Matter of Trust: Securing a Social License to Operate for clean hydrogen projects

Report launch webinar

November 2025

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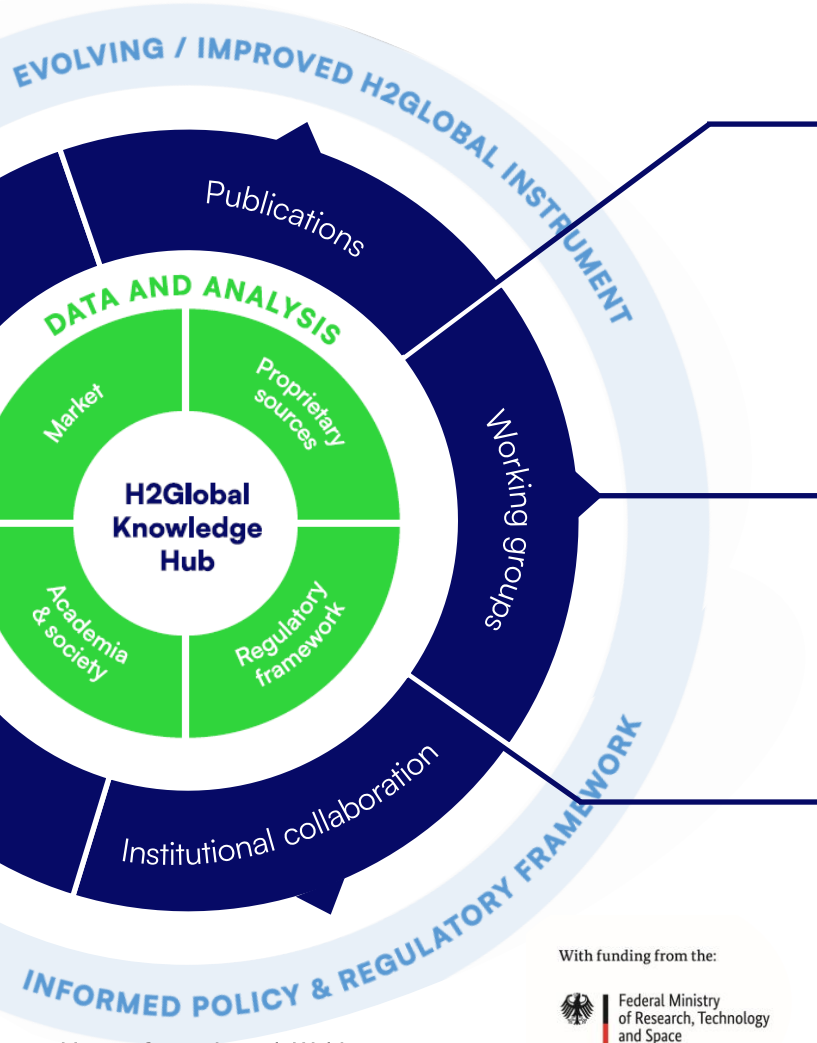
This report is part of the H2Global Knowledge Hub



THREE PUBLICATIONS IN 2025

- Shoring up demand: Identifying effective instruments that support clean hydrogen demand build-up
- Matter of trust: Securing a Social License to operate for clean hydrogen projects
- From ports to offtakers: Scaling last-mile hydrogen infrastructure

CONTRIBUTION OF INDUSTRY EXPERTS COVERING THE WHOLE HYDROGEN VALUE CHAIN

- Regular virtual knowledge exchanges and in-person workshops
- Representation from finance, supply, infrastructure, demand, and manufacturing

COLLABORATION WITH KNOWLEDGE PARTNERS FROM:

- Center on Global Energy Policies at Columbia University
- IEA
- OECD
- Oxford Institute for Energy Studies
- World Bank
- Hydrogen Council

With funding from the:
Federal Ministry of Research, Technology and Space

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Agenda

1 SLO: Challenge and key dimensions

- What is the SLO?
- The importance of SLO in nascent clean hydrogen sector
- Analysis of key dimensions

2 Analysis of existing toolkits

- Why process matters?
- Overview of large footprint industry toolkits

3 Deep dive with case studies

- Overview of nine brief cases showcased in the report
- Deep dive into projects and their good practices

4 Recommendations

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SLO: Challenge and key dimensions

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Social Licence to Operate (SLO) is a necessary condition for sector development

Definition

the level of approval that an industry, organization, or project realizes from communities and other stakeholders

Key drivers

- Credibility
- Legitimacy
- Trust

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The challenge: clean hydrogen projects are already contested

HYDROGEN ENERGY

Marubeni's HyBont Green Hydrogen Project in Bridgend Set to Proceed After Overcoming Safety Concerns

NL

Blockades put entire green hydrogen project at risk, World Energy GH2 tells court

Company wins interim injunction, as protesters vow to continue their fight

Rob Antle, Troy Turner · CBC News · Posted: Feb 10, 2023 3:35 PM EST | Last Updated: February 10, 2023

BBC

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Redcar hydrogen trial scrapped by government

'Next great energy boondoggle': Protesters rally against provincial green hydrogen projects

By Aidan Rawding, PNI Atlantic

Published Nov 20, 2024 Last updated Nov 20, 2024 5 minute read

The Battle to Stop Air Products' Carbon Capture Project at Lake Maurepas Grows

Pro-industry NIMBYs leading the fight question the company's claims of being "clean."

By **Julie Dermansky** on Feb 17, 2023 @ 12:50 PST

17 min read

Species Protection Worries

Environmental Activists Cast Doub German Hydrogen Project in Nami

In Namibia, Germany is planning to build a massive green hydrogen pl of a nature preservation. Local environmentalists are furious, but are t

By **Susanne Götze** und **Claus Hecking** in Windhoek and Lüderitz, Namibia

15.10.2024, 10.49 Uhr

t states. This arresting visual captures the sentiments of opponents of a plan to develop the world's largest capture and sequestration (CCS) project under the lake.

ducts, a global hydrogen manufacturing company, is proposing to build a $4.5 billion "Clean Energy Complex" ufacture blue hydrogen and an accompanying carbon capture and sequestration (CCS) project, that would rational by 2026.

BUSINESS DEVELOPMENT

Kintore groups protest huge hydrogen plant as controversial plans take step forward

April 26, 2025 4 min read

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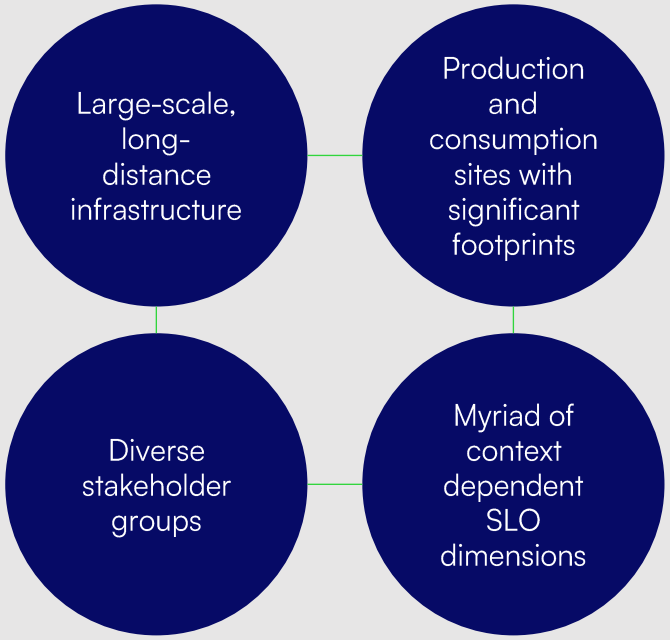
The solution: build and maintain SLO for clean hydrogen projects

- Building and maintaining SLO will be essential for the successful development of the hydrogen economy, as **financial/reputational /community risks** associated with poor stakeholder relations are high
- **Awareness** of SLO exists among project developers, but not at all locations and at the scale needed



Identifying **good practices** on how to deal with the challenges and opportunities associated with securing and maintaining a SLO for the clean hydrogen economy is **essential**

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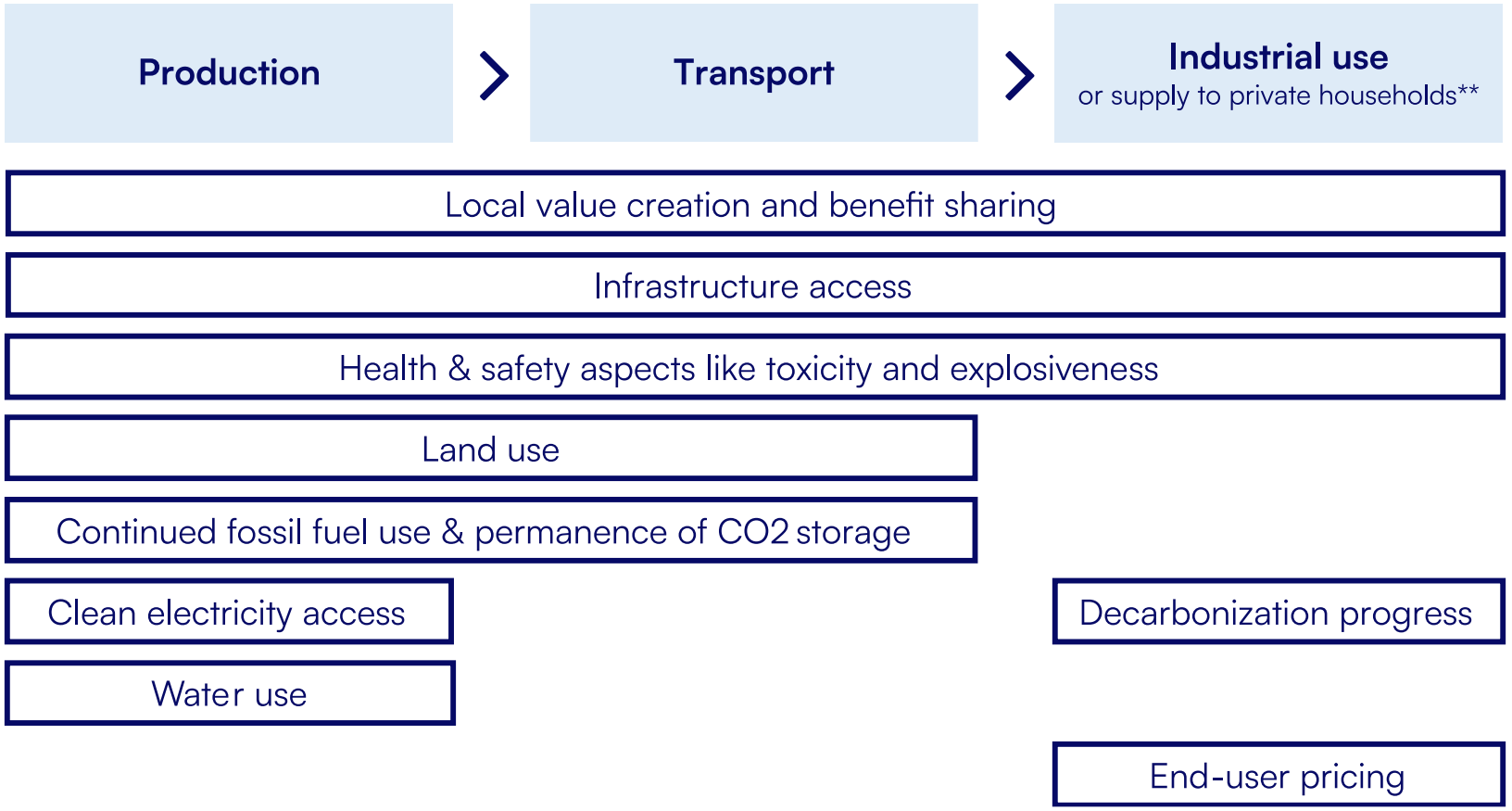
Schematic overview of relevant substantive SLO dimensions at different stages of the value chain

Primary SLO challenges/ opportunities for clean hydrogen*



* Non-exhaustive list

** Direct use of clean hydrogen and its derivatives in private households is less likely due to efficiency considerations and the corresponding implications for fuel prices. This type of use is still considered in several countries for individual mobility and heating solutions.

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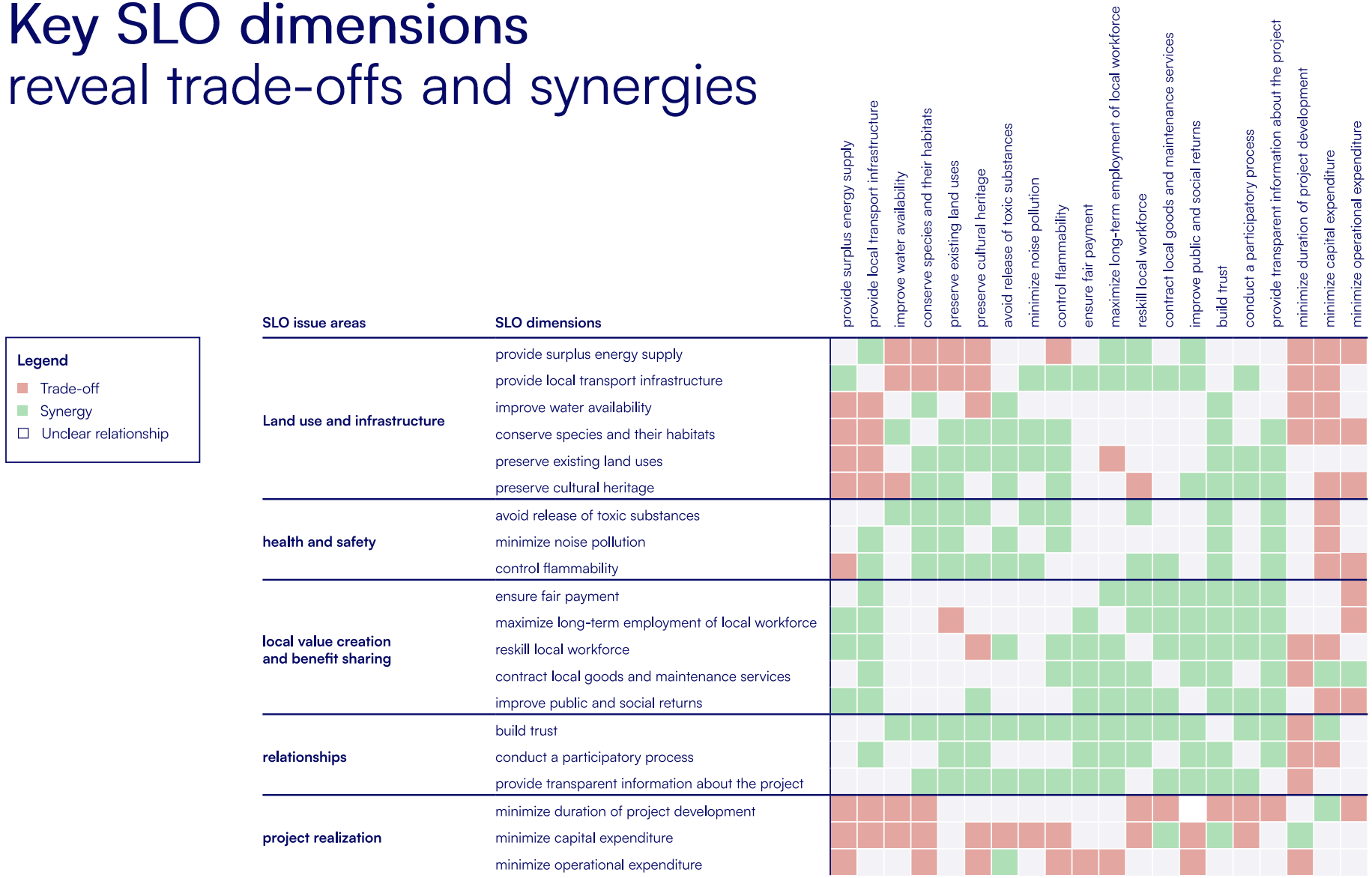
Key SLO dimensions
reveal trade-offs and synergies



Key takeaways

- Land use and infrastructure SLO dimensions generate significant tradeoffs due to limited land availability. They are the most sensitive dimensions to consider.
- The emergence and severity of tradeoffs are contingent upon the project's implementation strategy. When tradeoffs arise, innovative approaches can be employed to minimize or even negate these tradeoffs, thereby enabling smoother project execution.

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Analysis of existing toolkits

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Understanding why the process matters

Characteristics of SLO

- A SLO is granted by the **community**
- **Trust** in the project developer is key
- The trustworthiness of project developers depends on the **process** and the companies' **commitment to implement** the agreed measures

Effects of the process

- Inclusive, transparent and fair processes reveal **legitimate interests** of stakeholders
- and **create a setting of trust** enabling collaboration
- Successful processes provide effective and adequate **solutions** to the issues raised

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Identified stakeholder groups in the clean hydrogen economy

	Traditional stakeholders	Newer stakeholders
Communities of place	• Local residents • Sedentary Indigenous people • Local business owners • Formal landowners • Formally entitled land users • …	• Indigenous people with nomadic lifestyles and land stewardship • Downstream communities • …
Communities of interest	• Government authorities • Local NGOs • …	• Workers and unions • Regional/international NGOs • Customers and hydrogen users • Media • …

Source: own adaptation of Dare et al. (2014)

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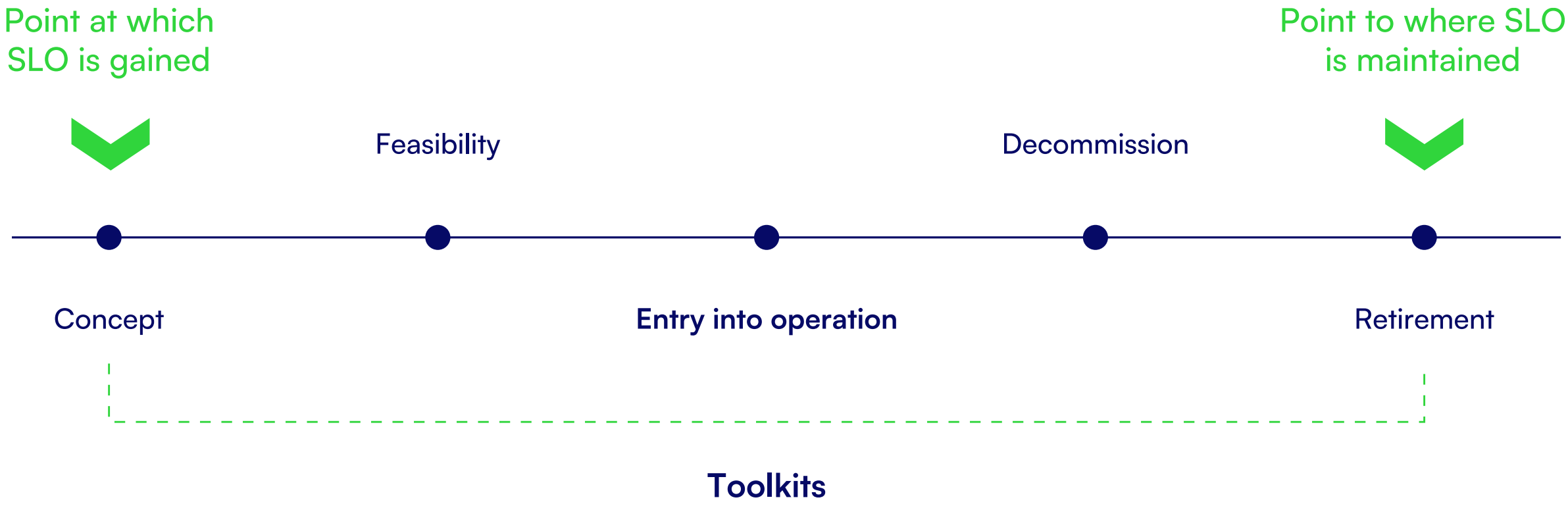
Project timeline and the procedural role of toolkits



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Introduction to the selected toolkits
covering large footprint industries

Institutions

Toolkits were selected from various institutions including **multilateral development banks, thinktanks and NGOs**

Industries

Industries selected include: **mining, renewable energy and hydrogen**

Toolkits are not equivalent and do not provide guidance or evaluate project standards

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Common tools across different toolkits

	Tools
Internal preparation & assessment	quantify business case for community investment increase internal buy-in assess competencies
Relationships	identify relevant stakeholders
Planning	analyze institutions, conduct a community mapping rank development opportunities enfranchise marginal groups set up a consultation matrix define project cycle define clear exit strategy
Implementation & management	develop indicators ensure access to information ensure equitable collection of information
Monitoring, evaluation & learning	information dissemination strategy

Key Takeaway

Strong overlaps provide a **transferrable** and **core** set of tools for the clean hydrogen industry

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Cross-comparison of unique tools from seven community engagement toolkits by project parameter

Parameter	Strategic Community Investment	Social License Toolbox (Europe)	Building a Social License	Enabling Community-Powered Transition	Local Benefit Sharing	Community Development Toolkit	EIB Standard
Internal Preparation and Assessment	Business case for investment ROI observations	PEST analysis** Environmental monitoring plan	History of engagement Stakeholder reengagement process	Community as advisory source Focus on justice			
Relationships		Identify power imbalances			Youth engagement		
Planning						Financial evaluation tool	Resource allocation
Implementation and Management		Codified agreements		Equitable technology (GIS***)	Senior management support	Resettlement plan	Indigenous inclusion
Monitoring and Evaluation	ROI* observations	Environmental monitoring plan	Stakeholder reengagement		SDG**** framework		Interim results documentation

Key Takeaway

Individual tools occur mostly in the implementation and monitoring phases of community engagement and project development

*ROI: return on investments
**PEST analysis: analysis of political, economic, sociocultural, technological factors
***GIS: geographic information systems
****SDG: sustainable development goals

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Business objectives are facilitated by SLO as a business driver for community investment

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Deep dive with case studies

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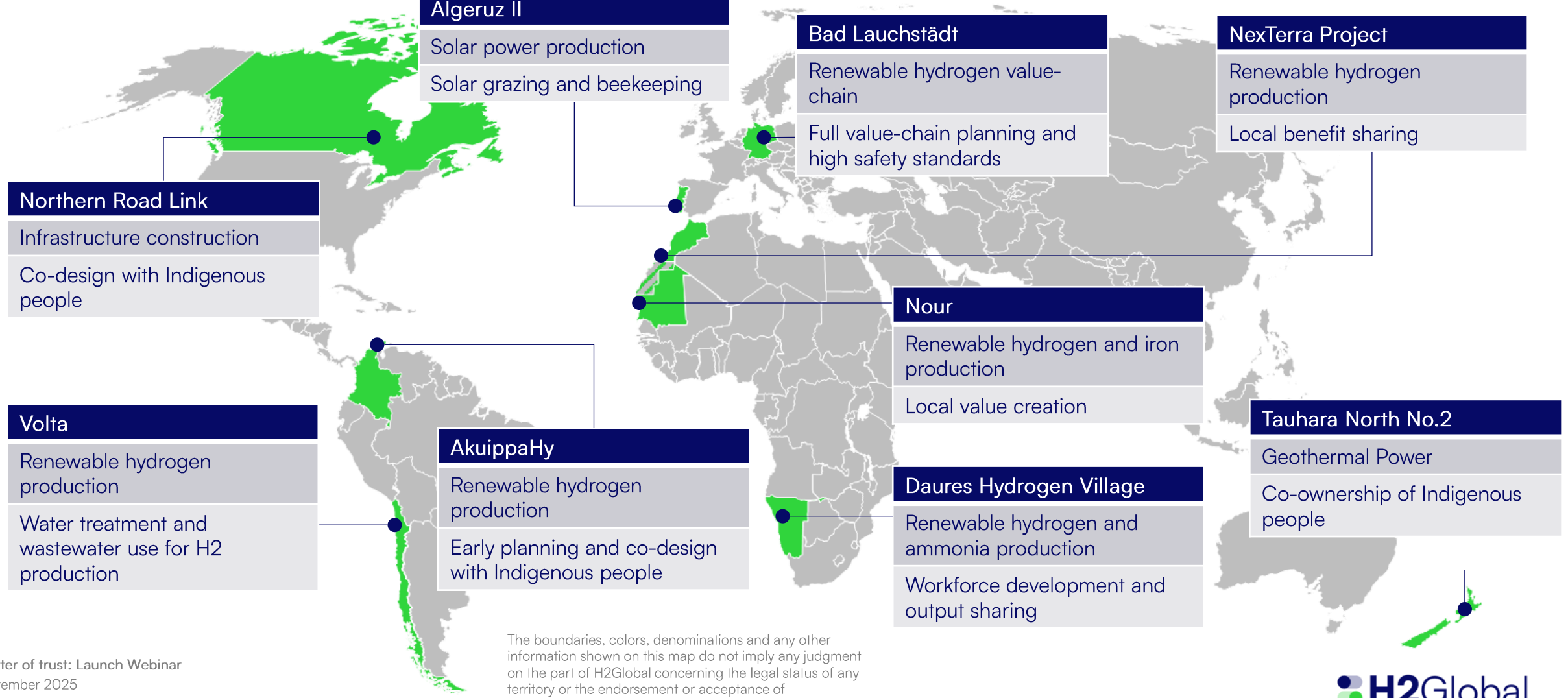
Selected case studies from large footprint industries highlight good practices that foster SLO across the value chain



Algeruz II
- Solar power production
- Solar grazing and beekeeping

Bad Lauchstädt
- Renewable hydrogen value-chain
- Full value-chain planning and high safety standards

NexTerra Project
- Renewable hydrogen production
- Local benefit sharing

Northern Road Link
- Infrastructure construction
- Co-design with Indigenous people

Nour
- Renewable hydrogen and iron production
- Local value creation

Volta
- Renewable hydrogen production
- Water treatment and wastewater use for H2 production

AkuippaHy
- Renewable hydrogen production
- Early planning and co-design with Indigenous people

Daures Hydrogen Village
- Renewable hydrogen and ammonia production
- Workforce development and output sharing

Tauhara North No.2
- Geothermal Power
- Co-ownership of Indigenous people

The boundaries, colors, denominations and any other information shown on this map do not imply any judgment on the part of H2Global concerning the legal status of any territory or the endorsement or acceptance of such boundaries

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Good environmental, health and safety practices can improve living conditions in host communities

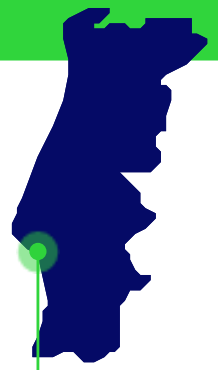
Volta

Output
600 kt/a
ammonia

Input
600 MW
solar power

- For water supply, the facility draws from an existing desalination plant, and a novel wastewater treatment plant
- The plan to use purified and recycled wastewater reduces the community's discharge into the sea while providing a cheaper water source for the projects

Algeruz II



Output
32 GWh/a
solar power generation

Land use
57.9
hectares

- The project installed 30 beehives producing 300kg of honey on the grounds of the solar PV project, and uses 200 sheep for solar grazing, providing income to local shepherds while maintaining the facility
- Revenue from the project is partially used to fund Iberdrola's CONVIVE program to support the conservation of biodiversity in neighboring communities

Bad Lauchstädt

Capacity
30 MW
electrolysis

Scope
25 km
pipeline

- The consultation process includes companies from the complete value-chain simultaneously
- For the hydrogen pipeline, high security measures apply, including operation well below the maximum pressure and public sharing of the security concept

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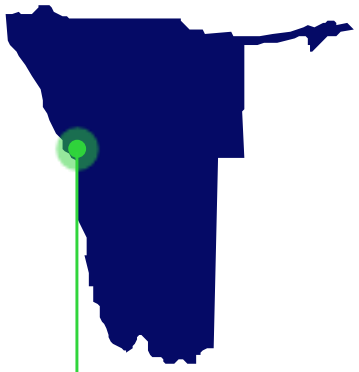
Clean hydrogen projects can share value and benefits
To create positive impacts beyond direct employment in the project

Daures Hydrogen Village



Capacity
1,600 MW
electrolysis

Input
3,000 MW
wind and solar power

- Multi-phased construction phase will have a share of at least 30% Namibian companies as subcontractors
- 32-month training program installed with a special focus on disenfranchised groups
- The project uses different approaches to capture all relevant stakeholder in the region (from liaison managers to radio advertisement)

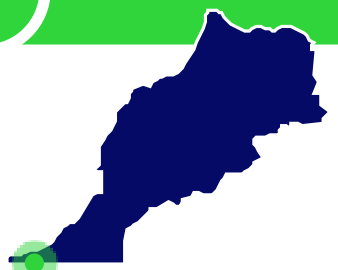
Nour

Capacity
1,600 MW
electrolysis

Output
3 GW
renewable power generation

- The project aims to include local demand anchor in the form of green steel
- Adherence to Equator Principles and IFC standards
- Opportunities for local service procurement in lifting, welding, and handling have been identified

NexTerra Project



Capacity
15MW*
10 GW**
electrolysis

* (1st phase)
** (3rd phase)

Input
22,000 MW
solar and wind power

- The project works with royal and local authorities and local intermediaries as trusted liaisons
- Plans included shared port infrastructure with other projects in Tarfaya, surplus desalination and power generation capacities

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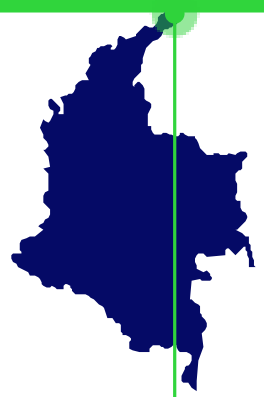
Early, transparent and meaningful engagement fosters relationship building and trust

AkuippaHy



Capacity:

540 MW
solar power

460 MW
wind power

400 MW
electrolysis

- Past experiences have left local Indigeneous people skeptical of large-scale developments
- Consultation with Indigeneous people about the location thus happens before land purchase
- This consultation includes discussion about surplus infrastructure relevant to the local population

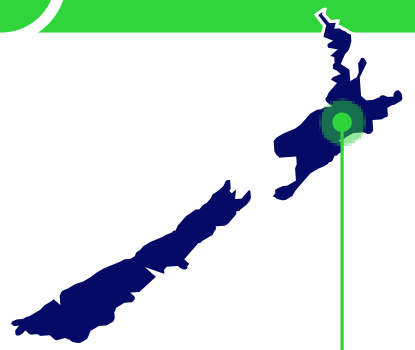
Northern Road Link

Project scope

164 km
connective road

- The road project will enable transport of goods, services and resources to First Nations communities and improve access to mineral deposits
- First Nations lead the environmental impact assessment and participate in construction, ownership and operation

Tauhara North No.2



Capacity

140 MW
output

- The Tauhara North No. 2 Trust negotiated a 35% ownership share for Indigenous people
- The project marks the latest of three projects showing a clear evolution from participation through land leases to full co-ownership of the plant

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Recommendations

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Recommendations for distinct stakeholders (1)

Project developers		**Prioritize early, proactive, and transparent engagement** paying attention to existing land-uses, economic, environmental and social conditions
		**Go beyond compliance to maximize shared value** Seeking win-win situations for communities and companies
		**Learn from past experiences and manage project lifecycle impacts** including temporary worker influx during construction and legacies from other industries in the area
		**Utilize existing toolkits and good practices** And take inspiration from adjacent sectors

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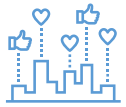
Recommendations for distinct stakeholders (2)

Policymakers

Create a predictable and supportive environment
for projects that go beyond compliance



Incentivize projects that create local value and shared benefits
for projects that go beyond compliance

Act as a facilitator
for multi-stakeholder dialogues and build capacities in communities

Social actors

Engage constructively and pragmatically in consultation processes
by recognizing clean hydrogen's contribution to tackle GHG emissions while applying actionable high standards

Actively review community plans
to hold developers accountable

Get involved as mediators where appropriate
by providing organizational support to community members

Advocate for community-specific needs
by helping developers understand local contexts

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Key SLO good practices
by SLO dimension cluster

SLO issue areasc	SLO dimensions	Good practice
land-use and infrastructure	provide surplus energy supply	• Oversize power input in line with energy needs of the host community and use additional capacity as back-up for the project to increase resilience • Ask local stakeholders (particularly Indigenous people) and implement their recommendations on the preferred route for roads and other transportation infrastructure • Oversize desalination plants to provide additional water for local farmers and other users. Include a sustainable brine management system • Build water treatment plants to improve water management in host communities while securing water supply for the project • Consider multiple land-using including solar grazing and beekeeping on project grounds
	provide local transport infrastructure	
	improve water availability	
	conserve species and their habitats	
	preserve existing land uses	
	preserve cultural heritage	
health and safety	avoid release of toxic substances	• Deploy a security-first culture in project development • Space potentially hazardous assets more generously than necessarily required by regulation
	minimize noise pollution	
	control flammability	

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Key SLO good practices
by SLO dimension cluster

SLO issue areas	SLO dimensions	Good practice
local value creation and benefit sharing	ensure fair payment	• Map locally available maintenance service and goods providers to put under contract • Invest into qualification courses and schools for local workforce • Provide direct payments to community members • Support institutional capacity building for engagement processes • Manage influx of workforce during construction phase carefully including an exit strategy • Provide co-ownership/equity to local communities and Indigenous people
	maximize long-term employment of local workforce	
	reskill local workforce	
	contract local goods and maintenance services	
	improve public and social returns	
relationships	build trust	• Reach out to (potential) host communities to discuss project location even before land acquisition • Map and invite stakeholder for consultation widely • Include non-traditional stakeholders such as nomadic Indigenous people and youth.
	conduct a participatory process	
	provide transparent information about the project	

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