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## The Necessity for CHP Industry Standardization for an Energy Efficient Future

Standardization is needed now more than ever in the CHP industry. Let's take a look at the Combined Heat and Power (CHP), also referred to as "cogeneration," industry in America as it exists today and why it's time to standardize. If we, as an industry, allow ourselves to self-reflect, we may realize some very interesting things. Things that may help spur growth for our industry to the *next stage*. CHP is stuck without much traction in this important place in time. It's a technology that has been around since Thomas Edison introduced America's first central power plant – a CHP plant!

(<http://www.energy.gov/articles/top-10-things-you-didn-t-know-about-combined-heat-and-power>). And while his "Edison bulb" has been replaced by more efficient technologies like LEDs, so has his CHP technology.

Now here we are more than 100 years later and one may ask, "why hasn't the technology taken off in the US like it has in regions around the World such as Southeast Asia, Caribbean, and Europe?" Let's take a look into why CHP is not more prominent than it should be. Recently a CHP investment company, Empower Equity, Inc, presented at the 2016 Technology and Market Assessment Forum about the **five major barriers** facing the CHP industry as it seeks to become a mature market in the United States. These barriers include: **Standardization, Financing, Regulation, Logistics, Education & Understanding**. While analyzing these barriers it is also important to consider the vital stages of an industry's life cycle.

According to *Inc. Magazine* (<http://www.inc.com/encyclopedia/industry-life-cycle.html>), there are four stages of an industry's life cycle: Introduction, Growth, Maturity, and Decline. It could be said that **the CHP industry is stuck in the Introduction Stage**; over 100 years after Edison introduced the World to CHP. The Introduction Stage, is when an industry uses "marketing tactics [which] are intended to explain the product and its uses to consumers and thus create awareness for the product and the industry." While product explanation or education is an important issue, Empower Equities, Inc. has illustrated four other issues that are just as vital to address. It recently seems that the Education and Understanding barrier mentioned above is getting way

too much attention in the CHP industry. And this “over attention” in a single category may in fact be hindering our industry’s progression to the next stage: The Growth Stage.

How are we trapped in the Introduction Stage? It is simple, **our industry lacks any substantial standardization**. As *Inc. Magazine* points out, when the Growth Stage is achieved “the industry is experiencing more product standardization....which may encourage economies of scale and facilitate development.” While we may be seeing individual product standardization, we certainly aren’t seeing any economies of scale. While at the same time, any facilitation of development is occurring through quasi-governmental incentive programs like the New York State Energy Research and Development Authority’s (NYSERDA) impressive and cutting-edge “CHP Catalogue Program.”

(<https://www.nyserda.ny.gov/All-Programs/Programs/Combined-Heat-and-Power-Program>) These programs are very important in aiding CHP and any other technologies to explode. Just like the massive Federal tax credit and state incentive programs have aided the solar industry to explode. However, the solar industry didn’t just explode overnight. There have been thousands of folks behind the scenes to address the five barriers mentioned above to enable the solar industry to grow to where it is today... far ahead of the CHP industry.

One major achievement in the solar boom was the creation of a set of project development standards created by a consortium of organizations in 2012 that included: Distributed Sun, Rocky Mountain Institute, DuPont Photovoltaic Solutions, and Underwriters Laboratories. Their efforts led to a standardized approach called TruSolar (<http://www.trusolar.org/>) that helped de-risk solar investments. Which coupled with the tax credits and incentive programs, helped support the solar industry’s greater investment from structured finance companies. This in turn provided more capital to fuel the third-party Power Purchase Agreement equity investment approach to solar.

Why are standardizations so important? The CHP industry **has no** such industry-wide standards in the United States. The industry is made up by a collage of individual company-led standards. Which looks like a patchwork of varying calculations, technology, terminology, erratic financial returns tied to murky investor risk, and other things that not only create misunderstanding and confusion for the end user/customer, but also stifles our industry’s growth to the next stage.

While recent working groups, which have included organizations such as the: NRDC, USEPA, USDOE, Pace University, and others, have concluded that standardization is needed in the CHP industry, nothing has been done to actually create a plan and execute on it. It’s time to change this lack of strategic planning in the CHP industry. Working with these same organizations and others, Northeast Clean Heat & Power

Initiative (NECHPI) proposes to lead the industry into the next stage by assembling and managing the team that will create a program, like TruSolar, that will deliver the necessary industry standards **to finally bring** the CHP industry, over 100 years later, into its next stage of growth.