

Holistic Value Model for the mining industry

"ESG-adjusted NPV-model"

Presenter

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The aim of the project

CAN AND SHOULD ESG-FACTORS
BE INCLUDED IN TRADITIONAL
FINANCIAL MODELS FOR
DECISION MAKING IN MINING?



BOLIDEN

LKAB

talga

RAGN SELLS

Zinkgruvan Mining
a subsidiary of **lundin mining**

AFRY
AF PÖRVY

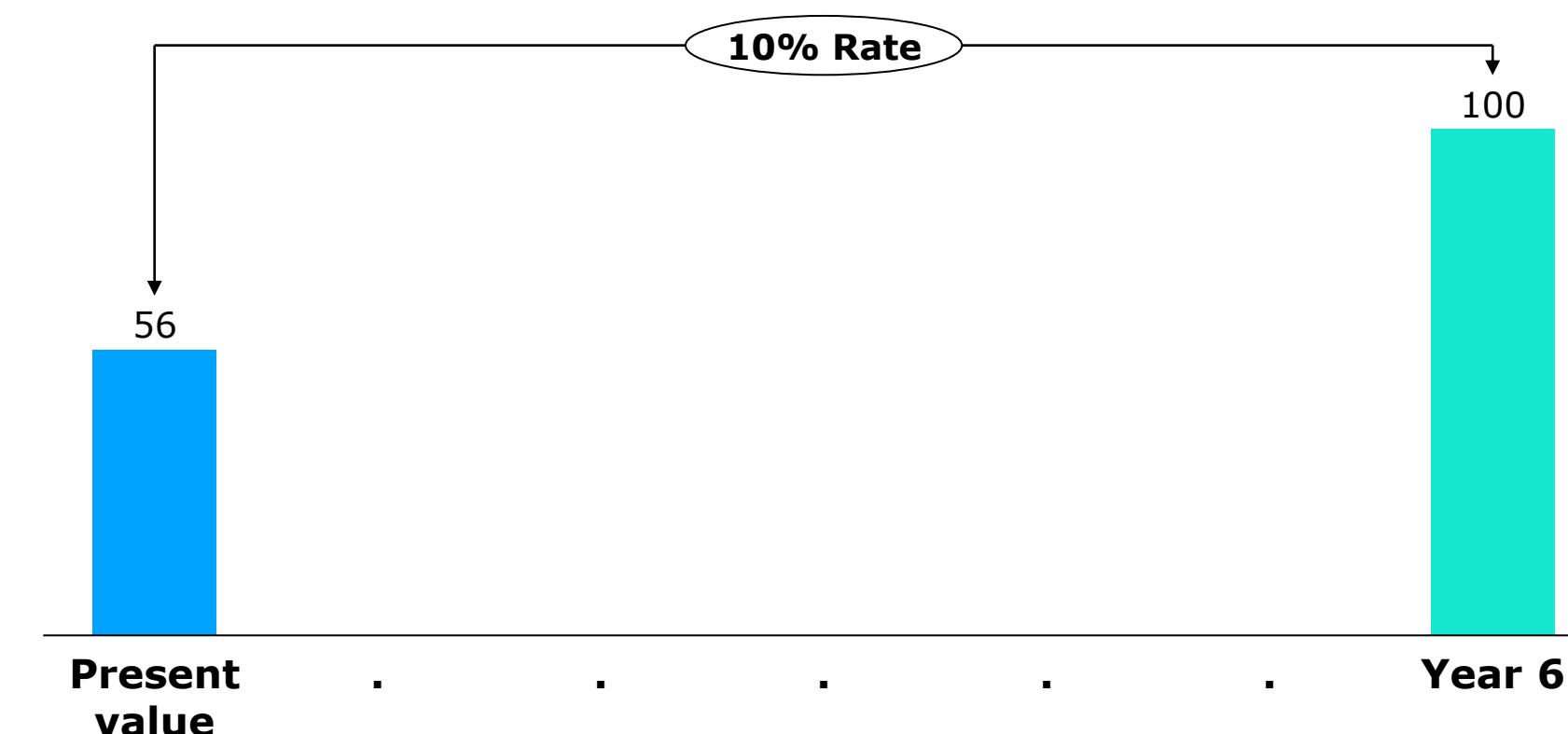
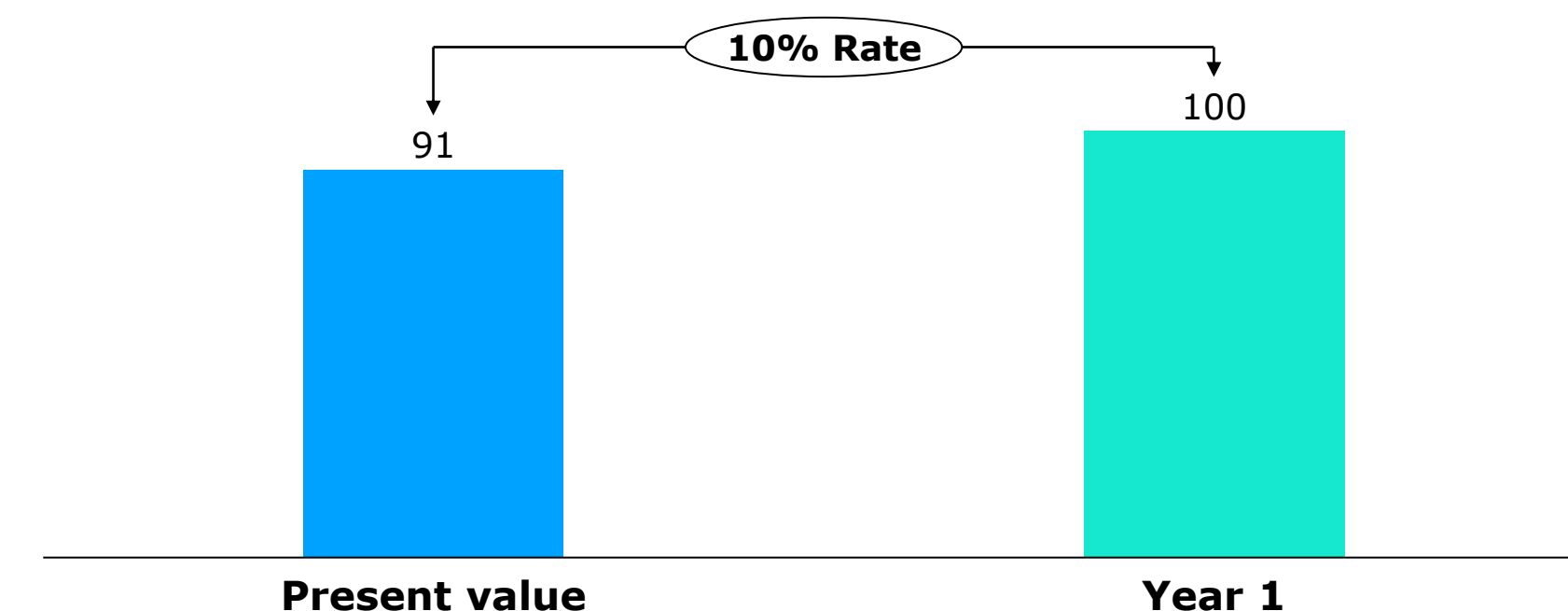
SGU
Sveriges geologiska undersökning

SveMin

Just to set the scene: What is Net Present Value (NPV)?

- The basis for most decision support materials in any industry is Net Present Value Calculations
- The calculation in itself is solid and commonly accepted as a great tool for comparing attractiveness of different options
- The model include a few key logics:
 - Future values are worth less today – this is relative to the “cost of capital”, expressed as a discount rate

- Only parameters that can be quantified will be included in the model



Project Plan

1

Concept model design through current state and best practice analysis

2

Pilot cases and proof-of-concept

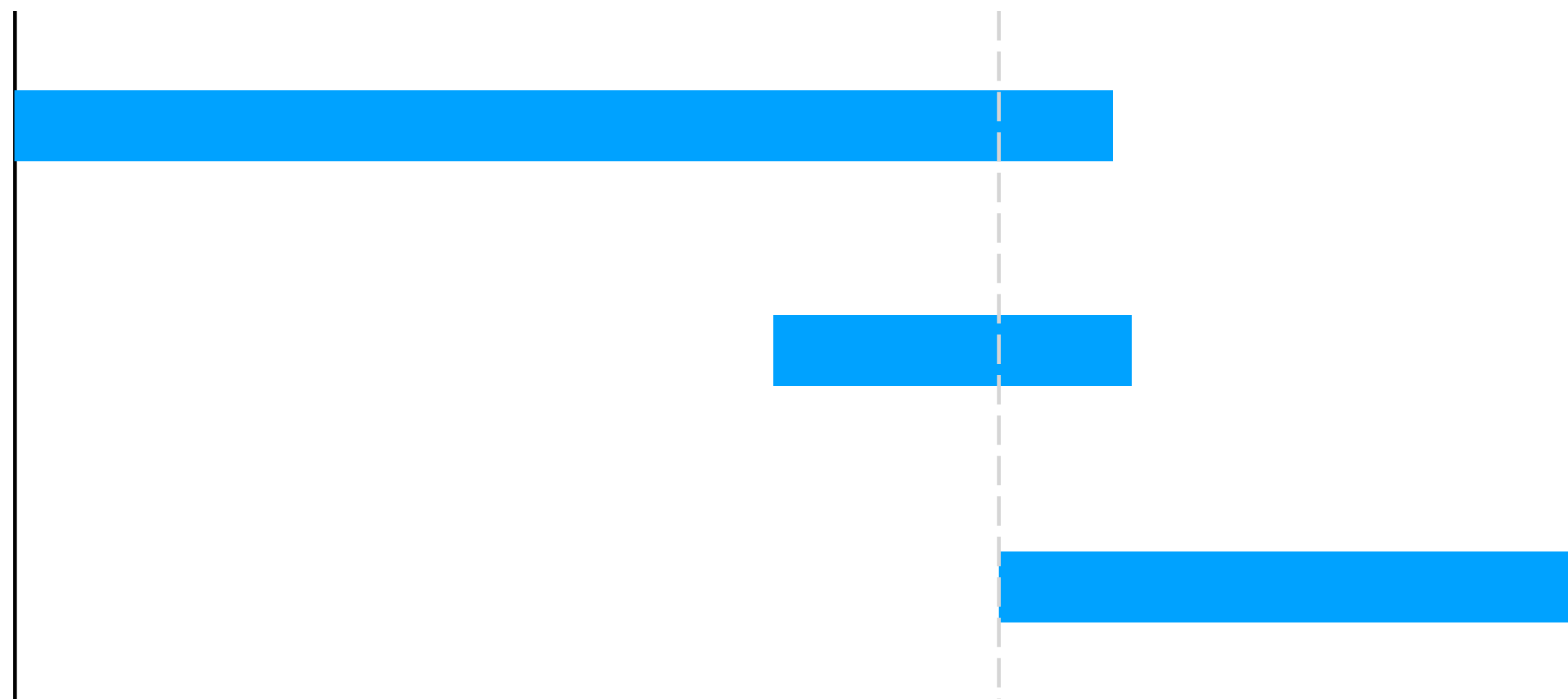
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Playbook development and impact analysis

Jan 2023

Today

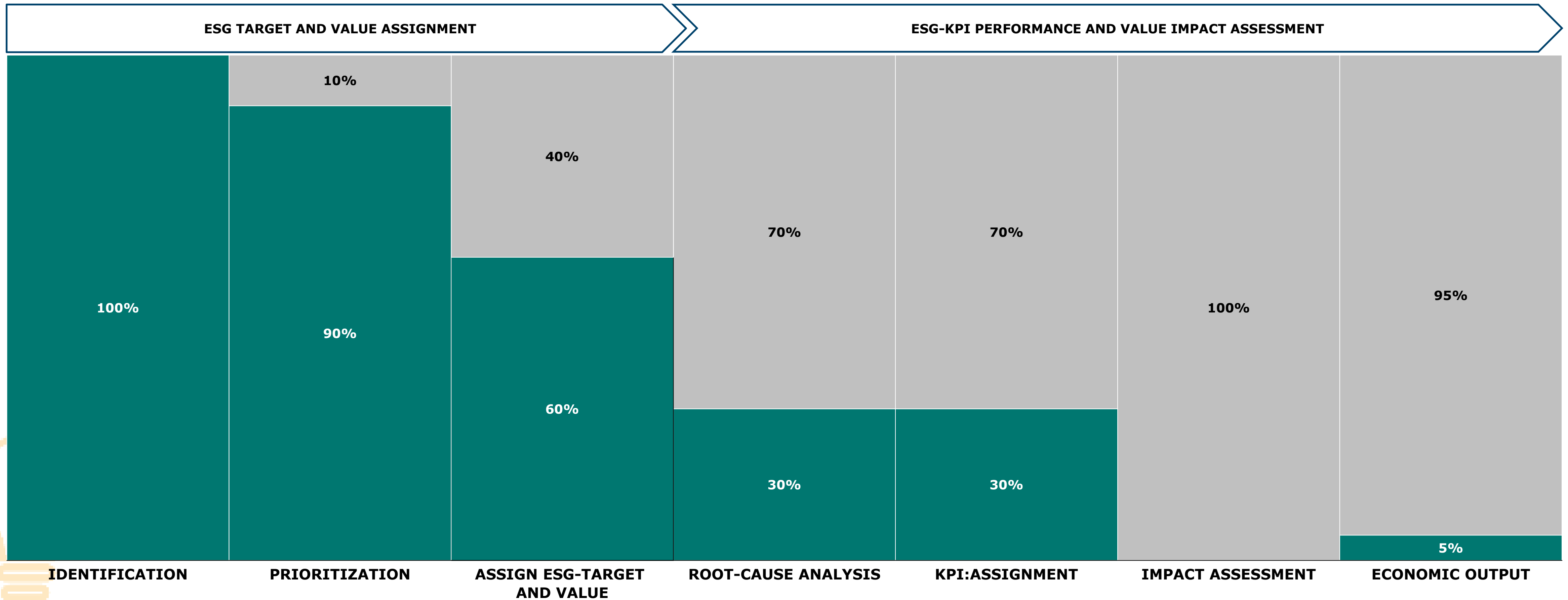
Aug 2024



1

Concept model design through current state and best practice analysis

Examples found Examples not found



1

Key questions that need to be answered by ESG valuation model

1

CAN WE IDENTIFY RELEVANT ESG-RISKS?

2

WHAT VALUES WOULD THESE RISKS IMPOSE TO OUR BUSINESS?

3

HOW CAN WE MEASURE HOW MUCH WE IMPACT THE RISKS BY ANY ACTION?

4

HOW CAN WE MEASURE THE VALUE OF IMPACTING THE RISKS?

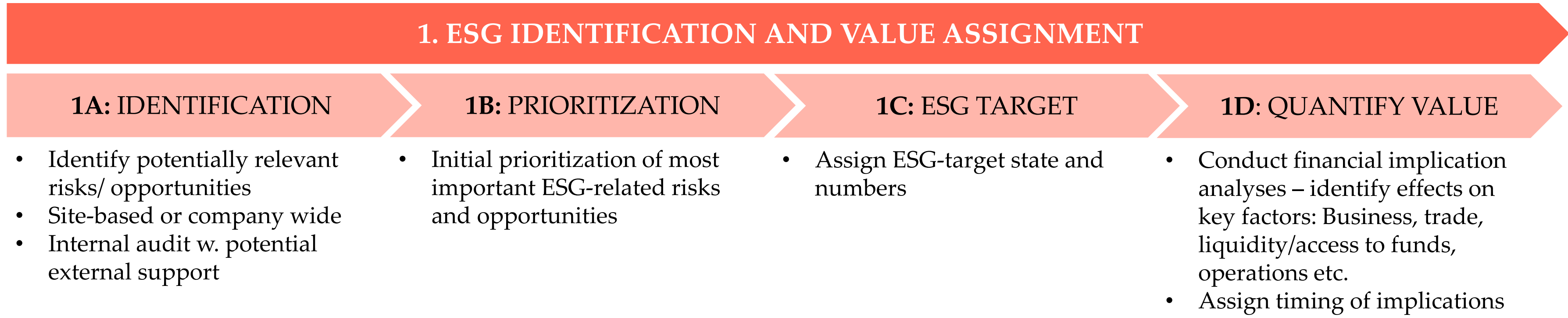
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Overview of model

1

STRATEGIC ASSESSMENT

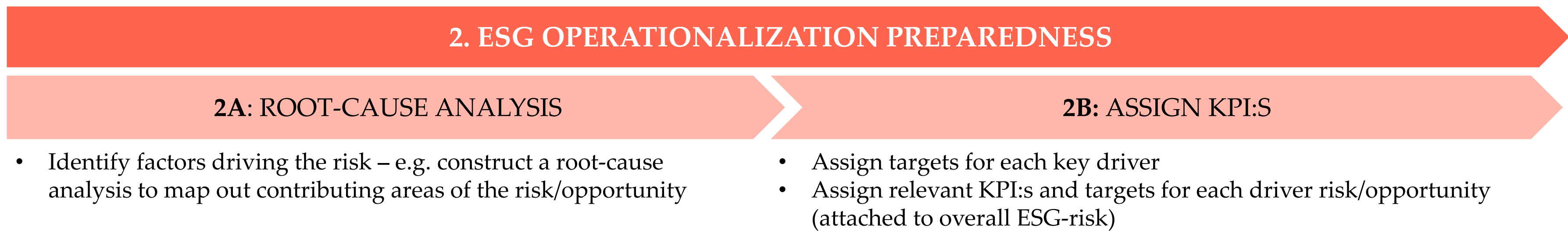
- Company/site specific
- Done every 3-5 years
- Done by experts



2

BREAK-DOWN ANALYSIS

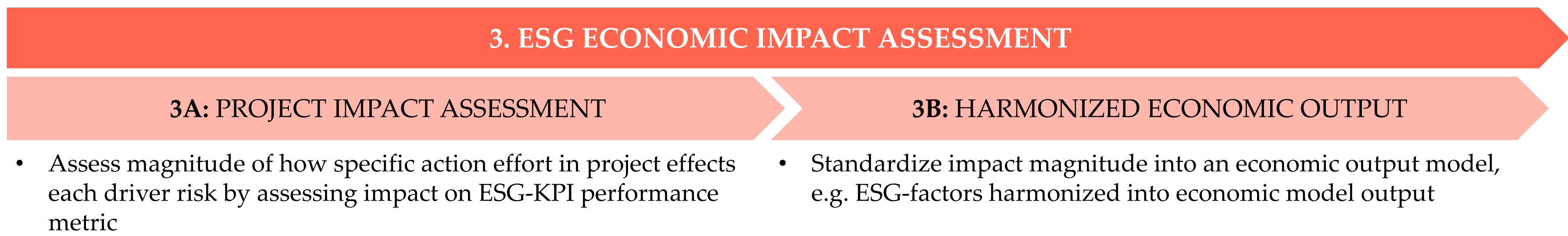
- Done on each driver
- Re-tested annually
- Done by experts



3

PROJECT ASSESSMENT

- Done by every project responsible
- Economic output



Pilot cases and proof-of-concept

Mining project [closed]

- A closed mine site located in Sweden
- Different pre-studies have been conducted continuously throughout last 10-15 years – mainly to assess potential based on updated mineral prices and new technological and operational developments
 - Multiple NPV-calculations have been developed

Pilot aim

- Re-test NPV-calculations by adding ESG-monetary factors into already existing NPV-calculations
- Develop ESG-risk framework based on site-specific ESG-conditions, and assess how continuation of operations affects these risks in monetary terms



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Valorization project

- Related to a closed mine site located in Sweden
- There are potential of valorizing and developing new business opportunities by processing waste at the site

Pilot aim

- Develop new NPV-calculations for multiple potential valorization projects
- Develop ESG-risk framework based on site-specific ESG-conditions – most related to relatively well known risks, but also ESG-related opportunities
- Assess impact on each ESG-risk by each valorization project

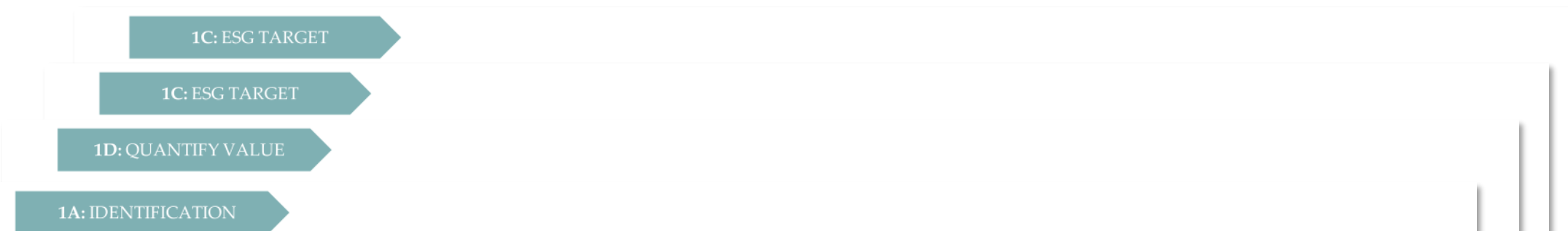
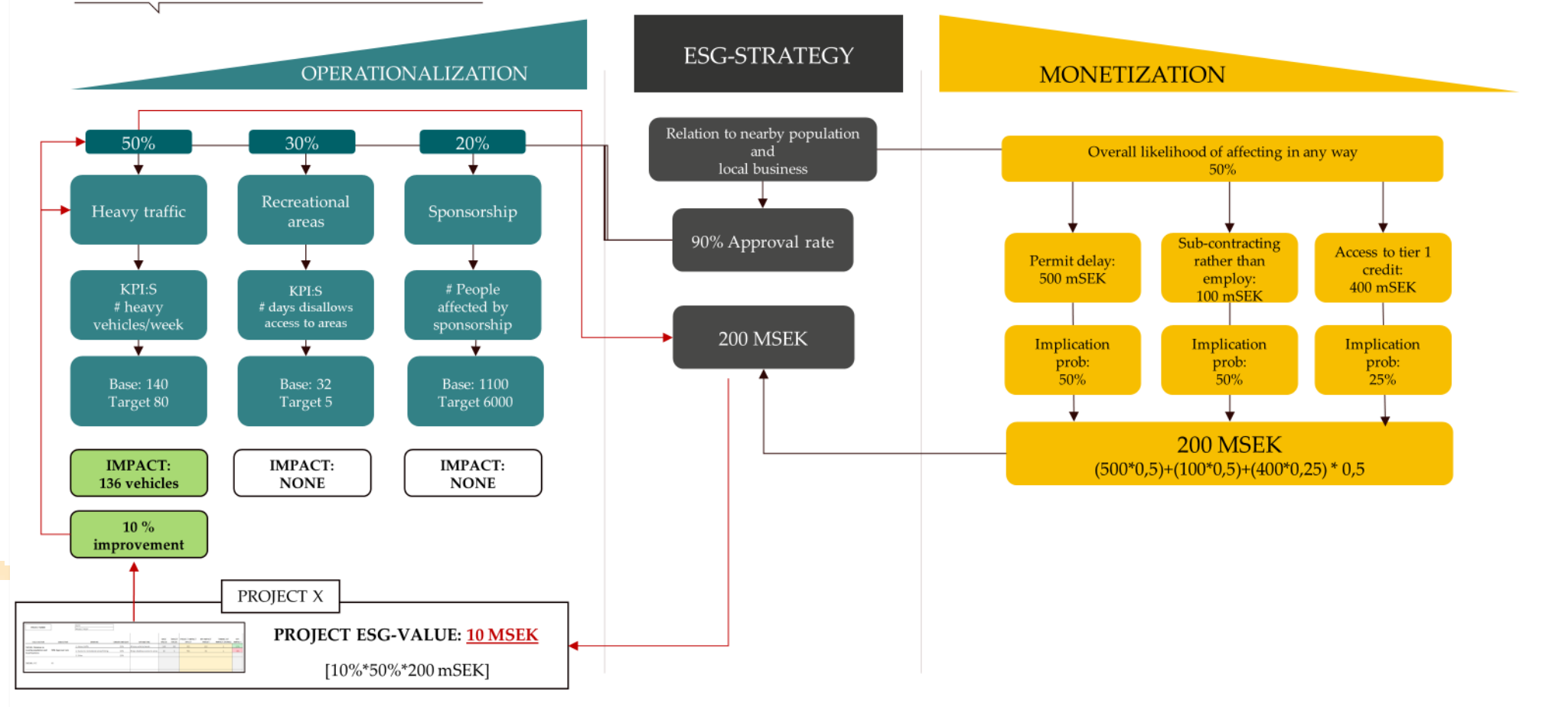
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Potential SLO-project mining

- Potential to assess ESG-risks and opportunities related to a new mine site
- Pilot not started

End result: The method will be summarized in a comprehensive playbook

Example overview



1A: IDENTIFICATION

AIM

- This step aims at identifying a long-list of potential risks and opportunities related to ESG-factors
- No prioritization needed

KEY ACTIVITIES **OUTPUT**

- Inventory analysis:** Given that the company has a risk (and perhaps opportunity) inventory, determine which ESG-related factors have or have not been identified
- Internal audit:** Utilize suitable techniques for risk identification. Involve and conduct meetings with ESG risk owners, risk management, and sustainability practitioners
 - Facilitated Workshops; Interviews; Questionnaires and Surveys; Process Flow Analysis; Leading Risk Indicators & Escalation Triggers; Loss Event Data Tracking
- External audit:** Identify potential external experts and sources to further make risk/opportunity identification comprehensive

- Long-list of factors that with reasonability will affects the company or site :**
 - E-S-G?
 - Opportunity or risk/both?
 - Short description

Thank You!