

REAL-WORLD SCENARIO

APPLYING A DISTRIBUTIVE JUSTICE LENS



Green hydrogen export facility

An energy developer plans to build a green hydrogen production facility near a coastal town. The project involves land allocation, large-scale renewable generation, desalination infrastructure, and decisions about hiring, procurement, and long-term water and energy use.

*This scenario brief forms part of a series of resources by IHRB on **Distributional Justice and the Role of Business**, which examines how to operationalise fairness in the energy transition to support private sector decision making.*

1. Decision and Transition Context

A private consortium plans to develop a large-scale green hydrogen plant adjacent to an existing port facility.

- The project is part of a national strategy to:
- position the country as a green hydrogen exporter,
 - attract foreign investment,
 - diversify the economy away from fossil fuels,
 - meet long-term decarbonisation commitments.
- The site is selected because of:
- high solar and wind resource availability,
 - proximity to deep-water port infrastructure,
 - existing industrial zoning.
- However:
- the region experiences periodic drought,
 - youth unemployment is high,
 - electricity supply to households remains unstable,
 - pressure to move quickly to secure export contracts is significant.

2. Distributional Context

- For their livelihoods, the coastal town population relies on:
 - small-scale fishing,
 - tourism,
 - public sector employment,
 - limited light industry.
- Water scarcity is a recurring concern.
- Municipal infrastructure is strained.
- Informal settlements lack reliable services.
- Technical skills in hydrogen production are not locally available.
- Previous large industrial projects delivered:
 - short-term construction employment,
 - limited permanent jobs,
 - unclear local spillovers.

3. Distributive Justice Risks Arising From Pending Decision

Water allocation risks:

- The hydrogen facility requires significant volumes of desalinated water.
- Residents fear competition with municipal water supply.
- Fishing communities are concerned about brine discharge impacts.

Land use pressures:

- Renewable generation required to power electrolyzers occupies large tracts of land.
- Tourism operators worry about landscape changes.
- Some communal land users risk displacement.

Employment mismatch:

- High-skilled technical jobs dominate long-term operations.
- Local residents lack required qualifications.
- Construction jobs are temporary.

Export-oriented benefits:

- Hydrogen is exported to foreign markets.
- Local electricity prices remain unchanged.
- Perception that local resources serve external demand.

Timing risks:

- Land and construction disruption occur immediately.
- Economic benefits depend on long-term global demand stability.

4. Company Response

Participation and recognition:

- The company conducts separate consultations with:
 - fishing associations,
 - tourism operators,
 - informal settlement representatives,
 - municipal authorities.
- Community mapping identifies informal land use not reflected in zoning plans.
- Desalination discharge routes are adjusted following engagement with fishing groups.

Transparency and justifiability:

- The company publishes:
 - project water demand projections,
 - desalination technology specifications,
 - job breakdown by phase and skill level.

- Clear explanations are provided on why export contracts are necessary to finance the project.

Capability-building and local resource access:

- As part of the project design, a small portion of on-site renewable generation is allocated to:
 - support a local mini-grid,
 - stabilise supply for small businesses,
 - reduce outages affecting informal settlements.
- Local electricians are trained to maintain mini-grid components.
- Technical apprenticeships are created for system monitoring roles.
- Desalination capacity includes a municipal off-take component to supplement local water supply.
- Local procurement is prioritised during early phases of the build.

5. Distributive Justice Outcomes

Mitigating harms:

- Desalination infrastructure supplies a portion of treated water to municipal systems.
- Brine discharge monitoring includes community observers.
- Land access agreements recognise informal users and provide relocation support where required.
- A grievance mechanism is in place before site clearing begins.

Creating and sharing benefits:

- Skills and jobs:
 - Local trainees are employed in mini-grid installation and maintenance.
 - Construction employment prioritises local labour where feasible.

- Economic participation
 - Small businesses connected to the mini-grid report improved operating hours.
 - Local electricians are certified to service renewable components.
- Community benefits:
 - Stabilised electricity supply reduces generator use and associated fuel costs.
 - Mini-grid infrastructure remains under a locally governed operating arrangement.

Collaboration:

- Coordination with municipal authorities on long-term energy planning.
- Alignment with national energy access programmes.
- Engagement with local business associations to monitor economic effects.