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FOR IMMEDIATE RELEASE

**ExxonMobil and Badger Sign Agreement to Market  
New Technology to Reduce Benzene in Gasoline**  
*Allows for cleaner burning fuel and reduced pollution*

- Converts benzene into high octane alkylaromatics using light olefins
- Avoids octane loss and hydrogen consumption of other methods
- Technology was adapted from processes used in the chemical industry

CLINTON, NJ--([BUSINESSWIRE](#)) – ExxonMobil Research and Engineering Company (EMRE) has signed an agreement with Badger Licensing LLC (Badger) to jointly market EMRE's BenzOUT™ technology, a novel catalytic process to reduce benzene in gasoline while delivering other additional benefits. BenzOUT converts benzene into high octane alkylaromatics by reacting benzene-rich streams with light olefins, such as ethylene or propylene.

Developed by EMRE and licensed through Badger, this patented technology avoids the octane loss and hydrogen consumption associated with benzene saturation alternatives. This commercially demonstrated refinery process is an extension of Badger's cumene and ethylbenzene processes, which are widely applied in the chemical industry.

"The BenzOUT agreement is a great example of how Badger and EMRE can combine their complimentary strengths in catalytic technology to produce an industry-leading process to address today's environmental and energy challenges," said Simon Hacker, EMRE Technology Sales and Licensing Executive. "We think this technology will make an important contribution to production of cleaner fuels going forward."

Mark Healey, President of Badger Licensing LLC, agrees. "Badger Licensing is well known in the chemical industry as a leading licensor of cost effective aromatic alkylation technologies. The BenzOUT agreement brings together the catalyst technology strengths of EMRE with the innovative process technology expertise of Badger and makes it available to the refining industry for the first time. Not only will this technology help reduce the benzene content of gasoline and other fuels, it will also provide an alternative means to monetize light olefins in refineries."

The multi-year agreement covers the marketing and commercialization of BenzOUT to customers in the refining industry. Under the terms of the agreement, EMRE will lead the marketing effort and the supply of BenzOUT catalyst. Badger will support EMRE's marketing efforts, and will be the responsible party for the generation of proposals and design packages, and negotiation and execution of licensing agreements.

**About ExxonMobil Research and Engineering Company and Exxon Mobil Corporation**  
ExxonMobil Research and Engineering Company (EMRE) is a wholly owned subsidiary of Exxon Mobil Corporation. ExxonMobil, the largest publicly traded international oil and gas

company, uses technology and innovation to help meet the world's growing energy needs. ExxonMobil holds an industry-leading inventory of resources, is the largest refiner and marketer of petroleum products and its chemical company is one of the largest in the world. For more information, visit [www.exxonmobil.com](http://www.exxonmobil.com).

**About Badger Licensing LLC (Badger)**

Badger Licensing LLC (Badger), a joint venture between affiliates of The Shaw Group Inc. and ExxonMobil Chemical Company, offers for license premier process technologies for styrenics and phenolics production. Each of these technologies is well-recognized in their respective marketplaces. Badger has a long history that includes more than 50 years of petrochemical process development experience, supported by strong business relationships with its licensees, catalyst suppliers and operating partners. Badger maintains its home staff in Cambridge, Mass., and also utilizes research centers of Shaw Energy & Chemicals and ExxonMobil. These research centers offer a wide range of services for process development, commercialization and modernization including numerous pilot plants that support technology advancements and portfolio expansion.