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CanmetMINING **Integrated Business Plan & EMMC 2020**

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CanmetMINING's Integrated Business Plan

- Communicates our vision, priorities and the resources required to achieve them •
- Outlines the restructuring of the Branch and HR plan to better position the organization to • respond to the evolving needs and challenges associated with mineral resource development in Canada
- Includes: ٠

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- Mandate and vision
- Strategic context;
- Partnerships & collaboration;
 - including new outreach strategy;

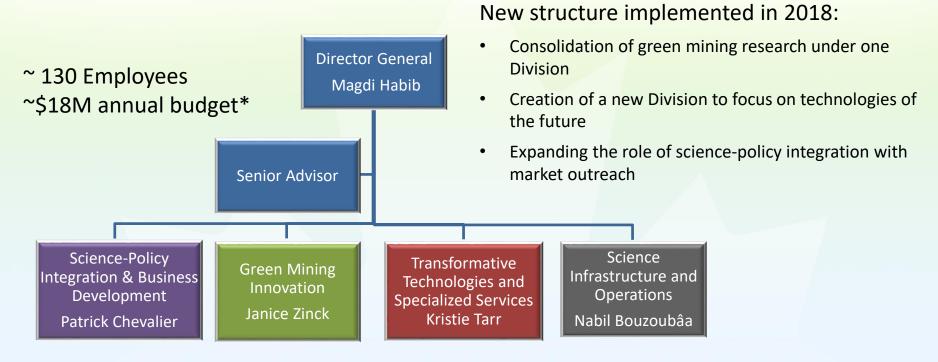
- Research plan update and new GMI logic model
- Operating environment and plans: -HR
 - -facilities and equipment
 - -financial assets

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Positioning for the Future: New Organizational Structure



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*budget including VNR and temporary funds



Our Vision, Mission and Mandate

- **Vision:** CanmetMINING is a trusted R&D organization and recognized as a global leader in Green Mining Innovation and the applications of digital technologies
- **Mission:** To drive Green Mining Innovation and application of ٠ digital technologies to generate economic and environmental benefits for the mining industry
- Mandate: To work collaboratively with mining stakeholders and ٠ other industries to de-risk and optimize technologies and generate science based knowledge to increase adoption of green mining technologies and inform regulations for sound decision making



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The Strategic Context of Our Work

- Industry needs to adopt new technologies to transform Canada's resource potential into useful products in a cost-effective and environmentally friendly manner
- Government needs to ensure Canadian resource sector remains a source of jobs, prosperity and opportunity that does not create environmental liabilities
- Global economy moving to a greener future
 - Shift towards low carbon economy, clean technology, more sustainable practices
 - Important for competitiveness and social license to operate

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Science Policy Integration

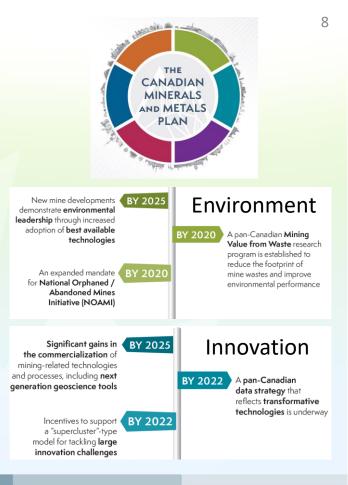
- The CanmetMINING research agenda is driven by the need to address industry needs in alignment with Government of Canada priorities and a contribution to public good
- CanmetMINING is working in several areas identified as priorities under the Canadian Minerals and Metals Plan
 - Environment footprint reduction, action on mine waste, rehabilitation and closure, climate change adaptation, renewed NOAMI
 - Innovation de-risking new technologies, adapting to meet new frontiers and new technology challenges
- Leading discussions on policy options related to clean technologies and their adoption by industry

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Energy & Mines Ministers

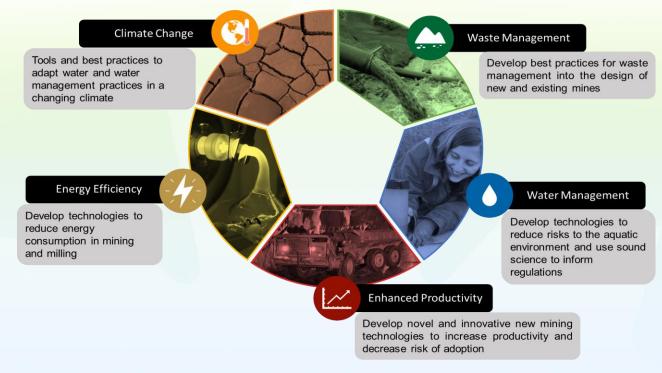
- Deliverables for 2020 (July 26-28 in Whitehorse) •
 - Continued emphasis on competitiveness innovation and sustainability
 - Green Mining Innovation
 - Expand the Science and Engineering Laboratories Network
 - Continue to work and leverage funding for the Mining Value from Waste Program
 - Mine reclamation and abandoned mines (CMMP):
 - Task force led by NRCan to explore national mine reclamation standard
 - Renewal of the National Orphaned-Abandoned Mines Initiative.

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CanmetMINING: The Five Priorities



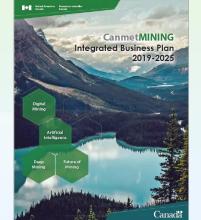
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R&D Results and Expected Outcomes

- The plan provides an update at the mid-point of CanmetMINING's five year research agenda:
 - Four research priorities expanded to five to better reflect full range of work: 0
 - Energy efficiency; Enhanced productivity; Waste management; Water management; Climate 0 change NEW
 - Communicates the achievements to date under each priority 0
 - Communicates expected achievements by March 2021 0
 - Reflects new work started by the transformative technologies group Ο
- The plan also provides the updated Green Mining Innovation logic model
 - Overarching framework to explain the short-, medium-, and long-term outcomes CanmetMINING aims to achieve
 - Addresses future business needs beyond current research plan to 2025 ٠
 - Addresses funding, demographics, infrastructure, equipment and new skills needed ٠



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Moving Forward

HR Planning and IM/IT & Capital Investment

pesearch Plan

Designed to ensure research can continue with the right people with the right skill sets needed for future priorities and programming Strengthen capacity in the fields of engineering, data analytics and related transformational technologies. Renewed investment in training and learning - 5% of budget Improved data management and flexible IT structure HR Plan, IM/IT & Capita Capital plan to maintain and replace equipment and identify new needs

New 5-vear Research Plan

Emphasis on key priorities and alignment with transformation in the industry and new programming as well as the goals and milestones of the Canadian Minerals Metals Plan Seek opportunities to expand strategic partnerships to leverage capacity with others

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Terra-Canada implementation New R&D cluster in NCR, partnerships in Sudbury & Val d'Or providing transdisciplinary R&D&I for sustainable resource development **New Programming for New** Terra-Canada Frontiers Research

Renewed investment in mining innovation through a combination of A-base and C-base funding to address key priorities: i) Technology adoption ii) Battery/critical minerals Mining value from waste iii) iv) Digital mining v) Mining certification vi) Deep and in-situ Mining vii) Hydrogen in mining viii) Renewal of REE Program

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Renewed CanmetMINING Green Mining Innovation Agenda

2025

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New Frontiers



Questions