Air Content in Glacial Ice: Implications for Renewable Energy Storage

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How Glacial Ice Forms and Traps Air

When snow accumulates over centuries, it undergoes firnification - a process where individual snowflakes collapse into dense ice crystals. During this transformation, air becomes trapped in microscopic bubbles, creating a frozen record of Earth's atmosphere. But here's the kicker: solid glacial ice typically contains 5-15% air by volume, depending on its age and formation conditions.

Wait, no - let's clarify that. The air content actually decreases as ice becomes more compressed. For instance, 300,000-year-old ice from Antarctica's EPICA project shows air volumes below 8%, while younger glacial ice (

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