The Obsolescence of Investments in Desalination: Consequences and Solutions

Constant progress led desalination from basic evaporation to MSF, MED and RO. Being still costly and polluting, the further evolution step leads to MUDT

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PARIS, FRANCE, January 29, 2024 /EINPresswire.com/ -- History of the Obsolescence of Desalination Technologies

The history of desalination technologies is a saga of constant progress marked by innovations and challenges. From the early desalination units in the early 20th century, which used crude evaporation methods, to the advent of more sophisticated technologies like MSF (Multi-Stage Flash Distillation) and MED (Multi-Effect Distillation), each step represented a significant advance. However, it is reverse osmosis (RO) and its variants that have dominated the modern desalination landscape, offering increased efficiency at a lower cost. Despite this, reverse osmosis, while less costly than previous techniques, has major drawbacks, particularly in terms of environmental impact and the prohibitive cost of water, except for subsidized applications and high-value activities.

Inadequacy of Current Methods

Investing in desalination has long been considered a smart move for governments and businesses looking to secure a reliable water source However, seawater desalination, the only inexhaustible and available source of water, cannot be achieved by the RO method to meet fundamental human needs, which are obtaining desalinated water at low cost and through non-polluting processes. For example, in agriculture, it is estimated that to feed a growing global population, agricultural production must increase by 60% by 2050. This increase must be achieved despite climate and environmental challenges, underscoring the urgency for innovative and sustainable solutions. All players in desalination who can afford it have R&D programs to find acceptable desalination solutions. But a question remains: how many years will it take to

succeed, if ever they do, and at what cost? See Assessing the Viability of R&D Projects: A Critical Analysis of Desalination Investments (reference 1)

The Invention of MUDT

As traditional freshwater sources are strained, droughts advance, and the effects of climate change intensify, Scientechnix, a research and development company led by Professor Alain ElayiI, has developed a desalination technology that overcomes the obstacles of existing desalination methods.

Over a decade of rigorous scientific research and development, Scientechnix has achieved a revolutionary feat: it has developed a desalination technology that not only addresses the global water shortage but does so at a cost low enough to revolutionize agricultural irrigation. This is not just a gradual improvement, but a paradigm shifts in sustainably managing water resources, particularly for food production in the context of global food security.

In a recent article, Scientechnix demonstrated that in agriculture, the lowest existing cost of desalinated water is more expensive than the price of the crop (see reference 2). In another article (see reference 3), Scientechnix provides the significant example of a desalination installation of 10,000 m^3 of water per day, which would produce wheat for the annual consumption of 40,000 people over the 50-year lifespan of the desalination installation, with water costs compatible with wheat production prices. These figures are based on irrigation methods recommended by the United Nations Food and Agriculture Organization (FAO) (see reference 4).

Scientechnix is particularly concerned about people who suffer from hunger every day. It hopes that they will also fully benefit from this desalination technology used in agriculture.

A Revealing Example of the Obsolescence of Current Desalination Techniques

Take, for example, one of the latest desalination projects underway, announced as having the lowest OPEX (Operating Expenses) for desalination at $0.3675 per m^3. This very low price was achieved because it benefits from low-cost renewable energy, a 35-year long-term agreement, and an economy of scale of 800,000 m^3/day. For smaller installations, this cost can be multiplied by five or even more. A quick calculation shows that the annual cost of this water is $107 million, or about $3.7 billion over 35 years. The cost of producing desalinated water makes desalination ultimately very expensive. In addition, the environmental cost is extremely high: 800,000 m^3 of brine discharged into the environment every day. The comparison of this desalination technology, albeit the cheapest, with MUDT technology is stark: it does not pollute, and the cost of producing the same amount of desalinated water would go from billions of dollars to millions of dollars. Global organizations like those dependent on the UN, the World Bank, the European Bank, etc., all urgently demand such a method of desalination. Should we recall the UN resolutions of 2010 and 2012 on human rights to water? (see reference 5) Scientechnix has

achieved the feat of inventing this desalination method to solve this problem. It is high time to collaborate with it for the good of all.

New Warning on Obsolete Investments

In 1990, Professor Alain Elayi, a desalination specialist and primarily a nuclear physicist, published an article on Nuclear Transmutation. The history of nuclear transmutation, as discussed by Professor Alain Elayi in 1990, offers a lesson on the consequences of neglecting scientific warnings. Elayi had proven that the transmutation of radioactive waste, although technically feasible, would face insurmountable economic obstacles with the technologies of the time. Despite this warning, billions were invested in research and development in this field, ultimately leading to the conclusions published by Professor Elayi, but after paying a financial cost amounting to billions of dollars (see reference 1). This historical scenario finds a worrying echo in the current field of desalination. Today, similar warnings are being issued about the economic costs and environmental impacts of desalination plants. These warnings suggest that desalination plants could become obsolete even before their completion, incurring massive losses in expenditure. The parallel between these two situations is striking: in both cases, fundamental problems with the technological approaches adopted were identified. Ignoring these warnings in the field of desalination could lead to a repetition of history, where the economic and environmental costs could far outweigh the anticipated benefits. This perspective underscores the crucial importance of heeding scientific warnings to avoid costly mistakes. In this case, these warnings suggest that desalination plants could become obsolete even before they are completed, leading to massive wasteful spending.

Reference 1 Assessing the Viability of R&D Projects: A Critical Analysis of Desalination Investments:
https://business.einnews.com/pr_news/671510328/assessing-the-viability-of-r-d-projects-a-critical-analysis-of-desalination-investments

Reference 2 Desalination for Agriculture Finally Possible
https://www.worldagriculturetimes.com/article/674631902-desalination-for-agriculture-finally-possible

Reference 3 Revolutionary Desalination Technology: a New Era for Agriculture and Global Food Security
https://agriculture.einnews.com/pr_news/681244227/revolutionary-desalination-technology-a-new-era-for-agriculture-and-global-foodssecurity

Reference 4 United Nations Food and Agriculture Organization (FAO)
https://www.fao.org/documents/card/fr/c/b69ecc4f-91ca-4d6e-b2d0-c7990e9502a1

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