



ThermBank

Turning Waste into Warmth

Patent Pending, 2025 | Engineered in Canada

North America landfills over **10 million tonnes of asphalt shingles annually**—a vast, untapped resource with high thermal mass. Meanwhile, municipalities, industry and northern and off-grid communities continue to rely on **carbon-intensive, high-cost heating systems**.

TrueNorth ThermBank is a **scalable, modular thermal energy storage system** that repurposes recycled asphalt shingles (RAS) to **store and release heat silently, cleanly, and affordably**. Inspired by proven thermal mass systems already in use around the world—such as sand batteries—it applies these time-tested principles using recycled materials to enhance performance and circular impact. Acting as a “thermal battery,” it captures solar or waste heat in summer and releases it passively through winter—supporting **heating, snow melt, and energy resilience** at **both small and district scales**.

Key Features

- **Circular Economy Impact:** Diverts landfill-bound RAS to displace fossil heating
 - **Thermal Mass Storage:** Captures solar or waste heat; with long heat retention
 - **Modular & Scalable:** Configurable for greenhouses, homes, patios, buildings, or district systems
 - **Sensor-Ready:** Supports monitoring for optimization and safety
 - **Compatible:** Works with glycol loops, radiant floors, district heating, and off-grid solar thermal
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Who It Serves

- **Homeowners:** home heating, snow melt driveways, aging-in-place retrofits
 - **Schools & Hospitals:** Safe, quiet walkways & entrances; hands-on STEM applications, energy offsets or replacement
 - **Municipalities:** Low-maintenance snow melt, frost protection, and GHG reduction, district heat opportunities
 - **Industry & Utilities:** Waste heat capture, load shifting, and district-scale storage
 - **Northern & Remote Communities:** Affordable, clean, off-grid seasonal heating
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Development Status

- Benchtop prototype complete (TRL 3–4)
- US Provisional Patent Filed
- Field-scale pilot in design phase, including a modular solar lab and snow melt pad. A **partnership with STEM Collegiate** is being explored to develop an educational program around the technology, with the potential to host the next pilot system on campus to contribute heat to the school.
- IRAP + Alberta Innovates funding applications in progress
- Outreach to partners: schools, recyclers, municipalities, energy & agri-tech sectors



Why It Matters

- **Carbon-Negative Potential:** Offsets fossil fuels, sequesters waste, displaces mined materials
- **Food & Energy Security:** Extends growing seasons, lowers heating costs, supports resilience
- **Economic Opportunity:** Scalable, manufacturable solution for green jobs and infrastructure



Connect with Us

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🔗 *Technical brief, schematic, and pitch deck available upon request*