



GMG



**SUSTAINABILITY
WORKING GROUP MEETING**
June 12, 2023

AGENDA

- ▶ Welcome
- ▶ Safety Share
- ▶ GMG Working Groups - Structure and Processes Review
- ▶ Sustainability Working Group Overview
- ▶ Project Update
 - Guideline Suite for Operationalizing Net Zero: Holistic Energy Management Across the Site
- ▶ GMG Projects – Structure and Processes Review
- ▶ Nature’s Role in Advancing Mosaic’s Decarbonization Goals
Natali Archibee, Director, Corporate Communications, The Mosaic Company

ANTITRUST COMPLIANCE



DO's



- Prepare and circulate written agendas for all GMG Annual, Board, and committee meetings, and any other meetings that may entail roundtable discussions among competitors. Conduct all such meetings pursuant to the previously prepared written agendas, and prepare clear, concise, accurate, and unambiguous written minutes of each such meeting.
- Avoid all loose, facetious, or careless remarks, especially those in writing, that could be misconstrued as posing antitrust problems if read out of context.
- Review all matters of potential antitrust sensitivity with the GMG CEO or other designated staff person. Such matters would include, for example, any proposed discussion of prices, limitation or allocation of production, division or allocation of markets or customers, and boycotts or refusals to deal with prospective customers. When in doubt or when otherwise appropriate, GMG staff will review such matters with legal counsel.



DO NOT's



- Engage in any discussions with or among any competitors, regarding prices, costs, sales, margins, plans, schedules, bids, transportation rates, terms of sale, or any marketing or competitive information that could affect pricing.
- Engage in any discussions with or among competitors which relate to customers, sales territories, production, capacity, amount of reserves, output, or any other information relating to production or output.
- Exchange or discuss any other confidential statistical or financial information of any company.
- Discuss the advantages, desirability, or possibility of eliminating or impairing any competition, whether existing or potential, foreign or domestic.
- Assume that foreign sales or production are not subject to your country's antitrust laws.
- Guess. When in doubt, get help-consult with GMG staff / representative and legal counsel.



BE FRIENDLY AND PATIENT

BE RESPECTFUL

**WHEN WE DISAGREE, TRY
TO UNDERSTAND WHY**

**BE CAREFUL IN THE
WORDS THAT YOU
CHOOSE**



CODE OF CONDUCT

BE WELCOMING

BE CONSIDERATE

**A SIMPLE APOLOGY CAN
GO A LONG WAY**

**MODERATE YOUR
EXPECTATIONS**

**DO NOT INSULT OR PUT DOWN OTHER COMMUNITY MEMBERS
(INDIVIDUALS AND COMPANIES)**



GLOBAL MINING GUIDELINES GROUP



Safety share

WHO WE ARE

We are a global, multi-stakeholder network of “doers” in the mining industry who openly discuss challenges and opportunities and collaborate on solutions and the materials to support their implementation.

We achieve this by collecting industry knowledge and making it available in a structured way.

PURPOSE

Working together to be a catalyst for the operationalization of innovation in the global mining industry to improve the safety, sustainability and productivity of our mines.



VALUES

Inclusivity Accessibility
Collaboration Integrity
Encouragement

CRITICAL FOCUSES

Common language and processes and good operational practices

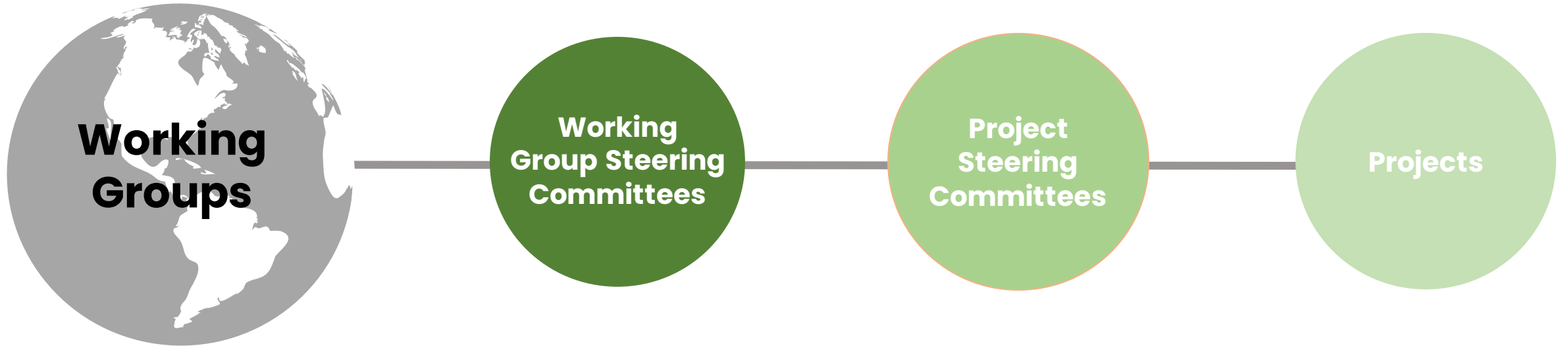
Data integration, interoperability and management

Enabling innovation and technology advancement

Decarbonization and ESG

Safety, culture and skills

THE CORE OF OUR COMMUNITY



Working Groups

Working Group Steering Committees

Project Steering Committees

Projects

Working Groups

Communities of interest focused on mining industry topics or fields, formed based on what the industry identifies as priority areas. The Working Groups launch and oversee projects.

Who can join? Anyone!

Working Group Steering Committees

Steer a working group, launching projects that will result in valuable and relevant guidance documents.

Who can join? Leaders at GMG member companies

Project Steering Committees

Govern a project, ensuring the timely delivery of a high quality, relevant guideline, white paper, etc.

Who can join? Subject matter experts at GMG member companies

Projects

Focused efforts that produce tangible guidance for the benefit of the global mining community.

Who can join? Subject matter experts

WORKING GROUPS

GMG's Working Groups represent major fields related to the mining industry aimed at addressing the industry's most pressing issues and challenges.

The purpose of Working Groups is to create communities of interest based on industry need for collaboration to advance innovation, provide guidance, and share best practices.

Artificial
Intelligence

Asset
Management

Autonomous
Mining

Cybersecurity

Data &
Interoperability

The Electric
Mine

Mineral
Processing

Sustainability

Underground
Mining



SUSTAINABILITY WORKING GROUP

▶ This Working Group aims to develop resources and foster collaboration on operationalizing sustainability, which refers to the process of making sustainability practical, implemented, measurable, technically applied, and integrated throughout operations.

▶ This group will focus on addressing a range of topics with a focus on best practices, guidance, strategies, and tools to enable incremental and short-term practical changes that will help to create more sustainable operations.

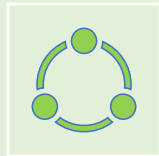
Sustainability Working Group Steering Committee members

Mohammed Ali	Vice President, Sustainability and Regulatory Affairs	Agnico Eagle
Natali Archibee	Sustainability Manager	Mosaic
Luke Mahony	Global Head of Technology & Innovation, Base Metals	Vale
Ryan Duysen	Environmental and Sustainability Lead	South 32
Carlos Viquez	Senior Functional Safety Engineer, Process Engineering	Rio Tinto
Brett Hannigan	Director, Corporate Development and Sustainability	Ero Copper
Laura Mottola	Director Digital Transformation	BBA
Colin McVie	Manager - Define	Mining Plus
Chih-Ting Lo	President	Eelo Solutions
Karen Chovan	Principal/CEO	Enviro Integration Strategies
David Willick	VP & Regional leader North America Mining Metals and Minerals Segment	Schneider Electric
Bas Mutsaers	Strategy, Marketing, Technology lead MMM	Schneider Electric
Narelle Wolfe	Head of Sustainability & ESG	AUSIMM

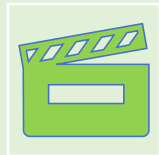
AREAS OF FOCUS



Advancing Carbon Net Zero



Promoting Circularity in Resources



Taking Nature-Positive Action



FOCUS AREA 1: ADVANCING CARBON NET ZERO

What:

Climate risks and actions high on corporate agenda



Demand for critical minerals and metals to fuel the energy transition



More responsible mining and mineral processing needed

Focus areas to deliver on:

- ▶ addressing and implementing low carbon energy source for electricity and for fuel
- ▶ testing and adopting novel/new technology with high impacts (full spectrum of options, such as efficiency, alternative energy, and carbon reduction)
- ▶ enabling and supporting relevant carbon capture, storage, and utilization projects
- ▶ initiating low carbon mine design and mineral processing opportunities
- ▶ carbon data monitoring, tracking, and KPIs
- ▶ incorporating holistic approach and equitable transition



FOCUS AREA 2: PROMOTING CIRCULARITY IN RESOURCES

What:

Need to adapt our approach to resources and mining to ensure we are as efficient as possible with the resources with which we interact

Focus areas to deliver on:

- ▶ Sharing case studies and engaging with SMEs to broaden awareness and understanding of CE, and its application within the sector.
- ▶ Promoting improved cross-section collaboration
- ▶ Supporting the developing of technologies and initiatives that promote designing out process waste and reducing our water consumption.



FOCUS AREA 3: TAKING NATURE-POSITIVE ACTION

What:

Rising expectations for businesses to be more transparent in relation to biodiversity risk management, natural capital reporting and taking collective action to halt and reverse the increasing loss of biodiversity

Focus areas to deliver on:

- ▶ Increasing the understanding, maturity and consistency in relation to a number of key foundational elements related to biodiversity, risk management and natural capital accounting
- ▶ Supporting companies to strengthen their approach to biodiversity
- ▶ understanding and application of the biodiversity mitigation hierarchy, promoting sharing of case studies and practical worked examples across our member companies.
- ▶ development of support materials in relation to natural capital accounting and assessment framework, and their application to the mining and metals sectors - including potential piloting opportunities.

Guideline Suite for Operationalizing Net-Zero

- A suite of guidelines to leverage efforts across the global mining industry towards embedding new practices and technologies in our operations to meet zero emissions targets. Proposed guideline topics include:
 - Electrification (led by The Electric Mine Working Group)
 - Battery Lifecycles
 - Choice of Energy Sources
 - Holistic Energy Management Across the Site
 - Hard to abate emissions (carbon capture, storage and utilization)
 - Waste
 - Lifecycle and Scope 3 emissions
 - Integration with Community
 - Tracking and Reporting

First Guideline in the Suite:

HOLISTIC ENERGY MANAGEMENT ACROSS THE SITE

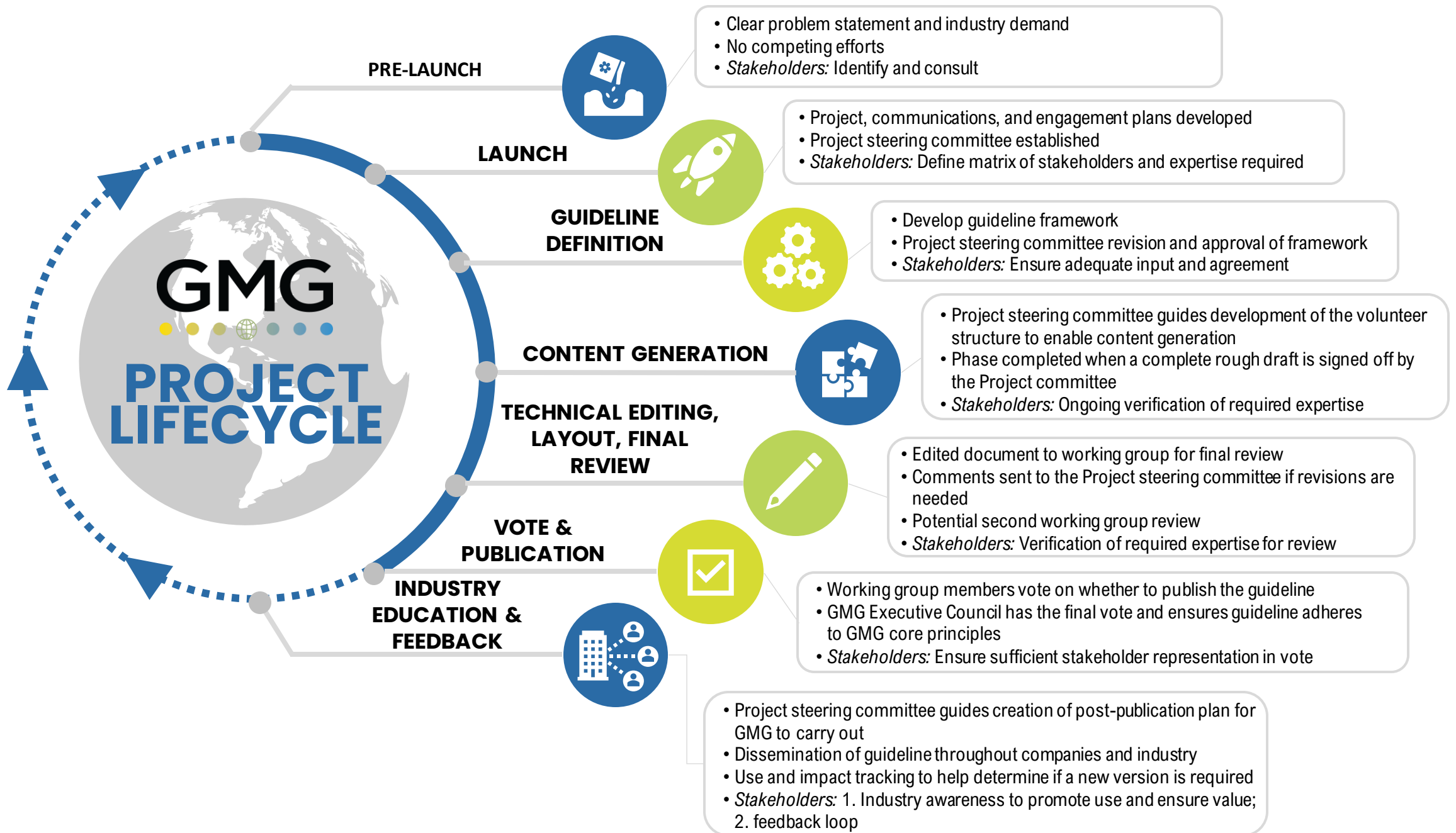
A holistic approach to energy management involves:

- viewing energy as an asset rather than a commodity
- management across the whole lifecycle of the mine from generation to regeneration
- revisiting the whole mine at various stages when implementing new energy management strategies, considering all the changes that have been made and what impacts they have had in other areas of the mine

HOLISTIC ENERGY MANAGEMENT ACROSS THE SITE

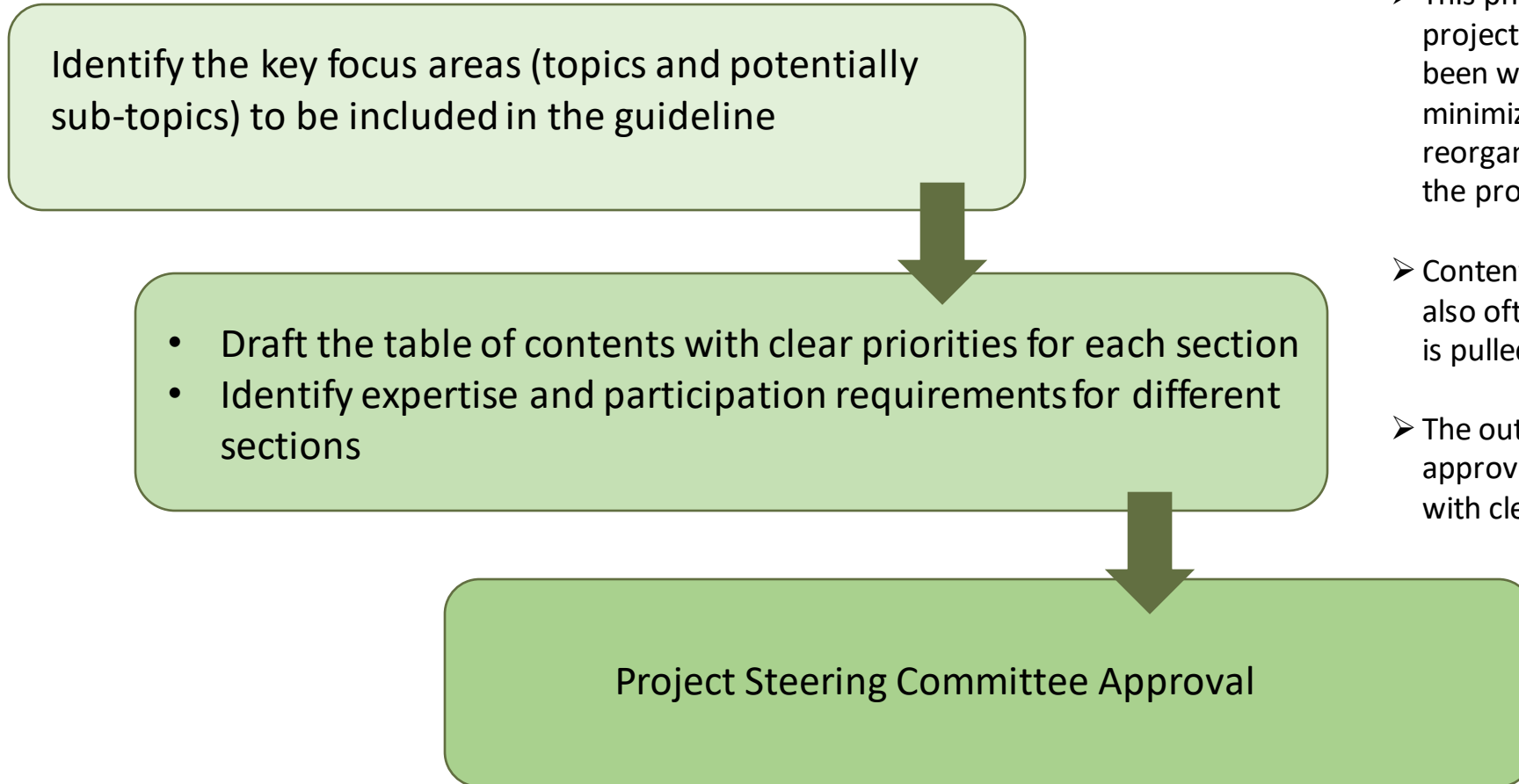
A good first step is to develop a wealth of knowledge, providing a resource base to better understand how to navigate the many interconnected facets of energy usage. Looking at energy management holistically includes considering:

- Managing the whole lifecycle across the mine from generation to regeneration for all energy types
- Linking industry needs to opportunities and technology requirements
- Energy strategy and energy mix: Methods to optimize the entire operation, not just for electricity, but for heat fuel processing that would typically be used in a vehicle and looking at different energy sources and transferring those sources effectively to electricity
- Common language around treating energy as an asset
- Emerging technologies from other industries and how they could apply to mining
- Identifying the different requirements and solutions for different types of mines and regional approaches
- Identifying which decarbonization pathways are common or specific
- Technology readiness options and enabling technologies
- New mine adaptations as new technology is introduced and how to retrofit and adjust or redesign



THE DEFINITION PHASE OF GUIDELINE DEVELOPMENT

Workflow for the Guideline Definition phase



- This phase is an important step of the project lifecycle. A framework that has been well thought through will minimize the inefficient need to reorganize content at later stages in the process.
- Content development strategies are also often identified as the framework is pulled together.
- The outcome of this phase is an approved framework/table of contents with clear priorities for each section.

NATURE'S ROLE IN
ADVANCING
MOSAIC'S
DECARBONIZATION
GOALS

► ***Natali Archibee, Director, Corporate Communications***

The Mosaic Company



THANK YOU

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