

IAEA / DG 近く選任
予定のエル・バラダイ氏
2011年のエジプトの大
統領選に立候補する
かもしれない 因

UNITED NATIONS

ElBaradei will not rule out presidential run in Egypt

Mohamed ElBaradei, a Nobel Peace Prize laureate and outgoing head of the U.N. nuclear watchdog, said in a television interview that he would not rule out running for the presidency of his native Egypt.

Mr. ElBaradei said in a CNN interview that one should "never say never," but made clear that there would have to be "built-in guarantees" that the election, which is scheduled for 2011, would be run properly before he would agree to run. The 67-year-old Egyptian diplomat and lawyer steps down at the end of November as director-general of the International Atomic Energy Agency, a high-profile U.N. agency based in Vienna that he has headed for 12 years.

Mr. ElBaradei and the I.A.E.A. were joint recipients of the Nobel Peace Prize in 2005 for their efforts to prevent nuclear proliferation and to promote the safe use of nuclear energy. (REUTERS)

International Herald Tribune

THURSDAY, NOVEMBER 5, 2009 1

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Israeli companies offer some novel solutions

TEL AVIV

Export opportunity seen for water-loss prevention tools as scarcity increases

BY ARI RABINOVITZ
REUTERS

Outside a small town near Tel Aviv, a small pilotless aircraft collects data from hundreds of gauges.

A single technician with a laptop monitors the flight from the ground and receives an instant picture of the town's system, including, he says, a house with a leaky toilet.

That may seem minor, but this plane that reads water meters — as well as a tiny turbine that can generate electricity from within water pipes — is among the technologies Israeli companies are developing to help save billions of dollars in water lost from leaky pipes.

The systems are part of a drive for export orders as rising populations and growing urbanization increase demand for fresh water, and experts say pipe leakage is one of the biggest problems facing the global water supply today.

A World Bank study in 2006 found that water lost in the system before it reached the customer — known as "nonrevenue water" — costs utilities at

least \$14 billion worldwide every year, largely from leaky pipes and poor maintenance.

Most of the loss is in developing countries: 12 billion gallons, or 45 million cubic meters, of water are lost daily, enough to serve nearly 200 million people, the study said.

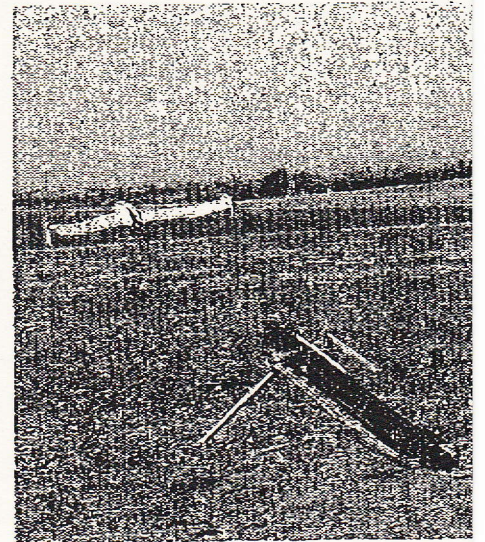
The problem is also endemic in large developed countries. For example, the Environmental Protection Agency estimates losses from the U.S. water distribution system cost the country \$2.6 billion a year.

"Israel is one of the leading countries in initiative ideas to reduce nonrevenue water and losses," said Stuart Hamilton, a task force member of the International Water Association. His group measures performance at the world's utilities.

Israel is two-thirds desert, and water concerns affect decision-making at the highest levels. For decades, companies here have developed water technologies more for domestic use than for foreign markets.

But seeing an opportunity to penetrate markets abroad, it set a goal of exporting \$2.5 billion annually in water technology by 2011, said the Ministry of Industry and Trade.

Several companies globally offer complete leak-detection services, from telephone hot lines to teams that walk the street at night with acoustic leakage



Hundreds of water gauges are read from above, by Group's leak-detection system. A single technician

detection devices, said Philippe Marin, the World Bank's senior water and sanitation specialist. Companies like Suez Environnement and Veolia Environnement, both based in France, run through such routines when taking over utilities.

Companies do not always need to replace large tracts of piping if they can

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- テルアビブ（イスラエル）の郊外で、無人の飛行機が、給水管の漏水箇所を検出している。
- 世界銀行によると、配水途中での漏水により毎年14B\$/年（1300億円/年）の損失がある。
- これは主に途上国で起きていて $4.5 \times 10^6 \text{ m}^3$ の水が毎日失われている。ほぼ2億人の使用量に相当する。
- 米国ではこの損失は2.6B\$/年（2300億円/年）と環境局は見ている。
- イスラエルは国土の2/3が砂漠で給水は国の大きな課題である。
- イスラエルは水道関係の輸出目標を2011年に2.5B\$（～2300億円）としている。
- 漏洩検出器は、例えばフランスのSuez Environment社とVeolia Environment社から提供されている。
- 古くは、人が検出していたが、発見—通報—修理に時間を要するので、車載の検出をするようになり、今回さらに進んで小型無人飛行機を使うことになった。なお、水道管の接続部分には、水量を発信するようになっている。
- この飛行機は約1kgで、1.6kmの距離からの信号を受信できる。
- このシステムはイスラエルのArad Groupが開発した。
- 飛行機による検出装置は、3台の飛行機、ソフトウエアも含んで10⁵\$（～900万円、テキサス州での価格）
- （森：水流を利用するパイプ内水力発電の記事も入っているが、割愛した。この記事は、商業のページにあるので、水道事業の商売に着目している。）

utions to a world with leaky pipes



by way of a drone aircraft, in the Arad n monitors the flight with a laptop.

point leaks, said Dewi Rogers, who is Dewi, an Italian water-loss management consulting firm. One key to detecting and then plugging leaks is getting real-time data from meter meters in the field. For years, monitoring was done by a person stopping by each meter and jotting down the information. This can take months.

Many meters are now equipped with transmitters, and a car driving in the vicinity can receive the data. But hours pass between the readings, so the information is not accurate.

The fly-by system that spotted the leaky toilet near Tel Aviv was developed by Arad Group, a listed company majority-owned by two kibbutzim, Israeli agricultural communes, with an interest in water conservation for crops.

Its drone weighs about 1 kilogram, or 2.2 pounds, and flies on autopilot, receiving signals from as much as 1.6 kilometers, or a mile, away.

The company has market capitalization of 300 million shekels, or \$80 million, sold more than \$100 million worth of water meters last year and has just contracted to supply meters to Mumbai by 2012.

It competes in the automatic meter-reading market with the American companies Badger Meter, Itron and Neptune, a business of Roper Industries.

The fly-by system, including three drones and software, costs about \$100,000 and is being shipped to Mansfield, Texas, later this month, said Dan Winter, chief executive of Arad Technologies, a subsidiary of Arad Group.

The in-pipe hydroelectric turbine — developed by Leviathan Energy, a three-year old Israeli start-up with about \$2 million in private equity fund-

ing — works like a tiny water wheel to generate power and reduce leakage by regulating water pressure within pipes.

The Israeli national water company, Mekorot, installed a test system at a station in a forest outside Jerusalem.

Far from the energy grid, the station controlling the water tower that supplies the village of Neve Shalom was until recently powered by solar panels. Now, the water that flows through the 10-centimeter, or 4-inch, pipes drives the turbine to provide the 1 kilowatt of electricity needed to maintain operations.

Mr. Hamilton of the International Water Association said such in-pipe turbines would be “absolutely beneficial to the water industries,” and Gideon Alkan, an engineer at Mekorot, said the turbine could power off-grid locations as well as sell electricity to the grid.

But Mr. Hamilton said the turbines had yet to be introduced to the market because companies in the past were unable to successfully store the electricity generated, and Mr. Alkan said Mekorot has not yet decided whether to install the Leviathan turbine in other stations.

Leviathan has yet to mass-manufacture its turbine, but its chief operating officer, Gadi Hareli, said it had received its first order for a few units to be installed in Africa through a European company, with a letter of intent to buy 200 more.