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Safe Drinking Water with AGC's Ion Exchange Membrane

The AGC logo is displayed in a white box on the right side of the slide. It consists of the letters 'AGC' in a bold, blue, sans-serif font. The letter 'G' has a small red square on its top right corner.

AGC Inc.

December 8th, 2023

Your Dreams, Our Challenge

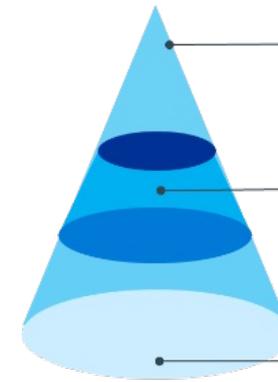
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About AGC

AGC's products



AGC Group Vision "Look Beyond"



Our Mission

AGC, an everyday essential part of our world
AGC's unique materials and solutions make people's lives better around the world every day.

Our Shared Values

- ◆ Innovation & Operational Excellence
- ◆ Diversity
- ◆ Environment
- ◆ Integrity

Our Spirit

Never take the easy way out, but confront difficulties.

Five Social Values AGC Creates



Urban Water Scarcity

- About 20% of the increase in global water scarcity this century is expected to be due to global warming

Fig. 1: Current urban water scarcity.

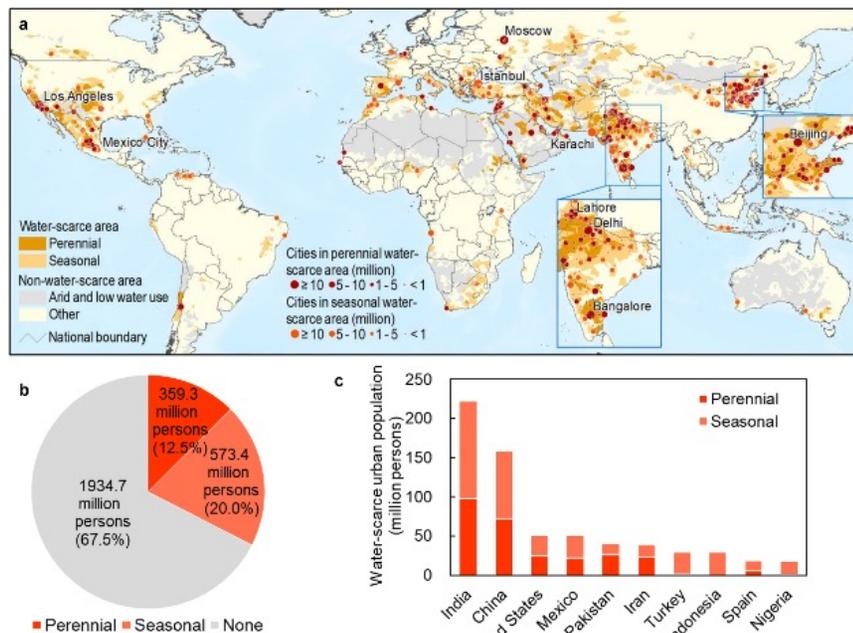
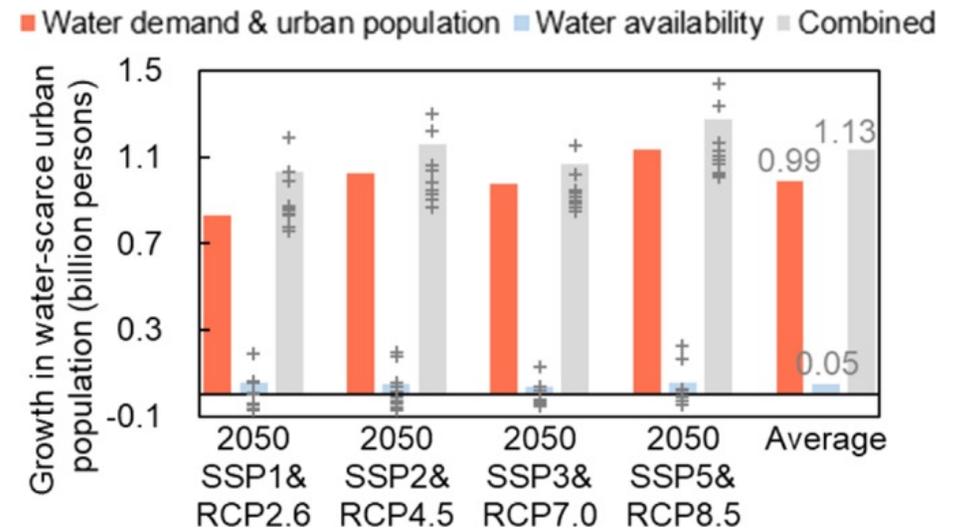


Fig. 2: The effects of different factors on growth in global urban population exposed to water scarcity from 2016 to 2050.



[Future global urban water scarcity and potential solutions | Nature Communications](#)

Electrodialysis purification system using AGC's ion exchange membranes **AGC** Your Dreams, Our Challenge

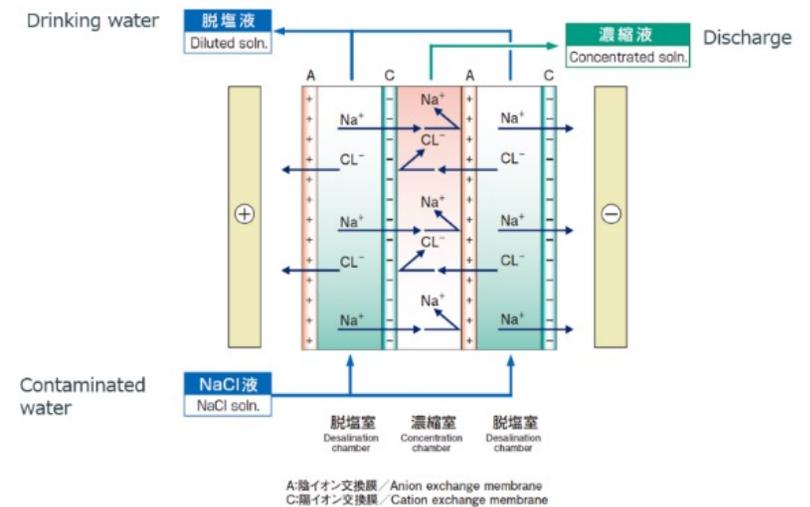
- Purification of groundwater contaminated with nitrates, etc., for use as irrigation and drinking water
- High water collection ratio and low power consumption by eliminating the high-pressure pump

Ion exchange membrane - AGC's product



Example of electrodesaliner

Cross section of electrodesalination tank



Commercialization Project with JICA

- SELEMION-equipped water purification selected as JICA project
- SDGs also to be contributed through generating purified water



Water purification system manufactured by partner company



People filling bottles with purified water from the demonstration plant

SDGs to be contributed



Comparison

- Solar can be used to power the equipment with SELEMION - can be used in countries/regions where grid power is lacking or unstable.

	Initial Cost	Running Cost	Power/ Voltage	Water Collection %	other
RO	Low	Relatively low	High	Low	Can handle large volumes
Evaporation	Low	High	High	Relatively high	Complex operation
Ion Exchange (Resin)	Low	Relatively low	High	Low (unknown)	High chemicals and effluent Easy operation Require space
Ion Exchange (ED) SELEMION	High	Relatively low	Relatively low	High	Adjustable desalination

Challenges on Commercialization

- ✓ **Adaptation as new technologies**
- ✓ **Appeal through policy**
- ✓ **Provide financial support to relevant stakeholders**
- ✓ **Promote using international funds**
- ✓ **Reduce equipment manufacturing costs**

Various AGC's Technologies

Adaptation

- Fluorine film for agriculture - with high durability and high light transmission
- IR- and UV-cut automotive glass
- Improved comfort and health conscious through disaster-resistant and energy-saving glass

Mitigation

- Energy-saving glass, retrofit energy-saving glass, BIPV
- Ion-exchange membranes
- Low GWP refrigerants
- CFC destruction technology
- Energy-saving glass melting technology, etc.

BIPV in Dulwich University,
Singapore



AGC Group's Brand Statement

Never take the easy way out, but confront difficulties
Trust is the best way to inspire people
Strive to develop technologies that will change the world
A sense of mission leads us to advance

For more than a century, AGC has been guided by these founding spirits. Our unique materials, solutions and reliable partnerships have facilitated leading innovations across diverse industries and markets.

Today, by working with others to combine knowledge and advanced technology, we help make ever greater achievements possible, and bring bolder ideas to life

Your Dreams, Our Challenge

The background of the slide features a silhouette of two people climbing a rocky mountain peak. One climber is higher up, pulling a rope for the second climber who is lower down. The scene is set against a sunset sky with warm orange and yellow tones near the horizon, transitioning to a darker blue at the top. The overall mood is one of challenge and achievement.