

# Times of India and Economic Times

## **Snowbreeze: Why going green is so cool**

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**M B Lal with Snowbreeze. Photo by Anindya Chattopadhyay**

NEW DELHI: It was a sweltering, hot afternoon in the summer of 2007 --- the kind that could melt the tar on a Delhi road. Retired journalist M.B. Lal, then 78 years old, sat comfortably in his air-conditioned residence in Saket when there was a power cut. And it wasn't back on for the next seven hours. A ceiling fan running on an inverter wasn't enough. When his wife placed a large tub full of ice under the fan, it gave him some respite --- and an idea to build his own device.

He calls it Snowbreeze, a cooling device that uses ice, water, as much electricity as a cooler and a couple of small electric pumps. Not only does it run easily on power backup, the cooling effect produced is quite similar to that of an AC as it

doesn't make the room humid. The inventor claims that the apparatus running for an hour in a closed room can bring down the temperature by seven degrees centigrade in an hour. It saves energy too. Compared to an average 1.5 ton AC guzzling 2,000 watts, Lal's device with its 12-inch fan draws 100 watts.

The retired journalist is looking to patent his invention soon. "I don't want anyone else to file for a patent and monopolise production. Everyone should be free to make and use it," says Lal who has got the entire method of making a Snowbreeze up on his website [www.greenairconditioner.org](http://www.greenairconditioner.org). A Chinese electronics company called Zhejiang More is already manufacturing and selling the equipment in China, he says.

In March 2009, Lal received a grant of Rs 1 lakh from the Ministry of Science and Technology under their Technopreneur Promotion Programme (TePP) to develop the contraption further. "I've spent almost Rs 4 lakh on this in the last four years. Government recognition and funding really helps," says Lal, who has also written a story discussing the future of air-conditioning in India.

There is little that can diminish Lal's enthusiasm. "I still have to perfect this model," he says.

Since that hot summer day, Lal has developed quite a few models of Snowbreeze. He has different models of the contraption made out of plastic drums, metal boxes and desert coolers. The desert cooler is the most effective. The plastic drum model can cost about Rs 5,500 and the desert cooler type might set you back by Rs 15,000. The box type would cost anywhere between Rs 5,000 and Rs 6,000 depending on the amount of copper used. Now he wants to make a model that uses less copper as it has become expensive. But the latest one, as he puts it himself, "makes its own ice".

The earlier models, built inside large plastic drums, worked on having an air chamber pull in hot air and cool it with copper coils carrying ice-cold water. A fan would blow cool air out of this chamber. But there was one problem. "Because the ice and water were kept together, the consumption of ice was very fast," says Lal.

Sometime late last year, while thinking about convection currents and formation of clouds, Lal figured out a way to reduce ice consumption to around 1 kilo per hour. "The working principle is simple. You can find it in a junior school textbook," he says.

There is energy in Lal as he demonstrates the equipment. That he has to use a stick to stand and walk doesn't deter him as helpers wheel in the model. It's a desert cooler with a chamber at the bottom, which opens out like a drawer. A metal drum inside it is a jumble of coils and pipes with two tullu pumps sitting at the bottom of it all. But the crudeness of the model is nothing to go by. Half the drum is filled with water, and a mesh of PVC pipes is placed over it. Blocks of ice are loaded on top of the mesh. It functions simply. "This is what happens in the Himalayas. River and seawater evaporate and rise up to form clouds. When clouds hit mountains, water turns into snow and flows back down into the rivers," explains Lal, who calls the device "a green Gandhian air conditioner."

"The greatest achievement is that it has given the world a new source of energy called ice energy. One has to spend a lot to tap solar or wind energy, but a person can use ice energy sitting at home. It is also a hot topic of research abroad," says Lal, gingerly typing on his iPad, and going to his webpage to testify.