium Symposium to begin the formal work to create the NY Solar Thermal Road Map. In collaboration with 150 identified and selectively invited stakeholders and international industry experts, a comprehensive list of questions, issues, and potential solutions which address the current under-utilization of solar thermal technologies in the state was developed

Module 2:

Phase 1: Identification of Roadblocks and Questions

- Droege & Comp. and Clarkson University will develop the NYS Solar Thermal Roadmap
- Droege & Comp. and Clarkson University will use the information gathered in Phase 2 of Module 1 to identify all roadblocks and questions that will be addressed in the Solar Thermal Roadmap
- Define categories for information collection including
    - private sector roles and issues
    - training and workforce development
    - the usage of New York's assets for technology development
    - public sector roles and issues and
    - consumer education and consumer awareness

Phase 2: Best Practice Identification

- The STC will conduct market analyses which will support the Solar Thermal Roadmap. These market analyses will support the Solar Thermal Roadmap in two ways: 1) build on already existing industry knowledge, and 2) assess market needs based on existing, more developed global and national solar thermal markets
- Solution development will include a market assessment with the following research areas:
    - European Market
        - Best practices of solar thermal market development
        - Definition and identification of solar thermal market players
        - Market needs of solar thermal market players
    - U.S. Market
        - Status of solar thermal technology application
        - Potential for solar thermal technology application
    - New York State Market
        - Status of solar thermal technology application
        - Potential for solar thermal technology application

- In addition to the market analysis/research, the STC will develop and conduct questionnaires to assess NYS solar thermal stakeholders and players' characteristics and needs
    - Step 1: A consistent questionnaire will be developed for the interview process
    - Step 2: Relevant organizations, companies, associations, experts, and governmental organizations will be identified
    - Step 3: Individuals will be interviewed and the results analyzed
- In parallel to conducting individual interviews, the STC will set up work groups to hold meetings consisting of stakeholders within the identified work categories. Each workgroup will consist of 5-15 stakeholders. Each work group will assign a work group leader
- A work committee, consisting of the work group leaders and the STC steering committee will lead the groups.
    - The work groups will review the process to close any gaps potentially left open in the identification process, i.e. Module 2 Phase 1
    - In a second step, the work groups will oversee the interview results to solve open issues. The work groups will provide the first feedback on the draft Roadmap process and continue to do so through to the end of Module 3
- The preliminary work group results will lead to a draft Roadmap outline. To insure broad acceptance of roadmap proposals, there will be joint conferences out of the various work group leaders in the work committee and selected stakeholders

Module 3:

Phase 1: Development of Solar Thermal Roadmap

- Clarkson University will take the lead in writing the Solar Thermal Roadmap, based on the results of the preceding Modules

Phase 2: Document Revision and Presentation

- In conjunction with Droege & Comp. and the members of the STC, Clarkson University will revise and make necessary changes to the document
- The work committee will review all documentation
- There will be a public presentation of the finalized Roadmap by the STC in Q1 2010 after the printing process

STC will remain in existence after the process and expanded to include as wide a consultation and follow-through as possible. The expert work groups will be asked to provide information on the status, timetabling, milestones and reviews and identify the necessary steps to further improve the process, laid out by the Roadmap.

Post Roadmap Release

- A post-roadmap process will be identified in the Solar Thermal Roadmap
- The STC intends to continue its solar thermal coordination activities after the release of the Solar Thermal Roadmap, but will work through existing NYS-based organizations, agencies, university centers of excellence and industry partners to execute the plans and recommendations of the Roadmap
- The STC anticipates that sometime in the future, as the solar thermal industry matures and the market becomes established, the STC will develop into an industry led and industry funded trade association to guide and lead solar thermal issues in NYS
- The NYS Solar Thermal Roadmap will serve as an example and lead solar thermal development in other markets within the United States