BMT

Clarity from complexity

Services and solutions

Clean Energy Solutions

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Introduction

BMT is committed to supporting sustainable renewable energy initiatives to ensure a cleaner future for Canada's microgrid energy infrastructure.

Whether you are planning a short-term site installation or a permanent large-scale operation, we have the capability to design and support the delivery of flexible and cost-saving power solutions.

Our team provides expert solutions in all stages of microgrid design and equipment integration using commercially available equipment. BMT can blend wind, solar, and tidal energy solutions with diesel generators and battery energy storage systems tailored to your unique power generation and distribution needs.

Our robust microgrid designs prioritize the use of green energy sources, focusing on reducing your diesel fuel consumption and CO2 production while providing you with stable and reliable power.

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Our passion/ philosophy:

We are committed to advancing renewable energy research. We are actively collaborating with Canadian universities and research establishments to design, develop, build and test new technologies.

This includes:

- Help our customers find innovative solutions to their unique challenges
- Partner with clients, listen and support their success from start to finish
- Be a single source of expertise throughout the entire project life cycle including climate risk assessments, customized designs, full scale deployment and in-service support

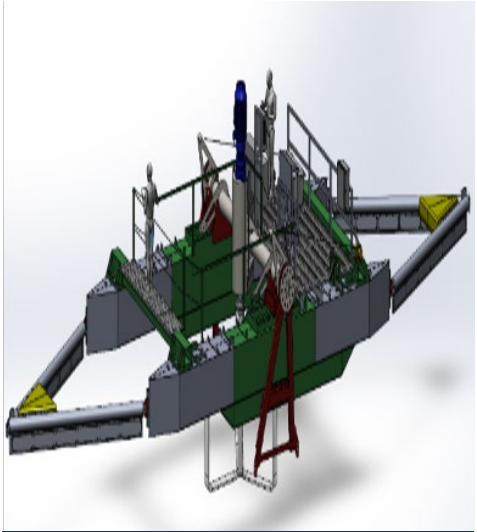

Photo credit: University of Victoria

Photo credit: Sustainable Marine

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Design solutions for your challenges

De-carbonization strategy

It is difficult to address de-carbonization objectives.

BMT can identify the best suited combinations of renewable energy resources for your application and determine what each combination delivers in terms of energy savings, capital and operational costs and emissions reduction. Sources can include solar, wind, tidal, biomass, etc.

Energy storage

Each green energy generator has intermittent gaps in power generation.

BMT can design and integrate battery energy systems to store excess energy generated by the intermittent and non-dispatchable renewable energy sources for utilization during gap periods.

Microgrid optimization

Energy management and control can be challenging.

BMT uses a combination of our advanced algorithm and real time data analytics to coordinate local power generation, energy storage and existing control systems to meet demand in real time.

Power generation system integration

Equipment control systems from different manufacturers often lack interoperability, making integration, within a single microgrid, complex and challenging.

BMT has a microgrid solution that is universally adaptable to equipment from any manufacturer.

MIU for tech testing in microgrid systems

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Service solutions for decarbonization and reducing diesel reliance

BMT service solutions include:

- Energy analysis
- Power system studies
- Environmental considerations
- Grant funding applications and carbon mitigation studies
- Front End Engineering Design (FEED) studies
- Ongoing analysis for diesel use reduction
- Energy infrastructure design
- Microgrid / smart grid
- Battery energy storage systems
- Supporting the development, integration, and deployment of renewable energy technologies, including ocean wave generators, tidal turbines, and associated equipment to displace diesel.

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Our services and products

We have developed a universal microgrid interface unit, which can integrate multiple green power generation sources from any manufacturer.

This smart grid energy management system coordinates multiple energy sources within a microgrid. The product is comprised of a universal controller and switchboard built using certified commercial parts for cost effectiveness and ease of maintenance. Fully configurable to meet your unique power needs, the MIU empowers you to optimize energy management, enhance resilience, and achieve sustainability goals with unparalleled flexibility.

MIU features

Autonomous control

Our MIU seamlessly integrates with any equipment to provide autonomous and safe control of your system's power sources, all without any oversight.

Our MIU is powered by our state-of–the-art control algorithm which focuses on delivering power from clean energy sources, reducing diesel fuel consumption, providing grid stability, and ensuring safe operation of all equipment.

Flexibility with standards

Do you prefer certain equipment? No problem.

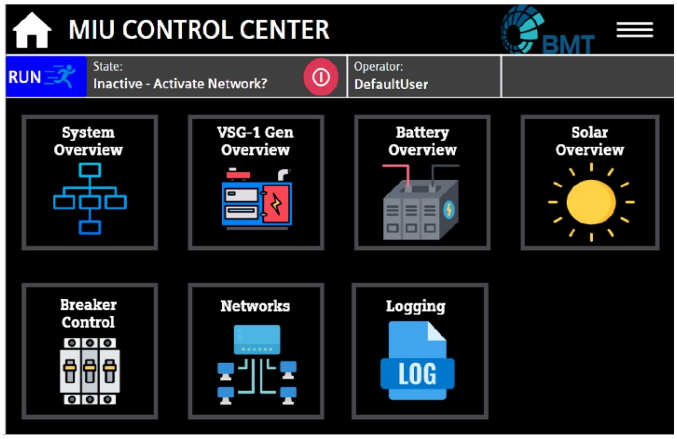
Our MIU can easily integrate with any system using equipment from brands you know and trust. Our MIU is designed to provide you with options and flexibility to your system for changes in the future, big or small.

Data logging

Any information you find important, we can log it.

Any equipment you have on site and its data is capable of being logged by the MIU, cyclically, on demand, or by trigger. Whether it be how much energy your solar panels are absorbing or looking into an issue, our data logging can show you exactly what is going on.

BMT maintains its proprietary data hosting and management software, BMT DEEP. This application allows owners and operators direct insights into asset monitoring, power and environmental data to best manage their portfolios.



User friendly interface

Total user control anywhere, anytime, securely

Each MIU is mounted with a user- friendly human-machine interface (HMI) that allows total control of the system. Customizable and unique for each system, we can provide you with the vital information you need to know.

Need some downtime on a particular system? You are able to control various capabilities of the MIU such as the autonomous algorithm program, breaker control, data logging, and many others. Even if you are unable to be present at site, the MIU HMI and its controls are reachable and controllable remotely and securely via VPN connection, so you can have total control and monitoring capabilities from anywhere.


SUSTAINABLE
MARINE ENERGY

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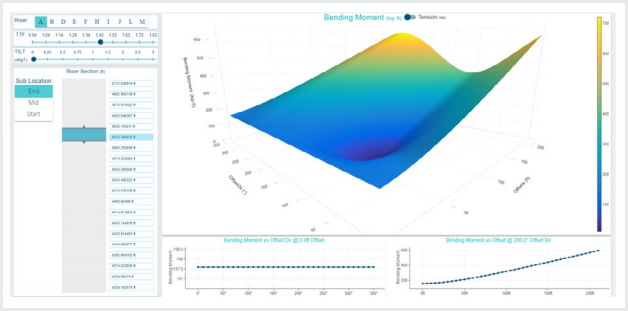
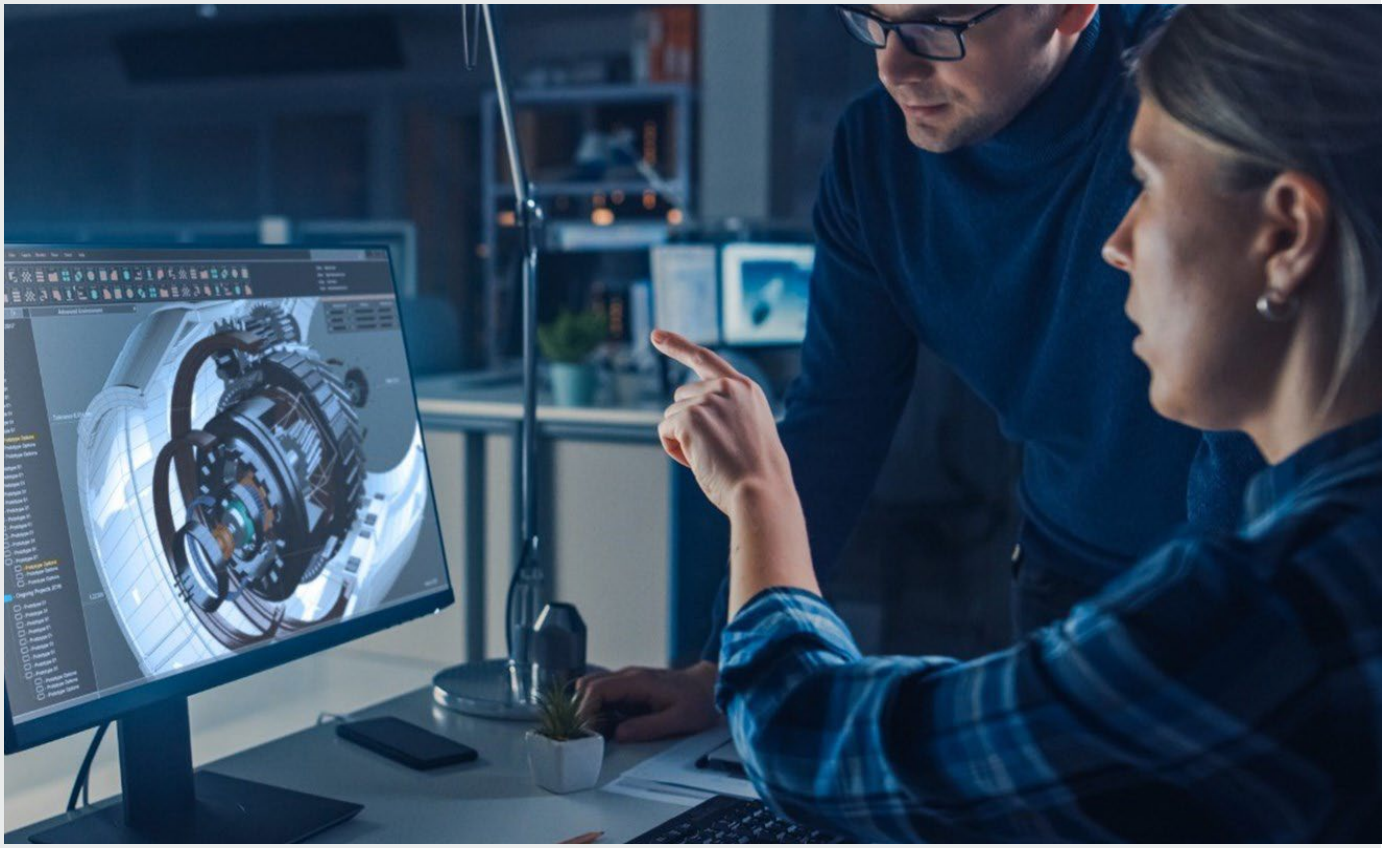
DEEP: Data-Enhanced Engineering Performance

Thanks to our fusion of data science, engineering intelligence, and infrastructure expertise, DEEP transforms complex sensor networks into actionable insight engines. Our tailored approach moves from raw signal acquisition through advanced analytics to real-time operational intelligence, enhancing decision-making and asset assurance.

Our integrated platform provides predictive intelligence and performance visibility across the entire life cycle of critical marine and offshore assets. Whether planning maintenance, mitigating risk, or extending service life, DEEP enables engineering teams to move from reactive operations to proactive control.





- **Actionable Engineering Intelligence**

  Advanced signal processing and engineering modelling translate sensor inputs into high-value, evidence-based insights.

- **Unified Data Ecosystem**

  Aggregates data from environmental, structural, and operational sources into one secure, cloud-enabled interface.

- **Predictive Maintenance and Life Extension**

  Leverages machine learning and probabilistic models to detect anomalies, enabling risk-based inspections and asset life planning.

- **Critical Infrastructure Ready**

  Built for offshore platforms, naval vessels, and marine systems with customizable KPIs and embedded engineering logic.

- **Operational Flexibility**

  Web-based access supports secure, role-based permissions for onshore and offshore operations.

- **Robust Data Transmission**

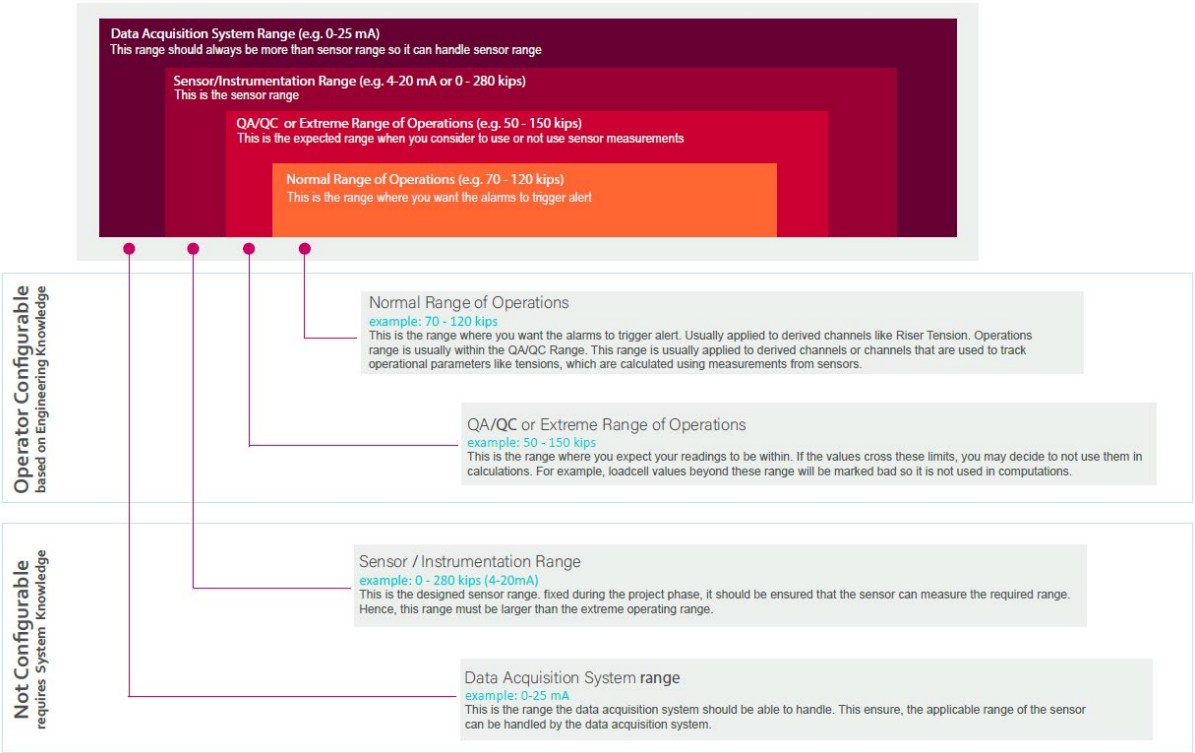
  Resilient communications using satellite, mesh, and cellular networks ensure continuity in remote environments.

- **Edge-to-Cloud Data Handling**

  Local filtering and preprocessing minimize bandwidth use; only key data is transmitted and archived for analysis.

- **Cyber secure and Scalable**

  End-to-end encryption with ISO 27001/NIST compliance, and flexible deployment from single sensors to full fleets.



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Climate risk assessment

Thanks to our fusion of climate, infrastructure and ice engineering expertise, we can provide risk analyses through a tailored risk assessment process from general awareness to a thorough technical understanding of exposure and risk.

Our analysis provides likelihood data for future climate hazards and quantifies their impacts on infrastructure, assets, operations and supply networks. We provide reliable, accurate mapping of current and future hazards across key climate issues such as drought, erosion, sea-level rise, temperature fluctuations and permafrost. We can help you represent climate risks through numerical modelling and GIS mapping outputs.

The full suite of our climate risk and resilience services includes:

- Climate science awareness training
- Downscaling and local summaries of climate science data sets and trends
- Greenhouse gas audits and accounting
- Decarbonization strategy
- Physical climate change vulnerability and risk assessments
- Detailed hazard modelling and mapping
- Climate reporting disclosures reporting
- Resilience and adaptation planning, including:
  - Strategic/master planning
  - Development assessment
  - Asset management
- Climate change environmental assessments

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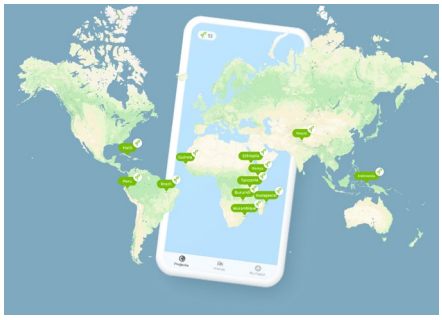

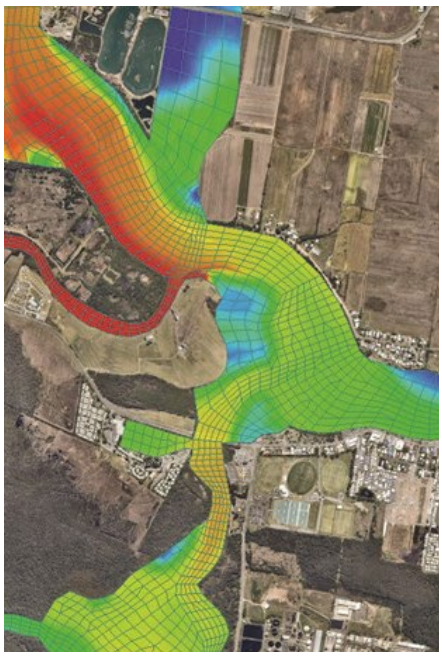

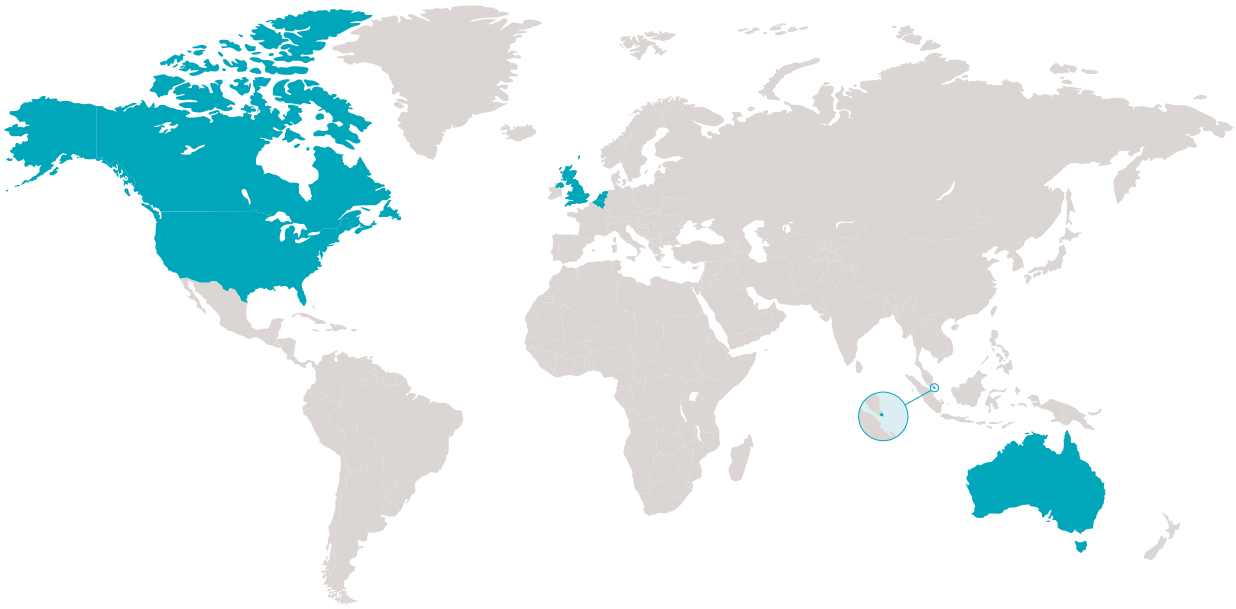

BMT exists to apply the best minds to some of the world's toughest problems.

How can we help you to navigate complexity and build a brighter future?

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