

About The RF Energy Alliance

■ **What is the RF Energy Alliance?**

The RF Energy Alliance is a non-profit technical association comprised of companies dedicated to realizing solid-state RF energy's true potential as a clean, highly efficient and controllable heat and power source.

■ **Who founded the Alliance?**

The Alliance is founded by E.G.O. Elektro-Gerätebau GmbH, Huber+Suhner, ITW, NXP Semiconductors, Rogers Corporation and Whirlpool R&D. These global companies represent key components and applications markets committed to driving the success of solid-state RF energy technology. These companies are leaders in their respective business segments.

■ **What are the Alliance's primary goals?**

To standardize solid-state RF energy technology and its associated component and sub-module roadmaps—an effort that will reduce the complexity, cost and development time associated with bringing related products to market.

■ **When will the technical specification be available and who will have access to it?**

Details regarding specification delivery will be made available as soon as possible. All member companies will directly have access to the specifications.

■ **Will the Alliance launch a certification program? If so, when?**

Yes. The Alliance intends to establish a comprehensive validation and certification program. Launch timing of this program will be released as appropriate based on specification delivery.

■ **Who should join the Alliance and why?**

The Alliance is comprised of three membership levels: Promoter, Contributor and Associate. Companies ranging from OEMs and suppliers to service providers and institutions dedicated to the Alliance's mission are encouraged to join. For information about membership levels and instruction on how to join, visit www.rfenergy.org/membership.

Members will have more or less direct access to the proceedings of different technical committees and will be able to define subjects for technical committees. Access and contribution permissions are dependent on membership levels.

■ **What application areas will be addressed?**

The Alliance will target a range of applications including, but not limited to:

- Solid state cooking in consumer and professional markets
- Industrial lighting
- Industrial heating

FREQUENTLY ASKED QUESTIONS

- Automotive ignition and lighting
- Medical devices for imaging and treatment (MRI, ablation, hyperthermia, skin rejuvenation, etc.)

About The Technology

■ **What is solid-state RF energy?**

Radiofrequency (RF) energy applications make use of the inherent energy of the electromagnetic wave to heat dissipative objects and/or power physicochemical processes. As of now, RF Energy applications are typically powered by magnetron tubes. In the new form, the RF energy will be generated by an all solid state semiconductor chain. This way, RF energy can be contained and controlled in an unprecedented, effective and highly efficient fashion.

■ **Isn't RF energy/solid-state RF energy in use today? What will be different?**

RF energy is currently in use as a heating and power source. It is commonly found in the form of magnetron technologies in appliances (e.g., cooking) and industrial heating and drying applications. Also, solid state generated RF energy is already used in niche areas like medical imaging (MRI) and analysis (NMR) machines. By establishing standard specifications for solid-state RF energy, the technology has the potential to become a highly-efficient, controllable and scalable energy and power source replacing magnetrons in these areas as well as enabling many other (new) applications, which demand the high degree of control possible with solid state.

■ **What are the benefits of the Alliance's methodology when compared to magnetrons or current solid-state RF energy solutions?**

Establishing a technical specification for solid-state RF energy offers the industry many benefits, some of which include:

- Unified interfaces in terms of geometries, power levels, connectors and software/firmware
- A more resource-efficient solution than currently used solutions
- Exceptional control and feedback of frequency, phase, power and energy levels of the RF signal
- Targeted heating
- Smaller form factor
- Low voltage drive
- Real time adaption to changing load conditions
- An "all semiconductor" electronics footprint with associated integration possibilities and design flexibility

FREQUENTLY ASKED QUESTIONS

■ **Why should solid-state RF energy be standardized?**

Standardization will result in the above benefits while establishing a reliable, scalable and cost-effective technology for heating and power applications.

■ **What industries will benefit from a solid-state RF energy standard?**

Solid-state RF energy has the potential to impact a broad range of industries from white goods/appliances to medical devices; industrial heating and lighting to automotive...and many more we have yet to even consider.

■ **When will related industrial and consumer products be available?**

Many of the Alliance's founding members have already demonstrated solid-state RF energy components and related applications. Market-availability of products based on these demonstrations is dependent on individual companies' release schedules.

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