

CFOAM Limited  
ABN 46 611 576 777  
Level 1, 33 Ord Street  
West Perth WA 6005  
Tel: +61 8 9420 9300



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### **PFOAM™ PRODUCTION UPDATE AND INITIAL CUSTOMER ORDERS**

As previously announced, CFOAM LIMITED (ASX: CFO) through its US subsidiary, Carbon Innovations, LLC (CI), has executed and completed a commercial patent license agreement with UT-Battelle, LLC related to the production of pitch-based, graphite carbon foam products whereby CI will manufacture and sell these products under the PFOAM™ product line.

The license agreement provides access to 10 patents and intellectual property related to the production end use applications of a graphitized/densified carbon foam product – PFOAM™. This product, produced from a *mesophase pitch* feedstock, has thermal conductivity properties greater than aluminium and copper, with significant weight savings. CFO can manufacture and produce PFOAM™ at scale, cost and commercial output rate to penetrate already identified markets including, but not limited to, the following:

- *Thermal management heat sinks manufactured from graphite foam for LED lighting reducing weight and increasing life*
- *Lightweight, efficient heat exchangers for commercial aircraft*
- *Industrial heat exchangers for enhanced thermal heat transfer in single or multi-phase industrial heat exchanger products*
- *Electronics components cooling*
- *Automotive applications providing enhanced cooling in a smaller, lighter weight unit*
- *Solar improving photovoltaic panel efficiency*

Production of PFOAM™ has already commenced and the first commercial sized calcined billets have been produced under our license agreement. Initial sales of PFOAM™ to customers have resulted in the order of 5 billet production units which will be shipped shortly following the completion of the final production process steps.

The sales are to customers who are testing and validating PFOAM™ for their specific use in LED lighting and heat exchanger applications, and CFO has also received further enquiries to test and validate PFOAM™ in other areas within the fields of use as highlighted above. The *mesophase pitch* feedstock for PFOAM™ is currently more expensive when compared to CFOAM® feedstock and the PFOAM™ production process requires an additional process step of graphitisation at temperatures above 2,800 degrees Celsius to make the final product. Production and sales price margins are, however, expected to significantly exceed that of other CFOAM® products.

As previously advised, the pitch based, graphite carbon foam PFOAM™ product line complements and enhances CI's two core product lines of carbon foam, namely CFOAM®20 and CFOAM®30, and will form a highly important independent product line in its own right. Key CFO personnel will continue with the current sales and marketing strategy designed to ultimately generate significant sales of all product lines, including PFOAM™.

A summary of the features and benefits of PFOAM™ are as follows:

#### **Features**

- High thermal conductivity per unit weight
- Low coefficient of thermal expansion
- High compressive strength
- Low weight relative to aluminium and copper heat sinks
- Inert in corrosive and any harsh environments
- Inflammable in bulk form and oxidation resistant in most oxidizing atmospheres
- EMI and acoustic shielding

#### **Benefits**

- High thermal conductivity and high thermal diffusivity enables superior rate of heat dissipation in thermally critical applications
- Almost *10 times* lighter than aluminium and *30 times* lighter than copper
- Inert characteristics enable high resistance to any environmental degradation in any challenging environment
- Highly fire resistant



***Finished PFOAM™ product – heat sink***



***Untrimmed calcined billet of PFOAM™***

#### **About CFOAM Limited**

*On 22 October 2016, CFO, through its wholly owned US subsidiary, Carbon Innovations, LLC (CI), acquired all production plant equipment, intellectual property (including patents and trademarks), leases, inventory, contracts and infrastructure related to the production of carbon foam CFOAM®.*

*CFOAM® is an inorganic carbon material that is manufactured from coal, pitch or lignin feedstock. CFOAM® manufactured in this process has a rigid foam structure, similar in appearance to pumice stone, but with entirely different properties. CFOAM® is currently used across a wide variety of markets including composite tooling for the aerospace sector, energy absorbing applications and defence applications. Additional markets such as the automotive applications for energy absorption and fire resistance are also expected to be significant to the Company over time.*

*CFOAM® was developed to meet the growing demand for ultra-high end performance engineering materials in the industrial, aerospace, military and commercial product markets.*

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