



Innovation

Environmental innovation strategy, R&D and delivery.

How to use this handbook

This volume is the practitioner (site and technical) reference for the Innovation factor. It sets out what Innovation governs, every assessment element with its own process and controls, the Queensland and Commonwealth instruments that apply, and the primary metric for each element. It is decision support, not legal advice or a substitute for a site-specific assessment — confirm every regulatory point against the current instrument and, where a threshold is close or a critical exception applies, obtain specialist and legal review.

FIELD	DETAIL
Volume	16 of 17 — Environmental Knowledge Handbooks
Factor	Innovation
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Prepared by	Q TEN — Queensland Technical Excellence Network
Review	SME, spatial and legal review before reliance

Executive overview

Innovation is how environmental performance improves faster than regulation requires — new methods, technologies and evidence that lower cost and risk. It is governed less by statute than by good practice: portfolio governance, responsible-innovation ethics, intellectual-property and knowledge management, and data protection under the Privacy Act 1988. For an environmental consultancy and its clients, the discipline is to direct innovation at real problems, manage its risks and IP, and turn results into evidence that stands up. The task is to govern the innovation portfolio, innovate responsibly, and protect and apply what is learned.

Scope

Innovation resolves into four secondary factors — Innovation Strategy and Governance; Research, Design and Experimentation; Sustainable Technology and Delivery; Value, Risk and Learning — and twenty assessment elements. Every element is set out below with its own process and controls and its primary decision metric; identifiers are shared with the companion Knowledge System workbook and the platform calculators.

Assessment elements & process

Each assessment element below carries what it governs and its key pressures, the appropriate site process and controls, and the primary metric that measures it. Work every element that your project engages.

ASSESSMENT ELEMENT	WHAT IT GOVERNS & KEY PRESSURES	PROCESS & CONTROLS
Innovation Strategy and Portfolio Governance <i>Innovation portfolio alignment</i>	Innovation strategy and portfolio governance. Pressures: scattered pilots, misalignment.	Govern the portfolio through stage-gates aligned to strategic problems and value; redirect the misaligned.
Mission-driven and Challenge-led Innovation <i>Mission outcome progress</i>	Mission-driven and challenge-led innovation. Pressures: innovation disconnected from real needs.	Frame missions and challenges from real needs; direct innovation to them; track mission progress.

ASSESSMENT ELEMENT	WHAT IT GOVERNS & KEY PRESSURES	PROCESS & CONTROLS
Responsible Innovation and Ethics <i>Responsible innovation compliance</i>	Responsible innovation and ethics. Pressures: unintended impacts, ethics considered late.	Screen innovation for ethical, safety and environmental impacts before scaling; act on issues.
Intellectual Property and Knowledge Governance <i>IP and knowledge governance</i>	Intellectual property and knowledge governance. Pressures: lost or leaked IP, unclear ownership.	Identify, protect and manage IP; set ownership and licensing; capture knowledge; protect data.
Innovation Culture, Capability and Partnerships <i>Innovation culture and capability</i>	Innovation culture, capability and partnerships. Pressures: weak culture, capability gaps.	Build innovation culture, capability and partnerships; measure and develop.
Research and Evidence Development <i>Research evidence quality</i>	Research and evidence development. Pressures: weak evidence, poor method.	Develop research and evidence to sound method; assure quality; use to decide.
Human-centred and Systems Design <i>User and system needs coverage</i>	Human-centred and systems design. Pressures: solutions ignoring users and systems.	Apply human-centred and systems design; cover user and system needs; validate.
Ideation, Prototyping and Proof of Concept <i>Prototype learning velocity</i>	Ideation, prototyping and proof of concept. Pressures: slow, low-learning experimentation.	Prototype and test to learn fast; run proofs of concept; measure learning velocity.
Trials, Pilots and Controlled Experimentation <i>Trial control and evidence quality</i>	Trials, pilots and controlled experimentation. Pressures: uncontrolled trials, weak evidence.	Design controlled trials with clear measures; assure evidence quality; scale on results.
Technology Readiness and Solution Validation <i>Technology readiness and validation</i>	Technology readiness and solution validation. Pressures: premature scaling of unready technology.	Assess technology readiness; validate solutions; progress only when ready.
Environmental and Climate Innovation <i>Environmental innovation outcome</i>	Environmental and climate innovation. Pressures: missed environmental improvement.	Direct innovation at environmental and climate outcomes; measure environmental innovation outcome.
Nature-positive and Circular Innovation <i>Nature and circular innovation outcome</i>	Nature-positive and circular innovation. Pressures: linear, nature-negative solutions.	Innovate for nature-positive and circular outcomes; measure the outcome.
Digital, Data and AI Innovation <i>Digital and AI responsibility</i>	Digital, data and AI innovation. Pressures: data, privacy and AI-responsibility risk.	Apply responsible data and AI practice; protect privacy; assure digital and AI responsibility.
Innovative Procurement and Market Engagement <i>Innovation procurement effectiveness</i>	Innovative procurement and market engagement. Pressures: procurement that blocks innovation.	Use innovation-friendly procurement and market engagement; measure effectiveness.
Commercialisation, Adoption and Scaling <i>Adoption and scaling readiness</i>	Commercialisation, adoption and scaling. Pressures: innovations that never adopt or scale.	Plan adoption and scaling; remove barriers; assess adoption and scaling readiness.

ASSESSMENT ELEMENT	WHAT IT GOVERNS & KEY PRESSURES	PROCESS & CONTROLS
Innovation Risk and Opportunity Management <i>Innovation risk treatment</i>	Innovation risk and opportunity management. Pressures: untreated innovation risk.	Assess and treat innovation risk and opportunity; monitor treatment.
Innovation Business Cases and Investment <i>Innovation investment value</i>	Innovation business cases and investment. Pressures: unclear value, poor investment decisions.	Build innovation business cases; quantify value; make and track investment.
Benefits, Outcomes and Impact Measurement <i>Benefit and impact realisation</i>	Benefits, outcomes and impact measurement. Pressures: unmeasured benefits.	Measure innovation benefits, outcomes and impact; realise and report.
Failure Learning, Knowledge Transfer and Diffusion <i>Learning and diffusion effectiveness</i>	Failure learning, knowledge transfer and diffusion. Pressures: lessons lost, no diffusion.	Capture failure learning; transfer knowledge; diffuse what works; measure effectiveness.
Innovation Reporting, Assurance and Adaptive Management <i>Reporting and adaptive improvement</i>	Innovation reporting, assurance and adaptive management. Pressures: weak reporting and assurance.	Report and assure innovation; review; correct and adapt.

Regulatory mapping

The instruments most often engaged for Innovation. Confirm currency and application to the specific site and activity before relying on any entry.

INSTRUMENT	JURIS.	WHAT IT DOES	TYPICAL TRIGGER
Patents Act 1990 / IP framework	Cth	Protection of intellectual property.	Creating protectable IP.
Privacy Act 1988	Cth	Protection of personal information in data-driven innovation.	Handling personal data.
R&D Tax Incentive	Cth	Incentive and eligibility rules for eligible R&D.	Claiming eligible R&D activity.
ISO 56001 (Innovation management)	Standard	Recognised innovation-management-system requirements.	Governing an innovation system.

Assurance & evidence

- **Source currency.** Confirm the instruments, criteria and trigger values cited are current and correctly applied to the site and activity.
- **Records.** For each element engaged, retain the assessment, the controls applied, monitoring against the metric, and any statutory notifications — the evidence that the process was followed.
- **Independent review.** Interpretations, threshold decisions and critical exceptions are reviewed by a suitably qualified person before reliance.

TALK TO QTEN

Managing innovation on a live project? QTEN helps Queensland clients turn this handbook into a defensible, evidence-backed position — scoping, assessment, controls, approvals and review. Bring us your site and we will help you get it right, and prove it.

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