

# Decision Governance Before Irreversible Commitment

## Independent determinations for physical projects before exposure becomes hard to reverse

Sustainable Exploration provides bounded governance screens for physical systems where early actions can become difficult to reverse.

Each screen is tied to a real commitment threshold and resolves to a formal determination:

**PROCEED** — the next action is admissible within defined bounds.

**DEFER** — the project must preserve optionality while reducing decision-dominant uncertainty.

**REFUSE** — the proposed action creates exposure that the evidence does not justify.

We do not optimize projects, manage execution, or provide general advisory. We determine whether the next hard-to-reverse step should be allowed.

## 1. Core Output Stack

Sustainable Exploration produces bounded decision outputs at different points in the commitment pathway. Each output answers a different question. Together, they prevent a project from moving from uncertainty into irreversible exposure without a defensible decision record.

### 1.1. Commitment Exposure Review

**Question:** Where does exposure begin?

Identifies where a project, site, corridor, resource assumption, infrastructure pathway, capital sequence, or authority structure begins to become difficult to reverse.

This output is used when the commitment boundary is unclear. It does not determine whether the project should proceed. It defines the threshold where ordinary planning begins to become commitment-bearing.

### 1.2. Minimum Evidence Determination

**Question:** What must be known before the next commitment can be considered?

Defines the evidence required before a commitment-bearing action may proceed to admissibility review.

This output is used when the project is not yet ready for commitment, but the evidence burden must be made explicit. It identifies dominant uncertainty, evidence insufficiencies, evidence required before commitment, and actions that remain inadmissible until the burden is met.

### 1.3. Pre-Commitment Admissibility Screen

**Question:** May the proposed irreversible commitment be considered?

Determines whether the proposed commitment is admissible to consider under the current evidence boundary.

#### Outputs:

**ADMISSIBLE** — the commitment may enter governed consideration within the defined boundary.

**INADMISSIBLE** — the commitment may not enter governed consideration under the current evidence and authority conditions.

Instrument A does not authorize execution, approve a project, recommend action, allocate decision rights, or decide whether to proceed. It governs eligibility for deliberation only.

#### 1.4. Governance Posture Classification

**Question:** Given that the commitment is admissible to consider, which posture remains defensible?

Classifies the defensible governance posture after Instrument A has cleared admissibility.

##### Outputs:

**PROCEED-COMPATIBLE** — proceeding within the stated boundary has not been eliminated by the governance constraints tested.

**DEFERRAL-INDICATED** — bounded learning remains governance-defensible, subject to stated controls and prohibited actions.

**REFUSAL-REQUIRED** — refusal is the only governance-valid posture under the stated evidence boundary and conditions.

Instrument B does not recommend, approve, command, or authorize action. It classifies whether Proceed, Defer, or Refuse remains defensible under the evidence record, authority conditions, dependency structure, time-asymmetry, and refusal credibility.

#### 1.5. Commitment Integrity Determination

**Question:** Does the commitment remain defensible as conditions change?

Evaluates whether an existing or emerging commitment remains within its admissible basis as evidence changes, assumptions expire, dependencies accumulate, support systems harden, or refusal authority weakens.

##### Outputs:

**MAINTAIN** — the commitment remains within admissible bounds.

**CONSTRAIN** — the commitment may continue only under narrowed scope, added conditions, or explicit guardrails.

**RE-EVALUATE** — new evidence, changed assumptions, dependency growth, or authority degradation requires reassessment before further hardening.

**TERMINATE** — the commitment no longer satisfies its admissible basis and should not continue within the defined boundary.

Instrument C governs persistence. It does not manage execution, transfer authority, optimize outcomes, or assume responsibility for action. Responsibility remains with the Decision Authority.

#### 2. Pre-Commitment Admissibility Screen

**Use before:** a project takes a major irreversible step.

This is the core Sustainable Exploration screen. It evaluates whether a proposed action should proceed given what remains unresolved and what the action would make difficult to reverse.

Typical triggers include:

- queue entry
- site control
- drilling
- injection
- corridor fixation
- capital escalation
- infrastructure placement
- resource dependency

**Determines:** Whether the next commitment is admissible, should defer, or should be refused.

**Best for:** developers, investors, boards, project sponsors, and infrastructure teams approaching a consequential decision.

#### 3. Site Commitment Screen

**Use before:** a site becomes the project anchor.

A promising site can still be premature as a commitment. This screen evaluates whether land, access, terrain, permitting, environmental, infrastructure, and uncertainty conditions justify allowing the site to harden into the project's center of gravity.

Tests include:

- terrain and access constraints

- permitting and jurisdictional friction
- environmental constraint density
- corridor dependence
- physical fragility
- single-point-of-failure exposure
- optionality half-life

**Determines:** Whether the site should be allowed to become the project anchor.

#### 4. Grid Interconnection Commitment

##### Screen

**Use before:** queue entry or grid-path hardening.

Interconnection can become commitment before a project is otherwise ready. This screen evaluates whether queue entry, point-of-interconnection assumptions, gen-tie exposure, site coupling, and upgrade uncertainty justify proceeding.

Tests include:

- queue lock-in risk
- exit credibility after entry
- POI fragility
- gen-tie corridor dependence
- upgrade exposure
- congestion and stranding risk
- capital escalation pressure

**Determines:** Whether entering or advancing in the interconnection pathway is admissible.

#### 5. Integrated Site + Interconnection Screen

**Use before:** site and grid exposure harden together.

Many projects fail because site control and grid commitment become coupled before either has been independently justified. This screen evaluates whether the site and interconnection pathway remain defensible as a combined commitment.

Tests include:

- site-control lock-in

- queue lock-in
- gen-tie / corridor fragility
- permitting and jurisdiction stacking
- POI alternatives
- dominant coupling
- whether one weak link collapses the project

**Determines:** Whether the combined site-grid pathway should proceed, defer, or be refused.

#### 6. Drilling / Subsurface Intervention Screen

**Use before:** drilling, trenching, excavation, or intrusive subsurface work.

This screen evaluates whether subsurface uncertainty has been reduced enough to justify intervention. It is designed for settings where learning requires disturbance, but disturbance itself can create commitment.

**Best for:**

- geothermal
- critical minerals
- subsurface energy
- lunar or frontier subsurface access
- early-stage resource verification

Tests include:

- target ambiguity
- reservoir or mineral continuity
- stress state uncertainty
- permeability / grade / structure uncertainty
- access and permitting lock-in
- whether drilling reduces uncertainty or prematurely commits the project

**Determines:** Whether subsurface intervention is admissible under current evidence.

## 7. Injection / Storage Commitment Screen

**Use before:** injection or permanence-bearing subsurface storage.

This screen evaluates whether a storage project should proceed before containment, pressure, injectivity, plume behavior, and liability uncertainty are sufficiently bounded.

**Best for:**

- carbon storage
- subsurface disposal
- storage reservoirs
- permanence-bearing injection systems

Tests include:

- caprock integrity
- fault and fracture risk
- plume migration uncertainty
- pressure evolution
- monitoring sufficiency
- long-horizon liability
- reversibility after injection begins

**Determines:** Whether injection or storage commitment is admissible.

## 8. Corridor / Route Commitment Screen

**Use before:** a route, corridor, or access pathway becomes fixed.

Corridors often become commitments before they are recognized as infrastructure. This screen evaluates whether a proposed route should harden before terrain, seabed, environmental, permitting, access, or logistics uncertainty is resolved.

**Best for:**

- offshore wind
- marine infrastructure
- transmission
- pipelines

- seabed systems
- lunar mobility corridors
- logistics pathways

Tests include:

- single-corridor lock-in
- terrain or seabed fragility
- permitting foreclosure
- construction access
- environmental disturbance
- alternative route preservation
- reversal cost if the corridor fails

**Determines:** Whether a corridor or route should be allowed to become the default pathway.

## 9. Minimum Evidence Determination

**Use when:** the next step is not yet ready, but the evidence burden must be defined.

This is a lighter entry product. It determines what must be known before a commitment-bearing action can proceed.

Defines:

- the decision anchor
- dominant uncertainty
- evidence insufficiencies
- required evidence update
- what would change the determination
- actions that remain inadmissible until evidence improves

**Determines:** The minimum evidence required before the next commitment-bearing action may proceed.

## 10. Commitment Integrity Review

**Use after:** a commitment has already begun.

A commitment that was initially admissible may lose integrity as evidence changes, assumptions expire, dependencies accumulate, or refusal authority

weakens. This review evaluates whether the commitment remains defensible.

### Outputs:

**MAINTAIN** — commitment remains within admissible bounds.

**CONSTRAIN** — continue only under narrowed scope or added conditions.

**RE-EVALUATE** — new evidence or changed structure requires reassessment.

**TERMINATE** — commitment no longer satisfies its admissible basis.

**Best for:** projects already advancing through site, capital, infrastructure, drilling, injection, or corridor commitments.

## 11. Typical Engagement Format

Each screen is bounded around a specific decision threshold.

Inputs may include:

- project description
- site / corridor / route information
- available technical evidence
- known uncertainties
- decision timeline
- proposed next action
- authority and termination conditions

Outputs include:

- formal determination
- decision rationale
- dominant uncertainty
- dominant irreversibility
- commitment triggers
- minimum evidence requirements
- allowed next actions
- deferral or refusal rationale where applicable

## 12. When to Engage

Engage Sustainable Exploration before a project:

- enters a queue
- secures a site
- authorizes drilling
- initiates injection
- fixes a route or corridor
- escalates capital
- places infrastructure
- depends on an unresolved resource assumption

The best time is while the decision can still go more than one way.

After commitment hardens, the question changes from whether the step should proceed to how much exposure must be managed.

## 13. Core Principle

A project should not become committed before it becomes admissible.