

## Condensed Aerosol Based Fire Extinguishing System (CAFES)



India is a signatory country on Montreal protocol-1987, and ban on production and use of Halon is applicable for our fire safety systems. Several Halon alternatives are being developed worldwide. Condensed aerosol based fire extinguishing system (CAFES) has emerged as the most efficient Halon alternative as it is three times more effective than Halon-1301 on weight to volume bases, modular, simple, non-toxic, and environmentally safe.

Basically, CAFES is comprised of igniter, aerosol forming composite (AFC) and cooling pallets composite (CPC) housed in suitable casing. When the actuation signal is sent to igniter of CAFES. Igniter burns booster composite and in turn AFC, and finally produces micron size aerosols of potassium carbonate/bicarbonate and hot gases, which are cooled by CPC and the combustion products (aerosols and gases) come out of CAFES. In the fire zone, produced aerosols inhibit the fire sustaining free radical chain reaction of fuel and thereby extinguishes the fire.

Indigenously designed & developed CAFES of capacity 0.1 and 1.0 kg AFC have been tested by CFEES as per relevant performance parameters of international standards. The current technology for transfer involves complete details on process of preparation of AFC & CPC chemical composites, their blocks & tablets, design of igniter and various components of casings of CAFES, housing protocols and clamping arrangements.

Interested industries are requested to submit their financial bid in sealed envelope, along with relevant documents as per the list in appendix-A, through one of the following agencies only, to DRDO before the bid ending date:-

<b>S. No</b>	<b>Name of the Agency</b>	<b>Point of Contact</b>
1	<p><b>National Research Development Corporation</b>  Address :20-22, Zamroodhpur Community Centre, Kailash Colony Extn. New Delhi - 110048</p> <p>Tel : +91-11-29240401 to 29240407  Fax: +91-11-29240409 / 29240410  General E-mail : write2[at]nrdc[dot]in</p>	<p>Shri Rajendra Gondane  Sr. Manager (Business Development)  National Research Development Corporation  20-22, Zamroodhpur Community Centre, Kailash Colony Extn. New Delhi - 110048  INDIA</p> <p>Mobile : +91-9910496554  EPABX : +91-11-29240401-07 (Extn. 444)  Fax : +91-11-29240409 -10  Email : rgondane[at]nrdc[dot]in  Website : www[dot]nrdcindia[dot]com</p>
2	<p><b>PHD Chamber of Commerce and Industry</b>  Address: PHD House, 4/2 Siri Institutional Area, August Kranti Marg, New Delhi 110016</p> <p>Tel : 91-11-26863801-04, 49545454  Fax : 91-11-26855450, 49545451  Website : <a href="http://www.phdcci.in">www.phdcci.in</a>  E-mail : phdcci[at]phdcci[dot]in</p>	<p>Shri Nasir Jamal  Joint Secretary  PHD Chamber of Commerce &amp; Industry  Address: PHD House, 4/2 Siri Institutional Area, August Kranti Marg, New Delhi 110016  INDIA</p> <p>Mobile : +91-9810185714, 8210343267  Phone : +91-11-49545454, 49545400 Extn : 279  Fax : +91-11-26855450</p>

3	<p><b>Confederation of Indian Industry (CII)</b>  Address: The Mantosh Sondhi Centre 23, Institutional Area, Lodi Road, New Delhi - 110 003 (India)</p> <p>Tel : 91 11 45771000 / 24629994-7  Fax : 91 11 24626149  E-Mail : info[at]cii[dot]in  Website : <a href="http://www.cii.in">www.cii.in</a></p>	<p>Shri Amit Kumar  Deputy Director – Defence &amp; Aerospace Society of Indian Defence Manufacturers (SIDM)  C/o Confederation of Indian Industry (CII)  Address: 3rd Floor, IGSSS, 28 Institutional Area, Lodhi Road, New Delhi – 110003 INDIA  Mobile : +91-9990059163  Phone : +91-11-45772062  Fax : +91-11-45772022  Email : amit[dot]kumar[at]cii[dot]in  Website : <a href="http://www.sidm.in">www.sidm.in</a></p>
4	<p><b>The Associated Chambers of Commerce and Industry of India (ASSOCHAM)</b>  4th Floor, YMCA Cultural Centre and Library Building, 01, Jai Singh Road, New Delhi - 110001</p> <p>Phone: 46550555 (Hunting Line)  Fax: 01123347008/9  Website : <a href="http://www[dot]assocham[dot]org">www[dot]assocham[dot]org</a></p>	<p>Ms Kavita Sharma  Addl Director and Head - Energy and Infra  Mobile : 09871801002  Tele: 0091-11-23347040  Email:  kavita[dot]sharma[at]assocham[dot]com  Website : <a href="http://www.assocham.org">www.assocham.org</a></p>

**List of Supporting Documents to be Attached / Enclosed**

- (a) Memorandum and Articles of Association (Should be incorporated as per Indian Companies Act, as amended time to time)
- (b) Certificates of registration as a manufacturing unit, if any.
- (c) Audited Balance Sheet for the preceding three years.
- (d) Income Tax returns for the preceding three year period
- (e) Details of shareholding/ownership pattern especially foreign partners/ shareholders, foreign employees, directors, etc. The company must adhere to the prevailing Govt of India policies and regulations on Foreign Direct Investment (FDI)/DIPP norms as applicable.
- (f) Annual budget for R&D during last three years.
- (g) Numbers and details of IPR or patents, etc., held by the company.
- (h) Number of technically or professionally qualified personnel.
- (i) Record of past performance (e.g., Supply orders executed against of Ministry of Defence orders, Public Sectors and Paramilitary Forces, if any).
- (j) Availability of adequate infrastructure (List of machines and their production capacities) and technical expertise.
- (k) List of Testing and Support equipment's
- (l) ISO/ ISI certification or any other certification
- (m) Relevant clearances form the authorities/ ministries (if any)
- (n) Capacity and capability to undertake developmental work and to accept attendant financial and commercial risks.
- (o) Capacity/capability to market the product through the marketing network, sales and service network, reliability to maintain confidentiality.
- (p) PESO and DPIIT license for explosive handling if ToT is for high energy Material, explosives, propellants, and component/ system dealing with it etc.
- (q) Under taking form company seeking ToT that none of its Directors, Independent Directors, non-executive Directors, Key management personnel are involved in any corrupt practices, unfair means and illegal activities.
- (r) Details of the industrials license for defence manufacturing be provided by the industry seeking ToTs.