## Advances in Marine Seismic Energy Source Technology

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Over the past 15-20 years, the airgun has emerged as the dominant marine energy source.

In the early 1980's it was seen that the requirements for offshore seismic exploration were becoming more diverse with increasing demands for even more penetration, and for higher resolution from both 3D and 2D surveys.

Each of these needs could be met with a different source but this approach has significant economic and logistical problems. GSI set out to develop a single source system capable of meeting all offshore seismic requirements. The successful development program led to an entirely new airgun - the External Sleeve Airgun.

Greater power output and frequency bandwidth at greater economy can be demonstrated from this design.

Further, deployment of this source will yield a much higher frequency content and resolution level in the shallow zone coupled with gross improvements in terms of continuity of deep horizons.

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